# ARDOT Job 040762 Greenwood Bypass P.E. Environmental Assessment



February 2023



U.S. Department of Transportation Federal Highway Administration

Arkansas Department of Transportation



#### 040762 Greenwood Bypass P.E.

F.A.P NHPP-0065(63) including:

040861: Hwy. 10 - Hwy. 96 (Greenwood Bypass) (S)

F.A.P STPF-9177(10)

040862: Hwy. 71 - Coker St. (Widening) (Greenwood) (S)

F.A.P STPF-9177(11)

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February 8, 2023

Date of Approval

#### **Environmental Assessment**

Submitted pursuant to:

The National Environmental Policy Act (NEPA) 42 U.S.C. §4322(2)(c) and 23 C.F.R. §771

Submitted by: FEDERAL HIGHWAY ADMINISTRATION

and ARKANSAS DEPARTMENT OF TRANSPORTATION

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In compliance with the National Environmental Policy Act, this Environmental Assessment describes the No Action Alternative and the Build Alternative to improve Highway 10 in and around Greenwood between Highway 71 and Highway 96. The analysis did not identify any significant adverse environmental impacts and identifies the Build Alternative as the Preferred Alternative.

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## **Chapter 1: Purpose & Need**

This chapter explains the purpose of the project, why improvements are needed, and the project's lead agency roles.

#### 1.1 What is the proposed project?

The Arkansas Department of Transportation (ARDOT) is proposing capacity and other transportation improvements for the City of Greenwood in Sebastian County. The proposed project would involve widening Highway (Hwy.) 10 between Hwy. 71 and Hwy. 96. It would also widen East Center Street between downtown Greenwood and Hwy. 96. A new location section and three new bridges would be constructed. Two existing bridges would be replaced, and sidewalks, a shared-use path, and new traffic signals would be provided.

As shown on **Figure 1**, the project is a combination of Jobs 040861 and 040862. For the purposes of this Environmental Assessment (EA), the project impacts were evaluated together under Job 040762 Greenwood Bypass P.E.

#### 1.2 What are the current conditions in the project area?

#### **Regional System**

**Figure 2** shows the regional transportation system described below. Center Street (formerly named Hwy. 10 Spur) and Hwys. 10, 71, and 96 comprise the main roadway network in and around the Greenwood area. Hwy. 10 and Center Street are the only east-west minor arterials within Greenwood. Hwy. 10 traverses the state for approximately 135 miles from the Oklahoma border to Interstate 30 in Little Rock. Hwy. 71 runs approximately 310 miles from the Texas border to the Missouri border. Hwy. 71 is a four-lane divided principal arterial route for approximately 8 miles from its intersection with Hwy. 10 on the west side of Greenwood to Interstate 540 in Fort Smith. Hwy. 96, a two-lane major collector route, connects to Hwy. 22 approximately 6 miles north of its Hwy. 10 intersection on the east side of Greenwood and serves as a secondary route to Fort Smith. Center Street provides a connection between Hwys. 10 and 71 northwest of Greenwood and is the most direct route to and from Fort Smith.

Minor arterials generally link cities, towns, and other destinations and are used for trips of moderate length. **Principal arterials** serve through traffic and carry moderate to high traffic volumes traveling relatively long distances and at higher speeds.

**Figure 1. Project Location** 



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#### Hwy. 10 and Center Street

From Hwy. 71 to Coker Street, Hwy. 10 (Excelsior Road) consists of two 10' wide lanes. Running northward to Center Street, Hwy. 10 consists of two 12' wide lanes. From Center Street to Hwy. 96, Hwy. 10 consists mainly of two 12' wide lanes with 8' wide shoulders. In 2018, the average daily traffic (ADT) ranged from 3,200 to 4,500. Truck percentages are relatively low, ranging from 2% to 5%. The posted speed limits range from 35 to 45 miles per hour (mph)



Figure 2. Regional Highway System

Center Street consists of two 12' wide travel lanes, one 12' wide continuous two-way left-turn (TWLT) lane, and 7' wide shoulders. Posted speed limits range from 35 to 45 mph, and ADT ranges from 15,000 near Hwy. 71 to 12,000 near Hwy. 96. Hwy. 10 and Center Street serve commercial developments with numerous access points in both Greenwood's Central Business District (CBD) and adjacent areas. **Figure 3** shows the routes and other details described in this section.

The Hwy. 10 bridges over Heartsill Creek and Vache Grasse Creek east of the CBD are the only crossings of these waterways for approximately 20 miles. This creates a bottleneck point and causes delays on Hwy. 10. It also impedes emergency services and access to homes and businesses when incidents such as vehicle crashes and periodic maintenance activities occur. Other than within the CBD, sidewalks are not present along Hwys. 10 and Center Street. Bicycle lanes are not present anywhere in Greenwood.

Access points include driveways, streets, and intersections. High access point density contributes to congestion and travel delays.

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Figure 3. Local Highway System

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The Greenwood Walking Trail provides a paved, multi-use connection between the CBD and surrounding neighborhoods. Due to the lack of sidewalks, pedestrians using Hwy. 10 and Center Street walk alongside traffic in travel lanes, on shoulders, or on adjacent unpaved surfaces. Similarly, bicyclists ride alongside traffic without dedicated lanes.

Greenwood's population has been growing and is projected to continue to grow approximately 1% annually over the next 20 years. Regional commuting studies indicate that over 60% of workers residing in Greenwood travel to employers in the Fort Smith area. Additionally, over 1,500 residents east of the city limits commute through Greenwood to the Fort Smith area. Hwy. 10 and Center Street were not designed for longer distance trips and therefore experience delays during the morning and afternoon peak hours. Additionally, Greenwood High School is located on Main Street 0.50 mile north of Hwy. 10, and both East Hills Middle School and East Pointe Elementary School are located

on Mt. Harmony Road just south of Hwy. 10 and 0.25 mile east of the CBD. Travel to schools during student pickup and drop off hours increases traffic volumes and therefore delays are experienced during the morning and afternoon peak hours.

# **1.3** How is the project related to other transportation plans and goals?

The Frontier Metropolitan Planning Organization 2040 Metropolitan Transportation Plan identified an increase in residential and retail development between Greenwood and Fort Smith. The growing Fort Smith area, including the Chaffee Crossing industrial park and other Fort Chaffee commercial developments, provides employment opportunities. The plan includes widening Hwy. 10 Spur (10S) through Greenwood from Mt. Harmony Road to Hwy. 71 in its list of potential projects for 2021-2030. It should be noted that Hwy. 10S was renamed Center Street in December 2022. All of the documents referenced in this EA prepared prior to the renaming therefore refer to existing Center Street as Hwy. 10S.

The *Greenwood Master Street Plan* (1996) guides future development of local roadways in Greenwood. The plan identifies extending Hwy. 10 through to Hwy. 96 as necessary for orderly industrial growth and development, as well as the need for Hwy. 10S between Hwy. 71 and Hwy. 10 to become a four-lane facility.

The *Greenwood Master Pedestrian and Bicycle Facilities Plan* (2015) includes an extensive system of multi-use trails serving most neighborhoods in Greenwood. This system is supplemented by on-road facilities in select locations. The plan calls for improved paved shoulders on Hwy. 10 and Hwy. 10S throughout Greenwood apart from the CBD, where bicycle lanes are recommended.

The *Greenwood Bypass Study* (2007) considered preliminary options to enhance regional connectivity and mobility. Widening existing roadways and constructing a bypass route involving new location were both analyzed. The study concluded that a southern bypass would serve more traffic than a northern bypass. At the request of local officials, the Arkansas State Highway Commission approved Minute Order 2017-039 authorizing an update of the 2007 study to consider one additional option. This resulted in the *Greenwood Bypass Study Update* in 2018. Both bypass studies are provided in **Appendix A**. **Connectivity** refers to the number and directness of routes and roadways. Multiple routes and connections serving the same origins and destinations provide good connectivity.

**Mobility** is the easy movement of people and goods through an area.

Connectivity and mobility improvements reduce congestion and increase roadway capacity. Arkansas Highway Commission Minute Order 2019-076 authorized a partnership between ARDOT and the City of Greenwood for the design and construction of Hwy. 10 capacity improvements, including a bypass. The City of Greenwood partnered with ARDOT in an Agreement of Understanding executed in August 2020 and committed to the following: funding a portion of construction costs; donating right of way; and assuming ownership and responsibility of the highway sections that would be bypassed by the proposed project. A Supplemental Agreement dated July 2022 resulted in ARDOT expediting Hwy. 10S resurfacing in exchange for transferring ownership of Hwy. 10S to the City of Greenwood. Hwy. 10S was removed from the state highways system in December 2022 when Greenwood assumed ownership and the route was renamed Center Street.

#### 1.4 Why are the proposed improvements needed?

This section references the existing conditions described in section 1.2 and summarizes the *Greenwood Bypass Study Update*.

#### System Connectivity and Traffic Operations

As shown on Figure 3, Hwy. 10 is the only route in the area that crosses Heartsill Creek and Vache Grasse Creek. Hwy. 10 also passes through the CBD. Hwy. 10 and the CBD streets lack access management and were not designed to accommodate current traffic volumes. These conditions contribute to the following mobility concerns:

- Lack of connectivity resulting in high traffic volumes traveling through the CBD. This causes peak hour delays, which can be worsened by the proximity of school campuses and associated traffic. It also causes delays in commutes to Fort Smith and other trips to destinations north of Greenwood, as detailed below.
- If the Hwy. 10 bridges at the Heartsill and Vache Grasse Creek crossings are closed for unexpected events such as vehicle crashes or maintenance activities, motorists would be forced to take an approximately 20-mile detour. Such closures interfere with emergency services, local access to homes and businesses, and regional commutes. This condition results in a lack of transportation system resiliency.

Traffic volumes and delays reduce mobility. Based on current and future traffic volumes, levels of delay in Greenwood are currently considered reasonable except for the intersection of Hwy. 10 and Main Access management includes several techniques designed to increase the capacity of roads and manage congestion.

**Resiliency** is the ability of a transportation system to move people around in the face of obstacles to normal function. It includes features to accommodate high traffic volumes and unexpected problems, as well as allowing for future growth and associated changes to usage or access patterns. Street in the CBD. Due to the lack of system connectivity, traffic volumes exceed the capacity of this intersection and impede mobility. Westbound queues of over 0.50 mile frequently occur on weekday mornings at this intersection. Existing development within the CBD and adjacent commercial areas restrict widening options at the intersection. Delays and the duration of peak periods are predicted to increase in future years as growth-related traffic volumes increase.

Additionally, traffic volumes are expected to exceed capacity at the intersection of Center Street and Hwy. 71. Southbound traffic on Hwy.71 turning left at Center Street currently yields to northbound traffic before turning. As traffic volumes increase, these turns will become increasingly difficult to make and lengthen delays on Hwy. 71.

#### **Pedestrian and Bicycle Facilities**

Due to the lack of sidewalks, pedestrians use Hwy. 10 and Center Street to travel across Greenwood. Since roadway shoulders are lacking in many places, pedestrians must walk alongside traffic either within or immediately adjacent to travel lanes. When bridges without shoulders are encountered, pedestrians must walk in the travel lanes. Bicyclists have no other option than to travel alongside traffic along these routes due to the absence of bicycle lanes. The factors outlined above create a higher potential for conflicts between pedestrians, bicyclists, and vehicular traffic.

#### 1.5 What is the purpose of this project?

The primary purpose of this project is to address the system connectivity, mobility, capacity, and resiliency concerns described above. Project goals and objectives include providing safe facilities for pedestrians and bicyclists, ensuring economic competitiveness of the surrounding area, and enhancing quality of life for both Greenwood and nearby residents.

#### 1.6 Who is leading this project?

This project is led by a partnership between the Federal Highway Administration (FHWA) and ARDOT. The FHWA is involved because it is funding a portion of the project and has the primary responsibility for the content and accuracy of this National Environmental Protection Act (NEPA) document. Pedestrian and

bicvcle facilities are vital components in a community's transportation infrastructure. Not only do they reduce traffic congestion by providing an alternate means of travel, sidewalks and bicycle lanes also provide recreational opportunities, encourage healthy lifestyles, and enhance a community's quality of life.

The project is also being funded through state funds allocated to ARDOT. ARDOT is responsible for administering and maintaining the state highway system and associated bridges. For these reasons, ARDOT is a co-lead agency with the FHWA.

#### 1.7 What is the purpose of this EA?

This EA was prepared under NEPA to:

- Evaluate the social, economic, and environmental effects of the project.
- Inform the public and decision makers about potential project impacts so their feedback can be solicited.
- Provide sufficient evidence and analysis to determine whether to prepare a Finding of No Significant Impacts (FONSI) or a more detailed Environmental Impact Statement.

A Finding of No Significant Impact (FONSI) presents the reasons why an action will not have significant environmental effects and therefore does not require preparing an **Environmental Impact** Statement. Based on analyses and project feedback received to date, ARDOT anticipates preparing a FONSI for this project.

## **Chapter 2: Alternatives**

This chapter identifies the project limits, explains how project alternatives were developed, and describes the alternatives evaluated in this EA.

#### 2.1 What are the project limits?

As outlined in Chapter 1, the *Greenwood Bypass Study Update* evaluated the need for transportation improvement to address connectivity and mobility. Among other options, the study identified a bypass with an associated widening option. ARDOT job 040762 was programmed to implement the recommended improvements between Hwy. 71 and Hwy. 96, a total length of approximately 2.8 miles. Hwys. 71 and 96 are major traffic generators for Hwy. 10 and provide rational beginning and endpoints for improvements in Greenwood.

#### 2.2 How were alternatives developed?

The 2007 Greenwood Bypass Study considered two options of widening Hwy. 10 between Hwy. 71 and Mt. Harmony Road/Hwy. 77 just east of Hwy. 96. It also considered four new location/bypass corridors with combinations of widening existing roadways and providing new location routes. Two of the corridor options were on the south side of Greenwood and two were on the north side. The widening-only options were predicted to be more disruptive to the community and more costly due to the need for right of way acquisition, particularly within the CBD. The study also concluded that a southern bypass would serve more vehicles in the future (2026) than would a northern bypass corridor. The study therefore recommended a southern bypass and associated widening. However, one of the two southern bypass alternatives was dismissed due to relatively higher floodplain and other waterway impacts, the amount of new right of way required, and acquisition and construction costs. The Greenwood Bypass Study Update identified a modification of the southern bypass corridor option described in the 2007 study. This modified alternative would optimize widening existing roadways in combination with a new location section.

**Floodplains** are areas covered by water in a flood event. A 100year floodplain would be covered by a flood event that has a 1% chance of occurring (or being exceeded) each year, and is the category commonly used for insurance and regulatory purposes.

# 2.3 How would the alternatives evaluated in this EA improve traffic operations?

Two alternatives were considered for this project: the Build Alternative and the No Action Alternative. Since only one alternative involving project construction was identified, the Build Alternative is interchangeably referred to as the "proposed project" or "project".

#### **Build Alternative**

As shown on **Figure 4**, the Build Alternative would include modifying existing highway sections and constructing a section on new location. The new location section would be just south of the CBD between Fowler Street and Hwy. 96 and include: four 11' wide travel lanes with a 12' TWLT lane; curb and gutter; 5' wide sidewalks with 3' wide grass berms on both sides of the roadway; and three new bridges.

#### Figure 4. Proposed Project Details



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A connection from the new location section to Main Street would include: two 14' wide lanes; curb and gutter; and 5' wide sidewalks with 3' wide grass berms.

Center Street widening would include two 12' wide travel lanes and TWLT lane with curb and gutter, a 10' wide shared-use path with a 6' wide grass berm one side and an 8' wide grass berm on the other. Two existing bridges, including the Heartsill Creek crossing, would be replaced. A traffic signal would be installed at the intersection of Hwy. 10, Center Street, and Hwy. 96.

Existing Hwy. 10 widening from Coker Street to Hwy. 71 would include: four 11' wide travel lanes with a 12' TWLT lane; curb and gutter, a 5' wide sidewalk with a 3' wide grass berm on the right side and a 10' shared use path with a 6' grass berm on the left side. A traffic signal would be installed at the intersection of Hwy. 71 and Hwy. 10 to prevent traffic queuing and delays. **Figure 5** shows the typical sections described above.

The proposed project would also include installing a storm sewer system and extending and replacing existing cross drainpipes and box culverts. Design speed would be 45 mph.

Capacity would be improved by widening Hwy. 10 and Center Street and improving their respective intersections with Hwys. 71 and 96. The new location route and bridges would be partially access controlled, allow through traffic to avoid the CBD, and connect more directly to Center Street and Hwy. 96, thereby increasing connectivity.

Connectivity would be improved by modifying Hwy. 10 and Center Street and their respective intersections with Hwys. 71 and 96. A new location that avoids the CBD would more directly connect Hwy. 10 to Hwy. 96. The new location route would also provide a partiallycontrolled access section, thereby reducing congestion. Adding travel and turn lanes would increase roadway capacity, distribute traffic volumes onto additional routes, and result in reduced congestion and travel delays. **Figure 6** shows the predicted ADT differences resulting from the proposed improvements.

**Partially-controlled access** gives preference to through traffic while providing access to selected public roads.

#### Figure 5. Typical Sections



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Figure 6. Predicted ADT with Proposed Improvements

The additional bridge across Heartsill Creek would improve system connectivity, mobility, and resiliency by providing two waterway crossing within Greenwood in place of the current single crossing point. Although currently below statewide averages for similar highways, crash rates would also be expected to be further decreased by reducing stop-and-go conditions on Hwy. 10 and Center Street and the partiallycontrolled access afforded by the new location section.

Providing sidewalks, bicycle lanes, and a shared-use path would improve pedestrian and bicycling travel and safety in support of *Greenwood Master Pedestrian and Bicycle Facilities Plan* goals. The provision of wider bridges with shoulders would also enhance pedestrian travel and safety by allowing walkers to avoid using the vehicular travel lanes.

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#### **No Action Alternative**

The No Action Alternative would not change the existing roadway network; however, routine maintenance would still be required. This alternative would also not provide any pedestrian or bicycling facilities.

The No Action Alternative does not meet the project's purpose and need of improving system connectivity and current and forecasted traffic operations; however, the No Action Alternative was considered in this EA as a baseline comparison of impacts against the Build Alternative.

# 2.4 How has the public been involved in developing alternatives?

Public interaction is essential for involving citizens and stakeholders in the transportation decision-making process. A Public Officials meeting and a Public Involvement (PI) meeting were held on April 21, 2022. Project information was also available on the ARDOT website from April 21 through May 6, 2022. The PI meeting had a total of 126 attendees and the website had a total of 577 viewers; a total of 44 comments were received. The meeting generated a wide range of comments and suggestions. Most of the comments indicated support for the proposed project. The PI meeting synopsis is provided in **Appendix B**.

#### 2.5 How have tribal governments been involved?

Section 106 of the National Historic Preservation Act requires federal agencies to consult with tribes where projects could affect tribal areas with historical or cultural significance. The FHWA initiated tribal coordination during the scoping process with the tribes that have an active cultural interest in the area.

The Tribal Historic Preservation Officers were given the opportunity to comment on the proposed project. The Cherokee, Osage, and Caddo Nations were the only tribes to respond, and they had no objections to the proposed project. A copy of the cultural resources report completed for the project would be provided to any tribes requesting it. A "**No Action**" alternative must be considered under NEPA. Although unlikely to meet a project's purpose and need, the No Action alternative provides a baseline against which the other alternatives can be compared.

The following **tribal governments** were contacted: Cherokee Nation; United Keetoowah Band of Cherokee Indians in Oklahoma; Caddo Nation; Shawnee Tribe; Quapaw Nation; Osage Nation; and Choctaw Nation of Oklahoma.

## **Chapter 3: Project Impacts and Mitigation**

This chapter summarizes potential project impacts on people and the environment.

#### 3.1 How were potential impacts evaluated?

ARDOT environmental and planning specialists conducted studies to determine potential environmental, social, and economic impacts associated with the proposed project. Potential impacts are described in the text and, as applicable, additional information is incorporated by reference, included in the appendices, or available in the project's administrative file. Where possible, mitigation measures to minimize or neutralize negative effects and enhance positive effects are identified.

All the analyses in this section are based on preliminary design. As design progresses from preliminary to final, every effort would be made to avoid or minimize negative impacts. Off-site areas that might be needed during construction (e.g., borrow pits, material and equipment storage areas, etc.) would be evaluated when they are identified during the construction phase of the project.

#### 3.2 How much would the project cost?

In 2023 dollars, total project cost is estimated at approximately \$50.6 million. The total cost estimation breakdowns are as follows:

- Utilities (reimbursable and non-reimbursable) = \$5.6 million
- Construction = \$42.4 million
- Right of Way (acquisition and relocation) = \$2.6 million

#### 3.3 Would any properties or utilities be relocated?

Until the final project design has been established, relocation numbers can only be estimated. The estimated conceptual stage relocation report, utilities, and other right of way information provided in **Appendix C** is summarized below.

The proposed project would result in a total of six relocations. This includes one residential owner, one residential tenant, one business, and one landlord business.

**Impacts** are changes or effects that could result from proposed project. The impacts may be social or cultural, economic, or ecological. The terms "impact" and "effect" can be used interchangeably. It is not anticipated that any low-income, minorities, or disabled persons would be displaced. However, it is estimated that one elderly residential person would be displaced by the project.

Relocation activities are governed by the Federal Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, which ensures that appropriate housing is available and offered to displaced residents prior to project construction.

Utilities in the project area include Arkansas Valley Electric, SWEPCO, Arkansas Oklahoma Gas, Pinnacle Telecom, Century Link, and Cox Communications. These utilities are transmitted by both above- and below-ground lines. Although efforts would be made to avoid utilities to the extent feasible, some utility relocations would be necessary.

The No Action Alternative would not require any property or utility relocations.

#### 3.4 How would land uses change?

As shown in **Figure 7**, the following land uses as designed by Greenwood's Official Zoning Map are present along the project corridor:

- Highway Commercial
- Central Commercial
- Single Family Residential
- General Residential
- Restricted Industrial

The proposed project would permanently acquire approximately 48 acres of new right of way and 4 acres of temporary construction easement. The project would be compatible with Greenwood's Master Land Use, Street, and Pedestrian and Bicycle Facilities plans. Land use effects would therefore be beneficial in these zones. Additionally, providing sidewalks and a shared-use path would support Greenwood's goals of providing pedestrian and bicycling facilities.

The No Action Alternative would not change any land uses.

**Relocations** occur when a residence, business, or nonprofit organization is impacted to the extent that they cannot continue to live or do business at their current location. **Utility relocations** can cause extra expense and project delays.



#### Figure 7. Land Use Zone Classifications

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#### 3.5 Would there be any community impacts?

In the past 10 years, Greenwood's population has increased from 8,952 (2010 Census) to 9,516 (2020 Census). This represents a 6% population increase exceeding that of Sebastian County's annual population increase of 1.6%. 2020 U.S. Census American Community Survey data indicated that Greenwood's median household income is \$57,078; however, 12.7 percent of the population of the Greenwood live below the established poverty level of \$27,750 for a family of four.

Greenwood is primarily residential and has numerous retail businesses and community services. Businesses and services along Hwy. 10 and Coker Street include:

- Pink Bud Nursing Home for the Golden Years
- Preschool Extraordinaire Childcare
- VanHearron, Inc.
- Stewart Drugs Pharmacy

- El Palenque Mexican Restaurant
- Faith-based religious institutions
- Apartments and duplexes

Business and services between Coker Street and Hwy. 96 include:

- South County Animal Hospital
- Alliance Motors Auto Dealership
- U-Haul Dealer
- Real Food Catering and meal prep company

**Appendix D** contains detailed socio-economic information for Greenwood and its vicinity. Potential effects are summarized below.

The proposed project is predicted to benefit the community by improving local and through-traffic accessibility to businesses, commercial and residential usages. Emergency service providers would also benefit from increased resiliency. The addition of shared-used paths would benefit the community by enhancing and expanding pedestrian and bicycling facilities.

Project design has minimized the need for right of way acquisition to the extent possible. ARDOT's design engineers would continue to be responsive to the concerns of residents and business owners regarding driveway configurations and other specific property concerns.

The No Action Alternative would not directly impact the community.

#### 3.6 What is Environmental Justice and how is it addressed?

Environmental Justice refers to social equity in bearing the burden of adverse environmental impacts. In the past, minorities and low-income populations have experienced disproportionate impacts caused by transportation projects. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued as a response to these concerns.

An Environmental Justice evaluation (see Appendix D) was prepared for the proposed project to determine if low-income or minority populations would suffer disproportionately high and adverse effects of the proposed project. The evaluation determined that despite resulting in some property impacts, the proposed project would not sever any subdivisions or neighborhoods or disrupt community services. No disproportionately high and adverse effects on any minority or low-income populations or Title VI violations would occur. Environmental Justice at the FHWA includes addressing potentially adverse effects to achieve an equitable distribution of benefits and burdens.

Title VI of the Civil Rights Act of 1964 prohibits discrimination based on race, color, sex, national origin, religion, or disability under any program or activity receiving federal financial assistance. The No Action Alternative would not have any Environmental Justice impacts.

#### 3.7 Would the project impact Important Farmland?

The Natural Resource Conservation Service (NRCS) administers the Farmland Protection Policy Act of 1981 to ensure that federal programs minimize unnecessary and irreversible conversion of Important Farmland, including Prime Farmland or Farmland of Statewide Importance. The Build Alternative would require the conversion of 9.2 acres of Important Farmland.

No significant impacts to important farmlands are expected as a result of the Build Alternative. The Farmland Conversion Rating Form submitted to the NRCS is provided in **Appendix E**.

Important Farmland would not be acquired under the No Action Alternative because new right of way would not be needed.

# **3.8 Would the project involve or create any hazardous materials sites?**

A visual assessment and database search were performed to determine if any hazardous materials are in the project area. As shown on **Figure 8**, two underground storage tanks (USTs) containing fuel, one aboveground storage tank (AST) containing liquid asphalt, and one underground oil water separator were identified at the ARDOT District 4 Area Headquarters. Design plans indicate that the oil water separator and maintenance building would be impacted by the proposed project. The USTs, AST, and associated pumps would also not be impacted. Although Greenwood's Wastewater Treatment Facility is located adjacent to the proposed project area, none of the facility ponds or infrastructure would be impacted.

If hazardous materials, unknown illegal dump sites, or USTs are identified or accidentally uncovered during project construction, the type and extent of contamination would be determined according to the ARDOT response protocol. In cooperation with the Arkansas Department of Energy and Environment, Division of Environmental quality (ADEQ), appropriate remediation and disposal methods would be determined. **Contaminated site discoveries** may have an adverse impact on the timely completion of a project. Potential areas of contamination are therefore assessed during the early stages of project development.



Figure 8. Hazardous Materials Locations

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An asbestos survey would be conducted on each building slated for acquisition and demolition. Asbestos-containing materials would be removed prior to demolition in accordance with ADEQ, Environmental Protection Agency (EPA), and Occupational Health and Safety (OSHA) regulations.

The No Action Alternative would not impact any hazardous materials sites.

#### 3.9 Would the project affect parks or recreation areas?

The Greenwood Walking Trail is in the project footprint. This multi-use trail is owned and maintained by the City of Greenwood and is considered a Section 4(f) recreational resource subject to protections. FHWA therefore determined that a Section 4(f) evaluation was warranted; a draft *De Minimis* 4(f) *Evaluation* is attached in **Appendix F**. Potential recreational impacts and Section 4(f) requirements are discussed below.

Project construction contractors would be instructed to coordinate construction activities within and adjacent to the trail with the City of Greenwood Parks and Recreation Department. The majority of the trail would remain open and accessible during construction. However, the trail would be temporarily and periodically closed at the Hwy. 10 bridge over Heartsill Creek and at the new location section south of Main Street during construction activities. ARDOT Environmental Division personnel would assist the Greenwood Parks and Recreation Department with trail reconstruction activities and coordination with other agencies (e.g., U.S. Army Corps of Engineers and ADEQ). ARDOT would also help coordinate the use of Greenwood's social media and other communication means to keep the public informed about periodic trail section closures. Greenwood would be responsible for reconnecting the trail under the Hwy. 10 bridge. However, ARDOT would ensure a crosswalk with appropriate markings and flashing lights is provided for the trail crossing south of Main Street.

The No Action Alternative would not affect any parks or recreation areas.

#### 3.10 Would noise levels change?

Noise level predictions using the FHWA Traffic Noise Model 2.5 software indicated that approximately 11 noise sensitive receptors could experience noise impacts under the Build Alternative.

However, approximately six of these receptors were predicted to experience noise impacts under current conditions. In accordance with the ARDOT noise policy, the impacts would be considered minor (e.g., noise levels not exceeding a 1 to 2 dBA increase) and would not warrant the consideration of noise consideration of noise mitigation measures such as noise walls. Section 4(f) resources are those protected by Section 4(f) of the US Department of Transportation Act. Section 4(f) resources include publicly owned parks, national wildlife and refuge area, and significant historic sites.

Noise sensitive receptors include residences and public places that have a special sensitivity to noise, such as schools, churches, and parks. The increases are below the 3 dBA threshold at which most people can easily detect a sound level change. Noise wall construction would not be feasible from an engineering perspective due to the need for driveway and intersection access along the project corridor. **Appendix G** provides the noise assessment report prepared for the proposed project.

Highway construction typically increases noise levels. These increases would be temporary and minor and would not constitute noise impacts as defined by the FHWA noise regulation and ARDOT noise policy.

The No Action Alternative would not result in noise level changes other than what would occur due to growth-related traffic volume increases.

#### 3.11 How would the project area's visual quality be affected?

Increased roadway widths and addition of sidewalks and a shared use path would alter the appearance of the existing roadway for travelers along the road and for residents and businesses (referred to as project "neighbors"). Construction on new location would introduce a new road to a previously undeveloped area with no current neighbors. Four new bridges would be constructed, but the streams they are crossing are relatively small and the bridges are not anticipated to rise high enough above the surrounding landscape to become a distinct visual resource. The removal of existing structures and several acres of trees and other vegetation would alter visual resources along the project corridor. Some existing residences and commercial buildings would be in closer proximity to the roadway.

Project visual resources would not detract from the area's overall existing visual character. Local planning and development guidelines would be taken into consideration to ensure compatibility. For these reasons, overall visual quality impacts are likely to be largely neutral, or beneficial in some cases. Impacts may be beneficial for some business neighbors, which may benefit from increased visibility to travelers. Impacts may be adverse for residential neighbors and Greenwood Walking Trail users, for whom views of the roadway would become more prominent.

Project construction would result in draining an existing wetland, vegetation clearing, and the short-term presence of construction vehicles and equipment, temporarily altering the area's visual character. Impacts in roadside cleared areas would be minor and short-term until new vegetation becomes established.

#### A decibel

(abbreviated as dBA for human hearing perception) is the unit used to measure the loudness of sounds. Some common sounds and their dBA levels include:

Whisper -15

Normal conversation – 60

Noisy restaurant – 80

Chainsaw - 110

Visual resources include features such as roadway elements like cross sections and construction materials, buildings and other manmade structures, and vegetation. Adverse impacts to overall visual quality expected as a result of the project would be minor. A visual impact assessment technical memorandum (including a scoping questionnaire and visual impact definitions) is provided in **Appendix H**.

The No Action Alternative would not directly impact visual quality in the project area.

#### 3.12 How would water resources be impacted?

Two perennial streams, several unnamed ephemeral tributaries, multiple small wetlands, and one 5.2-acre pond are within the project area. The water resources described below are shown on **Figure 9**, and additional water resource and other natural resources information is provided in **Appendix I**.

#### **Floodplains**

Potential encroachment into regulatory floodplains was reviewed, and Special Flood Hazard Areas, also known as the 100-year floodplain, were identified. The new bridges and existing bridge replacements would be designed to not increase the flood risk to adjacent properties and would not result in any net rises of the floodplain elevation or affect water surface elevations.

#### Streams

Impacts to Waters of the U.S. calculated within the proposed project right of way and construction limits. Potential impacts include a total of 1,636 linear feet (LF) of the perennial streams (Heartsill Creek and Vache Grasse Creek) and 854 LF of five unnamed ephemeral streams.

Impacts to vegetation along streams will be minimized as much as practicable to protect riparian buffers and overall water quality. Storage of petroleum and other chemical products would be prohibited near waterways.

#### Wetlands

Impacts to wetlands include 4.2 acres due to draining, 0.8 acre due to fill within proposed construction limits, and 0.4 acre due to clearing and grubbing between proposed construction limits and right of way. Impacts to wetlands total 5.4 acres.

Visual quality impacts are determined by predicting viewer responses to changes in the project area's visual resources.

#### Figure 9. Water Resources



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Compensatory mitigation for wetland and stream impacts would occur during the Section 404 permitting process. Stream and wetland mitigation would likely be required to offset construction impacts. Stream and wetland credits would be purchased from one of the commercial banks servicing the area as compensatory mitigation. Construction of the proposed project should be allowed under the terms of a Nationwide 23 Section 404 Permit for Approved Categorical Exclusions as defined in the Federal Register 86(245):73522-73583.

The No Action Alternative would not impact water resources in the project area.

# **3.13** Would any protected species and their habitats be impacted by the project?

The official species list obtained through the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation website identified the following as federally-listed species potentially occurring **Mitigation banks** offset ecological losses caused by development projects by preserving and restoring a different area. Mitigation banks are more costeffective than creating separate mitigations for multiple projects.

Project Impacts 25

in the project area: Indiana bat (*Myotis sodalis*); northern long-eared bat (*Myotis septentrionalis*); Piping Plover (*Charadrius melodus*); Red Knot (*Calidris canutus rufa*); Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*); American burying beetle (*Nicrophorus americanus*); Alligator Snapping Turtle (*Macrochelys temminckii*), and the monarch butterfly (*Danaus plexippus*).

Indiana and northern long-eared bats use open forests, riparian corridors, and forest edge habitat for foraging and summer roosting habitat. The proposed project would directly impact approximately 14 acres of potential roosting and foraging habitat for Indiana and northern long-eared bats. Presence/absence surveys for the listed bat species would be conducted prior to seeking concurrence from the USFWS. Sedimentation entering streams during construction could reduce the foraging potential for the listed bat species, which feed on emerging aquatic insects in addition to terrestrial insects. However, these indirect effects would be minimized by implementing sediment and erosion control practices during construction and including the ARDOT Water Pollution Control Special Provision in construction contracts.

Suitable habitat for the Piping Plover and Red Knot, which occasionally appear in Arkansas along shorelines during migration, is absent from the project area; therefore, no impacts to these species are anticipated. Herbaceous wetlands occurring in the project area could serve as migration habitat for Eastern Black Rail. According to the Clean Water Act's Section 401(b)(1) Guidelines (40 CFR 230), it must be demonstrated that impacts to waters of the U.S. are avoided or minimized to a practicable extent. ARDOT measures to minimize wetland impacts would therefore also help protect potential Eastern Black Rail habitat.

The American burying beetle (ABB), a large and colorful carrion beetle with a scattered population distribution across the U.S., prefers grassland, savannah, and oak-hickory woodland habitat. Multiple records for this species from the 1990s indicate the presence of the ABB within 1 mile of the project area (ANHC 2021). Approximately 8.9 acres of suitable ABB habitat would be permanently impacted within the project area.

The Alligator Snapping Turtle has been proposed as a threatened species by the USFWS. Suitable habitat exists in the project area in the form of perennial streams, ponds, and wetlands. This habitat would be **Presence/absence surveys** for bat species are performed by trained specialists and include both acoustic surveys and mist-netting. The surveys aim to determine when bats emerge from their roosts at dusk emergence and/or reenter at dawn.



Endangered American burying beetle

impacted by the project. ARDOT will implement measures to minimize the level of impact to this species' preferred habitat in accordance with the Clean Water Act's Section 401(b)(1) Guidelines (40 CRF 230). ARDOT has determined that this action will not jeopardize the continued existence of the Alligator Snapping Turtle.

The monarch butterfly is a candidate species and as such is not federally protected under the Endangered Species Act. However, the USFWS recommends agencies implement conservation measures for candidate species in action areas as these are species, by definition, that may warrant future protection under the Act. ARDOT will plant native wildflowers after construction as a conservation measure.

Bald Eagles (*Haliaeetus leucocephalus*) are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Suitable nesting habitat is present within the proposed project area for Bald Eagle and other migratory birds, including Cliff Swallow (*Petrochelidon pyrrhonota*), Barn Swallow (*Hirundo rustica*), and Eastern Phoebe (*Sayornis phoebe*). Phoebes and both swallow species commonly use bridges and culverts for nesting. Other migratory birds can also nest on transportation structures. The ARDOT Nesting Sites of Migratory Birds Special Provision would be implemented to ensure that the proposed project would avoid or minimize potential adverse effects to species protected under the Migratory Bird Treaty Act and other federally protected species.

The No Action Alternative would not affect protected species or habitats.

Temporary impacts most commonly result in increased rates of sedimentation from stormwater runoff from disturbed soils during construction. Permanent impacts include increased rates of pollutants such as fertilizer, herbicides, insecticides, and petroleum products in stormwater runoff. No additional adverse indirect and/or cumulative impacts associated with the proposed project were identified.

The No Action Alternative would not result in indirect or cumulative effects.

#### 3.14 Would there be any indirect or cumulative effects?

Transportation projects, particularly those specifically implemented to address forecasted population and economic growth, can result in Stormwater runoff occurs when rain flows over land or impervious surfaces such as paved streets. Runoff can deposit harmful pollutants into streams and lakes. Construction sites are potential temporary sources of stormwater pollutants. Best management practices such as Water Pollution Control Special Provisions are therefore used to control stormwater and prevent pollution at its source.

increased urban development. Urban development is associated with decreases in water quality both temporarily and permanently.

# **3.15** What resource areas are either not impacted or present in the project area?

#### **Air Quality**

The proposed project is within an area designated by the EPA as meeting transportation pollutant standards. Procedures for conforming with the Clean Air Act, as amended, are therefore not applicable. The Build Alternative was determined to generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special mobile source air toxics (MSAT) concerns. Changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause a meaningful increase in MSAT impacts of the project from that of the No Action Alternative would not result.

#### **Public Drinking Water**

The Arkansas Department of Health database of public water supplies was reviewed to determine if any surface water intakes, wellheads, or associated protection areas of either type were present in the project area. No known public water supplies are in or near the project area, and there are no impacts to public water supplies anticipated with either alternative.

#### **Cultural Resources**

Section 106 of the National Historic Preservation Act requires agencies to consider the effects of federal actions to historic properties. In compliance with Section 106 requirements, ARDOT cultural resource specialists consulted with the State Historic Preservation Officer and Tribal Historic Preservation Officers. Project-related impacts are not anticipated. **Appendix J** provides additional Cultural Resource information.

#### Wild and Scenic Rivers

No Wild and Scenic Rivers or other federal or state regulated waterbodies are within the project area and would therefore not be impacted. **Cultural Resources** include elements of the built environment (building, structures, or objects) or evidence of past human activity (archeological sites). Those that are eligible for inclusion in the National Register of Historic Places are defined as **historic properties**.

#### Landforms and Vegetation

The project area has varied topography and contains diverse vegetation types. Vegetation impacts in the context of threatened and endangered species and habitat impacts are described in sections 3.12 and 3.13 of this EA. The project area is located completely within the Arkansas Valley Plains of the Arkansas Valley Ecoregion (Level IV Ecoregions 37d; Woods et al., 2005). Vegetation in the project area includes mostly oak-hickory and oak-hickory-pine forests, pasture and hay fields, and farmland, with small remnants of prairie and woodland. Floodplains with low terraces contain willows, maples, hickories, birch, American elm, and American sycamore. Pastureland in the project area is primarily comprised of nonnative tall fescue and Bermuda grass. Common edge plant species in the project area include blackberries, honeysuckles, privet, American beautyberry, and young trees.

The forested, edge, and open field habitats provide cover and foraging opportunities for many of the common wildlife species and species of concern. Most wildlife species found in the project area are habitat generalists and are not restricted to a particular habitat type. Neither the Build Alternative nor the No Action Alternative would disturb any landforms or geological features, and the majority of the project area has been previously disturbed for commercial and residential development Additional landform, vegetation, and other natural resource information is provided in Appendix I.

## **Chapter 4: Results and Recommendations**

This chapter summarizes environmental analysis results and recommendations.

#### 4.1 What are the results of this EA?

The environmental analysis of the proposed project did not identify any significant impacts to the natural and social environment as a result of the proposed project. **Table 1** summarizes quantitative alternative impacts for comparison purposes.

#### 4.2 What commitments have been made?

ARDOT's standard commitments regarding relocation procedures, hazardous materials, cultural resources discovery, water quality impact controls, and revegetation made for this project are as follows:

- All land acquisitions and relocation assistance would comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. A residential relocation plan would be required prior to any property acquisitions.
- If hazardous materials, unknown illegal dumps, or USTs are identified or accidentally uncovered by ARDOT personnel or its contractors, the type and extent of the contamination would be determined according to the ARDOT's response protocol. In cooperation with the ADEQ, appropriate remediation and disposal methods would be determined.
- Project construction would follow all applicable Clean Water Act, as amended, requirements. This includes obtaining the following: Section 401 Water Quality Certification; Section 402 National Pollutant Discharge Elimination Permit; and Section 404 Permit for Dredged or Fill Material.
- Stream and wetland mitigation would be offered at an approved mitigation bank site at a ratio approved during the Section 404 permitting process.
- Presence/absence surveys for Indiana and northern long-eared bats would be conducted.
- A Water Pollution Control Special Provision would be incorporated into the contract to minimize potential water quality and Indiana and northern long-eared bat impacts.

- Appropriate action would be taken to mitigate any permanent impacts to private drinking water sources should they occur due to the proposed project.
- Greenwood Walking Trail localized, periodic, and temporary closures during construction would be coordinated with the Greenwood Parks and Recreation Division. ARDOT would assist with post-construction agency coordination and ensure that a crosswalk and other appropriate pedestrian safety features are installed at the trail crossing south of Main Street.

#### 4.3 Is the NEPA process finished?

After this EA is approved by the FHWA for public dissemination, the Preferred Alternative will be officially identified and a public hearing and 30-day comment period held.

Following a review of comments received from citizens, public officials, and public agencies, a FONSI document will be prepared by ARDOT and submitted to the FHWA. If the FONSI is approved by the FHWA, it will identify the Selected Alternative and conclude the NEPA process.
## Table 1. Impact Summary

Resource Category	No Action Alternative	<b>Build</b> Alternative			
ENGINEERING					
ROW Required	0 acres	48 acres			
Construction Cost	\$0	~\$42.4 million			
ROW Cost*	\$0	~\$2.6 million			
Utility Relocation Cost	\$0	~\$5.6 million			
Total Cost	\$0	~\$50.6 million			
NATURAL RESOURCES					
Streams	0 LF	2,490 LF			
Wetlands	0 acres	5.4 acres			
Suitable Bat Habitat Impacts	0 acres	14 acres			
Suitable American Burying Beetle Habitat Impacts	0 acres	8.9 acres			
	RELOCATIONS				
Residential Owners	0	1			
Residential Tenants	0	1			
Businesses	0	2			
OTHER RESOURCES					
Noise Impacts	0	11 sensitive receptors			
Important Farmland	0	9.2 acres			
Visual Quality Impacts	None	Minor			
Section 4(f) Recreational Resources	None	1			

# **Reference Page: Acronyms**

ABB	American burying beetle
ADEQ	Arkansas Division of Environmental Quality
ADT	Average Daily Traffic
ARDOT	Arkansas Department of Transportation
AST	Aboveground storage tank
CBD	Central Business District
dBA	Decibel
EA	Environmental Assessment
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impacts
$\mathbf{LF}$	Linear feet
Mph	Miles per hour
MSAT	Mobile Source Air Toxics
NEPA	National Environmental Policy Act
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
SHPO	State Historic Preservation Officer
USFWS	U.S. Fish & Wildlife Service
UST	Underground Storage Tank

# Appendix A

# Planning Studies

**Greenwood Bypass Study** 

# **Sebastian County**



February 2007

## **Greenwood Bypass Study**

## **Sebastian County**

## February 2007

Prepared by the Planning and Research Division Arkansas State Highway and Transportation Department In Cooperation with the Federal Highway Administration

AHTD:P&R:SP:JXJ:2/12/07

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### **EXECUTIVE SUMMARY**

At the request of the City of Greenwood, the Arkansas Highway Commission passed Minute Order 97-113 authorizing a study of the feasibility of a connection between Highway 10 (Excelsior Road) and Highway 96 to improve traffic flow for east-west traffic traveling through Greenwood. Recently, the City requested that the study be expanded to include the analysis of additional corridors which would connect Highway 10 to the new location route for Highway 71. Corridors analyzed in this study are shown in Figure 1.

Population growth, residential development and commercial development have heightened the need for improving traffic flow through the City of Greenwood. The need for improved east-west travel is further enhanced by the release of Fort Chaffee property immediately north and west of Greenwood. It is anticipated that the release of the property and the Highway 71 relocation will lead to additional industrial, commercial, and residential development. The recommended alignment for the proposed Interstate-type Highway 71 relocation crosses existing Highway 71 northwest of Greenwood as shown in Figure 2. Interchanges in the area are proposed with Highway 10, with the existing Highway 71 route and with Massard Road northwest of Greenwood.

The six alternatives considered for improvement include two options of widening Highway 10 Spur and Highway 10 between Highway 71 and Mt. Harmony Road, and four new location options. The four new location alternatives include two southern corridors and two northern corridors. All of these alternatives would enhance east-west traffic flow and safety in the area. Although widening Highway 10 through the Central Business District (CBD) would be costly and disruptive to the community and would require the relocation of some businesses, widening Highway 10 Spur and a portion of Highway 10 from Highway 10 Spur to Mt. Harmony Road should be considered in order to improve the level of service to an acceptable level. Each of the six alternatives or a combination of new location and widening existing Highway 10 Spur are considered feasible. However, Corridor 2 is not recommended due to the significant encroachment along Adamson Creek and Vache Grasse Creek. Funding sources for the improvements have not been determined at this time. Once a preferred alternative is chosen, all jurisdictions involved should work cooperatively to



preserve the right-of-way until funding becomes available. A summary of all six alternatives is shown in Table 1.



Alternative	Length (miles)	Total Estimated Cost (\$ Millions, in 2006 Dollars)	2026 LOS Highway 10S	2026 LOS Highway 10 between Highway 10S and Mt. Harmony Road		
	W	Videning Existing Roadwa	у			
Widening-A (Widening Highway 10S to 5-Lane and Highway 10 from Mt. Harmony Road to Highway 10S to 4-Lane) Without the Completion of Highway 71 Relocation	4.2	\$29.8	В	В		
Widening-A (Widening Highway 10S to 5-Lane and Highway 10 from Mt. Harmony Road to Highway 10S to 4-Lane) With the Completion of Highway 71 Relocation	4.2	\$29.8	C*	C*		
Widening-B (Widening Highway 10S to 5-Lane and Highway 10 from Mt. Harmony Road to Highway 10S to 5-Lane) Without the Completion of Highway 71 Relocation	4.2	\$31.2	В	В		
Widening-B (Widening Highway 10S to 5-Lane and Highway 10 from Mt. Harmony Road to Highway 10S to 5-Lane) With the Completion of Highway 71 Relocation	4.2	\$31.2	C*	C*		
Southern Corridors						
Corridor 1	2.6	\$ 36.4 (5-lane)	D	D		
Corridor 2	3.0	\$ 43.0 (5-lane)	D	D		
	1	Northern Corridors				
Corridor 3	9.0	\$38.6 - \$46.3 (2-lane) \$69.7 - \$83.9 (4-lane)	D	D		
Corridor 4	11.5	\$47.7 - \$57.5 (2-lane) \$87.3 - \$104.1 (4-lane)	D	D		

Table 1. Summary of Alternative Improvements

\*the level of service is estimated based on the normal growth in the area and additional growth due to the construction of Highway 71 Relocation.

### **INTRODUCTION**

Greenwood is located southeast of Fort Smith in Sebastian County (see Figure 2). Based on the 1990 and 2000 Census results, Greenwood grew by 79% from a population of 3,984 in 1990 to 7,112 in 2000, while the population of Sebastian County increased by 16% from 99,590 in 1990 to 115,071 in 2000. Traffic increases accompanying this growth have caused congestion on the existing roadway system throughout the community.

#### **Roadway Network**

Highways 10, 10 Spur, 71, and 96 make up the existing roadway network in and around the Greenwood area as shown on Figure 3. East-west travel in Greenwood is primarily handled by two minor arterial routes, Highways 10 and 10 Spur. To the west, Highway 10 intersects Highway 71 before entering Oklahoma and continuing to Poteau as Oklahoma Highway 120. To the east, Highway 10 continues to Booneville and eventually to Little Rock. Highway 10 Spur serves as a connection between Highways 10 and 71 northwest of Greenwood and is the most direct route to and from Fort Smith. Highway 96, a major collector route, connects to Highway 22 to the north and serves as a secondary route to Fort Smith.

Highway 71 is a principal arterial route and on the National Highway System (NHS). It is a four-lane divided facility from Highway 10 to Fort Smith. The new location for Highway 71, commonly referred to as Interstate 49, has been programmed and will be constructed as an Interstate-type facility.

From Highway 71 to South Coker Avenue, Highway 10 is known as Excelsior Road and consists of two 10-foot lanes. Elm Street is a local road that parallels Excelsior Road to the north and the east end of Elm Street merges with Excelsior Road. From Excelsior Road to Highway 10 Spur, Highway 10 (South Coker Avenue) consists of two 12-foot lanes. From Highway 10 Spur to Highway 96, Highway 10 consists mainly of two 12-foot lanes with 8-foot shoulders. Highway 10 Spur consists of two 12-foot travel lanes, one 12-foot continuous, two-way, left-turn lane and 7-foot shoulders. Through Greenwood's CBD, both

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Highways 10 and 10 Spur serve commercial developments with associated drives and intersections.

Mt. Harmony Road is a local street located approximately 0.3 mile east of Highway 96. One of the main entrances to a middle school and a junior high school is located off Mt. Harmony Road. Presently, the City has approved a northward extension of Mt. Harmony Road to intersect Highway 96 and is considering improving Bell Road and extending Denver Street to Highway 96. Both Bell Road and Denver Street are local streets and there are two elementary schools, one middle school and one high school located off Denver Street. The proposed improvements to the local streets would provide an alternate route for school traffic which currently joins the heavy through traffic on Highways 10 and 10 Spur.

Currently, commuters traveling to Fort Smith have the option of using Highway 10 or Highway 10 Spur through Greenwood. In order to provide an alternate route around Greenwood's CBD, a connection between Highway 10, at South Coker Avenue and West Elm Road, and Highway 96 has been included in the City's Master Street Plan for several years. In addition, the City indicated that a connection between Highway 10 east of Greenwood to the new location of Highway 71 would better relieve the congestion in the CBD and provide better mobility for through traffic.

### **Highway Improvement Projects**

The status of some highway improvement projects in the Greenwood area are listed below:

- Widening Highway 71 to four lanes from Highway 10 Spur to Highway 10 for a distance of 1.37 miles completed in May 1997.
- Resurfacing of Highway 10 Spur east of Highway 71 for a distance of approximately 2.8 miles – completed in March 1998.
- Overlay of Highway 10 east of Highway 96 for a distance of approximately 1.45 miles completed in 2000.
- A segment of the future Highway 71 for a distance of 2.11 miles from Custer Boulevard to Highway 22 is currently under construction.
- Projects have been programmed for Highway 71 (future I-49) to complete the relocation from Jenny Lind to Highway 22.

### **PURPOSE AND NEED**

The purpose of the proposed improvements considered in this traffic study is to enhance traffic safety, relieve traffic congestion in the CBD and to provide an acceptable level of service for those traveling through the study area.

#### **Traffic and Level of Service**

Level of service (LOS) is a quality measure describing conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service, A (best) through F (worst), are defined and described in the Appendix. For the highways in the Greenwood area, LOS C is considered acceptable. The 2000 Highway Capacity Manual Software was utilized for the capacity analysis.

Currently, traffic volumes along Highway 10 in the Greenwood area range from 3,600 vehicles per day (vpd) to 12,000 vpd. The traffic volumes on Highway 10 Spur range from 13,700 vpd to 17,300 vpd. Average daily traffic (ADT) volumes for 2006 and the projected traffic for 2026 are shown on Figure 4. On the basis of a 1997 Origin-Destination Survey, roughly half of the traffic on these highways travels between east of Greenwood and the Fort Smith area. Highway 10 from Highway 96 to Highway 10 Spur and all of Highway 10 Spur currently operate at LOS D and are predicted to decrease to LOS E by the year 2026. Highway 10 from Highway 96 to the east is operating at LOS C and is projected to decrease to LOS D by the year 2026. The LOS of the existing roadway system in 2006 and the predicted LOS for the year 2026 are illustrated in Figures 5 and 6, respectively.





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similar routes.

The relative safety of a route can be determined by comparing the crash rate (the number of crashes per million vehicle miles traveled) of the route to a statewide average crash rate for Annual average crash rates were calculated for the highways in the Greenwood area for the three-year period from 2002 to 2004, the most recent years for which data are available (see Table 1). Highway 10 from Highway 10 Spur to Highway 96 and Highway 71 from Highway 10 Spur to Jenny Lind had higher crash rates than the statewide

 

 Table 2. Crash Analysis Summary

Highway 10 (From Highway 71 to Highway 10 Spur) (Section 0, Log mile 8.91-11.14) Year Number of Crashes Crash Rate Statewide Average Crash Rate\* 2002 6 2.30 4.47 2003 5 4.07 1.68 2004 8 2.66 4.26 Two-lane, undivided, urban highways Highway 10 (From Highway 10 Spur to Highway 96) (Section 1, Log mile 0-0.85) Number of Crashes Year Crash Rate Statewide Average Crash Rate\* 2002 14 4.51 4.47 5.10 2003 19 4.07 4.96 2004 16 4.26 Two-lane, undivided, urban highways Highway 10 Spur (From Highway 71 to Highway 10) (Section 0, Log mile 0-3.07) Statewide Average Crash Rate\* Number of Crashes Crash Rate Year 2002 46 3.42 4.47 2003 37 2.36 4.07 2004 59 3.48 4.26 Two-lane, undivided, urban highways Highway 71 (From Highway 10 Spur to Jenny Lind) (Section 14, Log mile 1.75-4.36) Statewide Average Crash Rate\* Number of Crashes Year Crash Rate 2002 21 0.85 0.67 2003 20 0.78 0.67 2004 0.68 0.58 16 Four-lane, divided, partial control of access rural highways

average for similar facilities for all three years. Over 60% of the crashes along Highway 10

from Highway 10 Spur to Highway 96 were rear-end collisions. This type of crash is an

indicator of congestion along the roadway, with stop-and-go conditions and frequent turning

maneuvers. Three rear-end crashes in 2002, two in 2003 and four in 2004 are identified at

the intersection of Highway 71 and Highway 10 Spur. The highlighted areas in Table 2

illustrate the sections of highways that have crash rates above the statewide average.

## **DESCRIPTION OF ALTERNATIVES**

#### **No-Build Alternative**

The No-Build Alternative includes no capacity improvements through Greenwood. Impacts will occur due to increased traffic demand on the system resulting in more severe congestion, increased travel times, reduced speeds and increased costs from crashes.

#### **Roadway Widening**

The existing congestion occurs primarily along Highway 10 Spur and the portion of Highway 10 in the CBD of Greenwood. The typical cross section for widening Highway 10 Spur would consist of four 11-foot lanes with a continuous, two-way, left turn lane, and curb-and-gutter and the total estimated cost including construction, preliminary engineering (PE) and right-of-way (ROW) in 2006 dollars is \$21.1 million. The total estimated cost in 2006 dollars for widening Highway 10 including widening the bridges over Heartsill Creek and Vache Grasse Creek from Highway 10 Spur to Mt. Harmony Road is \$8.7 million for a four-lane cross section and \$10.1 million for a five-lane cross section which includes a continuous, two-way, left-turn lane. However, acquisition of ROW in the commercialized area is considered disruptive to the community and the cost of acquisition may have a higher cost than the above estimates.

The need for signalizing the intersection of Highway 71 and Highway 10 Spur was analyzed. Chapter 4C of the Federal Highway Administration *Manual on Uniform Traffic Control Devices for Streets and Highways (2003 Edition)* provides a guide for warranting a traffic signal based on traffic conditions, pedestrian characteristics, and physical characteristics of the location. Based on the turning movement count conducted in spring 2005 and the crash history, this intersection does not meet the warrants for signalization.

#### **New Location Corridors**

#### Southern Corridors

For purposes of this review, the cross sections for the two southern corridors would consist of four 11-foot lanes with a continuous, two-way left turn lane, 8-foot shoulders, and low-type, partial access control. Both corridors would utilize portions of Highway 10 where widening to four or five lanes would be required. The rural nature of the development along the western portion of Highway 10 would allow widening without a significant impact on existing development. The southern portion of Highway 96 is included in both of the new location corridors in order to avoid the sewer treatment facilities and an office complex in that area (see Figure 1). Shifting of a short section of the existing Highway 96 alignment may be required to avoid these facilities.

#### **Corridor 1**

Corridor 1 includes widening Highway 10 to four lanes from Highway 71 to South Coker Avenue. Corridor 1 leaves the existing alignment of Highway 10 at South Coker Avenue near the southwestern city limits of Greenwood and travels to the east on new location alignment crossing both Adamson and Vache Grasse Creeks and continuing to the intersection of Highways 10 and 96. This corridor is approximately 2.6 miles in length, of which 1.8 miles is widening with the remainder involving new location construction, including about 0.7 mile of bridging. The estimated cost including construction, PE and ROW in 2006 dollars is \$36.4 million.

#### **Corridor 2**

Corridor 2 includes widening a portion of Highway 10 to four lanes from Highway 71 to the east for approximately 0.83 mile. At this point, Corridor 2 leaves the existing alignment of Highway 10 and the new location section crosses Adamson Creek, South Coker Avenue, and Vache Grasse Creek and continues to the intersection of Highways 10 and 96. As a result of the large width of floodplain along Adamson and Vache Grasse Creek, this corridor has a total length of approximately 3.0 miles, of which 0.83 mile is widening with the remainder as new location construction, including about 0.8 mile of bridging. The estimated cost

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#### Northern Corridors

The northern corridors would connect Highway 10 from east of Greenwood to Highway 96 and proceed to Highway 71 or to Massard Road near the future Highway 71/Massard Road Interchange. From Highway 10 near Ware Road to the north of New Jenny Lind, both corridors would share the same alignment. Both corridors cross Vache Grasse Creek, Long Ridge Road, and Prairie Creek. The typical cross sections for the northern corridors would consist of two 12-foot lanes with 8-foot shoulders. However, traffic volumes on the northern bypass may warrant a four-lane rural facility due to additional social and economic growth associated with the construction of future I-49.

#### **Corridor 3**

The western terminus of Corridor 3 is at Highway 71 near Jenny Lind (see Figure 1). Portions of the existing city and county roads such as Ware Road, North Main Street, McLain Road, and Elmwood Road could be utilized (see Figure 3). This corridor has a total length of approximately 9.0 miles including widening improvements to approximately five miles of existing roads and streets with the remainder being new location construction, including about 0.6 mile of bridging. The estimated cost including construction, PE and ROW in 2006 dollars is \$38.6 million. However, the estimated cost would be \$46.3 million if all new location construction were required from Highway 96 to Highway 71.

#### **Corridor 4**

Corridor 4 terminates at Massard Road near the future Highway 71/Massard Road Interchange. Portions of the existing city and county roads such as Ware Road, North Main Street, McClain Road, and Rye Hill Road could be utilized. The corridor has a total length of approximately 11.5 miles, of which almost six miles of existing routes could be widened with the remainder being new location construction, including about 0.6 mile of bridging. The estimated cost including construction, PE and ROW in 2006 dollars is approximately

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\$47.7 million. However, the estimated cost would be \$57.5 million if all new location construction were required from Highway 96 to Massard Road.

### **Comparison of Alternatives**

### Cost

Because the new location corridors may cross parts of the Adamson Creek and Vache Grasse Creek floodways, each of the southern alternatives includes approximately 0.8 mile of structure and each of the northern alternatives includes approximately 0.6 mile of structure. Table 3 summarizes the costs for all the alternatives studied.

	Construction		Preliminary	Right-		
Alternative	Roadway	Bridge	Engineering	of-Way	Total	
Wide	ning Existing	Roadway				
Widening -A Widen Highway 10S to 5-Lane and Highway 10 from Mt. Harmony Road to Highway 10S to 4-Lane (4.2 miles)	\$19.1	\$1.3	\$3.0	\$6.4	\$29.8	
<b>Widening -B</b> Widen Highway 10S to 5-Lane and Highway 10 from Mt. Harmony Road to Highway 10S to 5-Lane (4.2 miles)	\$19.6	\$1.8	\$3.2	\$6.6	\$31.2	
Southern Corridors						
<b>Corridor 1</b> – (2.6 miles)	\$7.3	\$22.2	\$4.4	\$2.5	\$36.4	
<b>Corridor 2</b> – (3.0 miles)	\$9.4	\$25.3	\$5.2	\$3.1	\$43.0	
]	Northern Corr	idors				
<b>Corridor 3</b> – (9.0 miles)	\$17.6 (\$36.2) <sup>1</sup>	\$12.4 (\$18.6) <sup>1</sup>	\$4.5 (\$8.2) <sup>1</sup>	\$4.1 (\$6.7) <sup>1</sup>	\$38.6 (\$69.7) <sup>1</sup>	
<b>Corridor <math>3^2 - (9.0 \text{ miles})</math></b>	\$23.4 (\$46.9) <sup>1</sup>	\$12.4 (\$18.6) <sup>1</sup>	\$5.4 (\$9.8) <sup>1</sup>	\$5.1 (\$8.6) <sup>1</sup>	\$46.3 (\$83.9) <sup>1</sup>	
<b>Corridor 4</b> – (11.5 miles)	\$24.4 (\$49.3) <sup>1</sup>	\$12.6 (\$18.9) <sup>1</sup>	\$5.5 (\$10.2) <sup>1</sup>	\$5.2 (\$8.9) <sup>1</sup>	\$47.7 (\$87.3) <sup>1</sup>	
<b>Corridor</b> $4^2 - (11.5 \text{ miles})$	\$31.7 (\$61.2) <sup>1</sup>	\$12.6 (\$18.9) <sup>1</sup>	\$6.6 (\$12.0) <sup>1</sup>	\$6.6 (\$12.0) <sup>1</sup>	\$57.5 (\$104.1) <sup>1</sup>	

Table 3.	Cost Estimates	(\$million,	in	2006	dollars)
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<sup>1</sup> Costs are estimated for a four-lane facility.

<sup>2</sup> All new location construction except for the reconstruction of Ware Road.

Widening Highways 10 Spur and 10 between Highway 71 and Mt. Harmony Road would improve traffic operation on these highways from LOS E to LOS B in 2026. Based on the *"Final Environmental Impact Statement– U.S. 71 Relocation DeQueen to Interstate 40"* (1997) (FEIS), it is projected that traffic on Highways 10 and 10 Spur may be increased by approximately 4,000 vpd by 2026 due to construction of the Highway 71 Relocation. With this additional traffic, traffic operation on the study segment of Highways 10 and 10 Spur would still operate at an acceptable level (LOS C) in 2026 if they are widened.

Both southern corridors were estimated to divert approximately 3,000 vehicles per day (vpd) from the CBD if built now and 4,000 vpd by the year 2026; both northern corridors were estimated to divert approximately 4,000 vpd if built now and 6,000 vpd by the year 2026. It is anticipated that the southern corridors would serve approximately 8,000 vpd now and 11,000 vpd by the year 2026 (see Figure 7); the northern corridors would serve approximately 5,000 vpd now and 7,000 vpd by the year 2026 (see Figure 8). Traffic conditions on Highway 10 Spur and on the portion of Highway 10 between Highway 10 Spur and Mt. Harmony Road would be improved from LOS E to LOS D in 2026 if any one of the new location corridors were constructed. If the traffic estimated from the 1997 FEIS is to be considered, the southern corridors would serve as many as 14,000 vpd and the northern corridors would serve as many as 9,000 vpd by 2026 (see Figures 7 and 8).





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## **ENVIRONMENTAL IMPACTS**

A preliminary environmental review of the alternatives indicated the following information.

### **Roadway Widening:**

- No recorded cultural resources sites exist along existing Highway 10 or Highway 10 Spur.
- There are up to five structures along the study section that might be eligible for the National Historic Register.
- There are many residential and business properties along the study section. Widening any portion of existing Highway 10 or 10 Spur could result in direct or indirect impacts to residential and business properties, including several relocations.

### Southern Corridors/ Northern Corridors:

- The construction of a bypass around Greenwood within the corridor areas would require a Nationwide Section 404 Permit and/or Letter of Permission Permit. There is the possibility of minor wetlands within the stream floodplains.
- The American Burying Beetle (*Nicrophorus americanus*), a federally listed endangered species, is found in Sebastian County. According to the Natural Heritage Data Base, there is one record of the beetle in the eastern portion of the corridor areas.
- There are many residential and business properties throughout the corridor areas. Construction of any alignment in the corridors could result in residential and business relocations.
- Any alignment selected outside of the city limits would possibly affect prime farmland. If so, farm acquisition and severance issues would need to be addressed.
- Moderate probability of having significant cultural resources has been found within the corridors.

- Structures that have possible historic importance have been found within the southern corridors.
- No recorded archeological sites exist in the southern corridor areas.
- There are three cemeteries, two properties on the National Register, a road on the General Land Office (GLO) map, four gas wells, and 15 archeological sites in the northern corridor areas.

Further surveys are necessary to determine the extent of the environmental impact and measures needed to ensure compliance with environmental regulations when design becomes available.

### FINDINGS

This study considered the feasibility of widening an existing roadway or constructing a bypass around Greenwood. The population of Greenwood is continuing to grow, as reflected by the 79 percent growth between 1990 and 2000. Much of the future growth is expected to occur to the east of Greenwood. Therefore, local traffic volumes will continue to increase on Highways 10, 10 Spur, 71, and 96 along with the through traffic from adjacent towns.

Highway 10 from Highway 10 Spur to Mt. Harmony Road and all of Highway 10 Spur already have an unacceptable level of service (LOS D) and conditions are expected to worsen. Also, Highway 10 between Highway 10 Spur and Highway 96 and Highway 71 from Highway 10 Spur to Jenny Lind have crash rates that are above the statewide average for similar facilities. Six alternatives were developed to address these conditions including two roadway widening alternatives and four bypass corridors. Information on these six alternatives is summarized in Table 4.

The southern corridors would serve more traffic than the northern corridors. Construction of either alternative of the southern corridors might include shifting the alignment of the existing Highway 96 to avoid the sewer treatment facilities and an office complex. Highway 10 Spur would continue to carry a larger volume of traffic than any of the proposed alternatives is forecast to carry. However, construction of any of the corridors would improve Highway 10 Spur and Highway 10 between Highways 10 Spur and 96 from LOS E to LOS D. All corridors have potential for environmental impacts. Specifically, Corridor 2 would cross the wide floodplain and cause significant longitudinal encroachment along streams in the area. Further surveys should be conducted to assess the levels of environmental impacts. In addition, widening Highway 10 Spur and a portion of Highway 10 should be considered in order to improve the level of service to an acceptable level (LOS C) regardless of which new corridor alternative may be chosen.

In conclusion, each of the six alternatives or a combination of new location and widening existing Highway 10 Spur are considered feasible. All of these alternatives would enhance

east-west traffic flow and safety in the area. Funding sources for the improvements have not been determined at this time. Once a preferred corridor is chosen, all jurisdictions involved should work cooperatively to preserve the right-of-way until funding becomes available.

Alternative	Length (miles)	Total Estimated Cost (\$ Millions, in 2006 Dollars)	2026 LOS Highway 10S	2026 LOS Highway 10 between Highway 10S and Mt. Harmony Road	
	Widen	ing Existing Roadway	_		
Widening-A (Widening Highway 10S to 5-Lane and Highway 10 from Mt. Harmony Road to Highway 10S to 4-Lane) Without the Completion of Highway 71 Relocation	4.2	\$29.8	В	В	
Widening-A (Widening Highway 10S to 5-Lane and Highway 10 from Mt. Harmony Road to Highway 10S to 4-Lane) With the Completion of Highway 71 Relocation	4.2	\$29.8	C*	C*	
Widening-B (Widening Highway 10S to 5-Lane and Highway 10 from Mt. Harmony Road to Highway 10S to 5-Lane) Without the Completion of Highway 71 Relocation	4.2	\$31.2	В	В	
Widening-B (Widening Highway 10S to 5-Lane and Highway 10 from Mt. Harmony Road to Highway 10S to 5-Lane) With the Completion of Highway 71 Relocation	4.2	\$31.2	C*	C*	
	So	outhern Corridors	_		
Corridor 1	2.6	\$ 36.4 (5-lane)	D	D	
Corridor 2	3.0	\$ 43.0 (5-lane)	D	D	
Northern Corridors					
Corridor 3	9.0	\$38.6 - \$46.3 (2-lane) \$69.7 - \$83.9 (4-lane)	D	D	
Corridor 4	11.5	\$47.7 - \$57.5 (2-lane) \$87.3 - \$104.1 (4-lane)	D	D	

Table 4. Corridor Comparisons

\*the level of service is estimated based on the normal growth in the area and additional growth due to the construction of Highway 71 Relocation.

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## APPENDIX

### **Two-Lane Highway**

**LOS A** - LOS A represents traffic flow where motorists are able to travel at their desired speed. Passing is rarely affected and drivers are delayed no more than 35% of the time by slower drivers.

LOS B - Traffic speeds in LOS B drop and drivers are delayed up to 50% of the time by other drivers.

**LOS C** - At LOS C, speeds are slower than at LOS B. Although traffic flow is stable, it is susceptible to congestion due to turning traffic and slow-moving vehicles. Drivers may be delayed up to 65% of the time by slower drivers.

**LOS D** - LOS D describes unstable flow and passing becomes extremely difficult. Motorists are delayed nearly 80% of the time by slower drivers.

LOS E - At LOS E passing becomes nearly impossible and speeds can drop dramatically.

**LOS F** - LOS F represents heavily congested flow where traffic demand exceeds capacity and speeds are highly variable.

## **Multi-Lane Highway**

**LOS A** - LOS A represents free flow conditions where individual users are unaffected by the presence of others in the traffic stream.

LOS B - Traffic flow in LOS B is stable, but other users in the traffic stream are noticeable.

LOS C - At LOS C, maneuverability begins to be significantly affected by other vehicles.

**LOS D** - LOS D represents dense but stable flow where speed and maneuverability are severely restricted.

**LOS E** - Traffic volumes approach peak capacity for given operating conditions at LOS E; speeds are low and operation at this level is unstable.

**LOS F** - Minor interruptions in the traffic stream will cause breakdown in the flow and deterioration to LOS F, which is characterized by forced flow operation at low speeds and an unstable stop-and-go traffic stream.

# **GREENWOOD BYPASS STUDY UPDATE**

## **CITY OF GREENWOOD SEBASTIAN COUNTY**







## EXECUTIVE SUMMARY MAY 2018

## GREENWOOD BYPASS STUDY UPDATE CITY OF GREENWOOD SEBASTIAN COUNTY

### **EXECUTIVE SUMMARY**



Prepared by the Transportation Planning and Policy Division Arkansas Department of Transportation In Cooperation with the Federal Highway Administration

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# INTRODUCTION

Highway 10 is an east-west minor arterial that serves the City of Greenwood and southeastern Sebastian County in western Arkansas. This route connects central Greenwood and points east with Highway 71, providing access to employment centers in the Fort Smith area.

The *Greenwood Bypass Study* (2007) identified several alternatives to improve mobility within and across Greenwood. At the request of local officials, the Arkansas State Highway Commission approved Minute Order 2017-039 (see Appendix A), authorizing an update of this study to consider an additional alternative. The study area is shown in Figure 1.

# PURPOSE AND NEED

The purpose of this study is to examine the need for improvements and feasibility of an additional alternative through Greenwood that was not considered as part of the 2007 study.

### **EXISTING ROADWAY NETWORK**

Presently, Highways 10 and 10S are the only east-west highway routes within Greenwood.

- From the west, Highway 10S follows Center Street from Highway 71 through the Greenwood Central Business District (CBD). This route has two travel lanes and a continuous, two-way, left turn lane, and it has numerous access points. Speed limits range from 40 to 45 miles per hour (MPH). Highway 10S is the route used by most Greenwood residents to reach Fort Smith via Highway 71.
- From Highway 71, **Highway 10** travels along the southern city limits of Greenwood, making a sharp turn before intersecting Highway 10S near the

CBD. This section has two travel lanes and speed limits range from 35 to 45 MPH.

From Highway 10S, Highway 10 follows Center Street through the CBD and serves points to the east. This section has two travel lanes with a continuous, two-way, left turn lane within the CBD. Speed limits range from 30 to 40 MPH. The bridge over Adamson Creek is the only crossing of this stream in the region, resulting in high volumes on Highway 10.

### PLANNING CONSIDERATIONS

Commuting trends in the study area revealed that over 60 percent of workers in Greenwood travel daily to employers in the Fort Smith area. Furthermore, over 1,500 residents east of Adamson Creek travel through Greenwood to employers in the Fort Smith area. This suggests a large number of through traffic now travel on an urban facility (frequent access, numerous conflicts, low speed limits, etc.) that is not conducive to longer distance trips.

Construction of a Greenwood bypass has been discussed for many years. The *1996 Greenwood Master Street Plan* considered such a project as "necessary for the continued orderly industrial growth and development on the south side of Highway 10." *Greenwood Bypass Study*, adopted by the Commission in 2007, provided several alignments for a potential Highway 10 bypass. A Greenwood bypass project is not included in the current metropolitan transportation plan (MTP) for the Frontier Metropolitan Planning Organization (MPO), the MPO for the region.

#### FIGURE 1 – STUDY AREA



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The transportation network in the Greenwood area experiences the following issues: Only one route, Highway 10, provides access across Adamson Creek east of the Greenwood CBD. If the facility is closed for an unexpected event (traffic incident, maintenance activity, roadway failure, etc.), motorists would be forced to take a 15 to 20 mile detour.

- Such a closure would have detrimental impacts to emergency services, job access, and community cohesion.
- This lack of connectivity results in high traffic volumes on Highway 10 through the CBD. This causes long peak hour delays and makes employment in Fort Smith more difficult to access.

# TRAFFIC OPERATIONS ANALYSIS

Based on the current (2018) and future (2040) volumes (shown in Figure 1) and a traffic operations analysis, levels of delay are reasonable in Greenwood except at the Highway 10 intersection at Main Street. The aforementioned lack of connectivity results in traffic volumes that exceed the capacity of this intersection. Westbound (WB) queues of over one-half mile occur most mornings on Highway 10 at Main Street. Existing CBD developments limit widening options at this location. In future years, delays are expected to further increase along with the duration of peak periods.

In future years, volumes are expected to exceed capacity at the intersection of Highway 10S and Highway 71. Southbound traffic on Highway 71 turning left at Highway 10S currently yields to northbound traffic before turning. As traffic volumes increase, these turns will become increasingly difficult to make, leading to long delays on Highway 71.

A safety analysis of the study area was conducted using 2012 through 2016 crash data, the most recent five years available. Crash locations are illustrated in Figure 2 while crash rates are shown in Table 1.

The average crash rates, as well as the fatal and serious injury (KA) crash rates are below the statewide averages for similar highways. A total of four KA crashes occurred during the five-year study period. Three of these KA crashes involved turning movements across Highway 71. The other KA crash occurred on Highway 10 east of Highway 96.

			Total Crashes		KA Crashes			
Route	Section and Log Miles	Weighted ADT	Number of Crashes	Crash Rate (per MVM) <sup>1</sup>	Statewide Average (per MVM) <sup>1</sup>	Number of Crashes	Crash Rate (per 100 MVM) <sup>2</sup>	Statewide Average (per 100 MVM) <sup>2</sup>
Highway 10S (Highway 71 to Highway 10)	Sect. 0S LM 0.00 to 2.86	14,200	124	1.67	4.47	0	0.00	11.73
Highway 10 (Highway 71 to Highway 10S)	Sect. 0 LM 8.91 to 11.14	3,400	20	1.44	2.62	1	7.22	11.73
Highway 10 (Highway 10S to east of Highway 96)	Sect. 1 LM 0.00 to 1.00	12,000	45	2.05	4.47	1	4.56	11.73
Highway 71 (Highway 10S to Highway 10)	Sect. 14 LM 0.00 to 1.75	11,600	49	1.32	2.18	2	5.39	6.36
<sup>1</sup> Crash rates expressed as crashes per million vehicle miles (MVM). <sup>2</sup> KA crash rates expressed as crashes per 100 million vehicle miles (MVM).								

#### TABLE 1 - CRASH RATES (2012 - 2016)

Greenwood Bypass Study Update Executive Summary



#### FIGURE 2 – CRASH LOCATIONS AND SEVERITY

### **INFRASTRUCTURE CONDITIONS**

A review of the pavement and bridge conditions was conducted for Highways 10 and 10S to determine if any deficiencies are present. The International Roughness Index (IRI), crack rating, and rutting were used to evaluate the pavement. The pavement for both routes is considered poor, and therefore qualifies for preventative maintenance according to the Department's Preventative Maintenance Plan. No bridge sufficiency ratings were low enough to warrant replacement.

### MULTIMODAL CONSIDERATIONS

#### **Pedestrians and Bicycles**

Presently, the only sidewalks on Highway 10 are within the CBD. There are no sidewalks on Highway 10S. Pedestrians have been observed walking in the grass adjacent of Highways 10 and 10S outside of the CBD.

Bicycle lanes are not present anywhere in Greenwood. A multi-use trail is provided in the neighborhoods surrounding the CBD. The *City of Greenwood Master Pedestrian and Bicycle Facilities Plan* includes an expanded system of trails to serve most neighborhoods, including a trail crossing of Adamson Creek.

#### <u>Transit</u>

There is presently no fixed-route transit service in Greenwood.

#### **Freight**

Freight volumes are low on Highways 10 and 10S through Greenwood. The route, however, does provide primary access to much of Sebastian and Logan Counties. Other Planning Considerations

#### Access Management

The lack of access management for Highways 10 and 10S has resulted in closely spaced access points, a lack of connectivity between adjacent properties, and numerous turning movements. This negatively impacts the operational and safety performance of the corridor.

#### **Emerging Technologies**

A number of emerging technological advances, such as autonomous and connected vehicles, are expected to greatly impact how people and goods are transported in future years. Research has suggested that while these technologies may increase roadway capacities, they are just as likely to increase traffic demands. It is important to monitor and consider the development of emerging technologies in the design of any future projects in the Highway 10 corridor.

### PURPOSE AND NEED SUMMARY

Below is a summary of the purpose and need analysis for the subject corridor.

- Most traffic delay in Greenwood is due to a lack of capacity and system connectivity across Adamson Creek.
- The reliance on a single route across Adamson Creek could have a significant impact on the community, such as emergency services and job access, if the existing structures were temporarily closed.
- The safety performance of the corridor is comparable with similar facilities around the State.

In addition to the No-Action Alternative, an improvement alternative was considered. This alternative is in addition to those discussed in *Greenwood Bypass Study* (2007).

## **DESCRIPTION OF ALTERNATIVES**

#### **No-Action Alternative**

Under the No-Action Alternative, no capital improvements would be made to Highways 10 or 10S. This alternative has no cost other than that of continued maintenance. The performance of Highways 10 and 10S would not be improved.

#### **Improvement Alternative**

Under this alternative, Highway 10 would be relocated to a four-lane, divided, access partially controlled route on new location between Highway 96 and Coker Street. Highway 10 would also be widened to four travel lanes between Coker Street and Highway 71. Main Street could also be extended south as a city street to intersect the relocated Highway 10. This alternative is illustrated in Figures 3 and 4. Adjustment to the alignment should be considered to minimize environmental and relocation impacts during project development.

The total cost of this alternative is estimated to be \$26.3 million (in 2017 dollars), including right-of-way acquisition, utility relocation, preliminary engineering, and construction engineering. The estimated construction cost is \$20.6 million (in 2017 dollars). The breakdown of cost is provided in Table 2.

TABLE 2 - IMPROVEMENT ALTERNATIVE COSTS (IN	V 2017 DOLLARS)
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Location	Construction Costs	Total Costs
New Location Segment (Coker Street to Highway 96)	\$11.4 million	\$14.1 million
Improve Existing Segment (Highway 71 to Coker Street)	\$9.2 million	\$12.2 million
TOTAL	\$20.6 million	\$26.3 million



#### FIGURE 3 – IMPROVEMENT ALTERNATIVE

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Vicinity of Greenwood, Sebastian County



#### FIGURE 4 – NEW LOCATION CORRIDOR

# **ANALYSIS OF ALTERNATIVES**

The Improvement Alternative addresses the stated Purpose and Need in the following ways:

- By providing a second route across Adamson Creek, system connectivity through Greenwood and southeastern Sebastian County would be greatly improved. Residents would have an improved route to reach employment opportunities, and the risk of a temporary roadway closure would be mitigated.
- The new route would divert most through traffic and some local traffic from Highway 10 through the CBD. This diversion would ensure adequate operations on existing Highways 10 and 10S as well as the new route through 2040.
- Crash rates would be improved by reducing stop-and-go conditions on Highways 10 and 10S and by diverting through traffic onto a partially controlled access route.
- Traffic volumes would decrease on existing Highways 10 and 10S through central Greenwood, facilitating pedestrian and bicycle use. Additionally, the new route would include pedestrian accommodations in accordance with Department policy.

# **ENVIRONMENTAL CONSIDERATIONS**

A cursory environmental review of the study area was conducted along the new location portion of the Improvement Alternative. The following possible constraints were identified:

- The Pink Bud Nursing Center is located in this area. Right of way and noise impacts to this facility will need to be determined, and mitigation may be needed.
- Wetlands may be present and should be avoided or impacts minimized.
- Impacts to Heartsill Creek and Adamson Creek should be avoided or minimized.

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- Impacts to Coal Miners Park and the existing multi-use trail should be avoided or minimized.
- There is one structure that is eligible for the National Register of Historic Places.
   This property should be avoided.

# CONCLUSIONS

In response to the identified deficiencies in system connectivity and traffic operations, an improvement alternative was developed. The alternative is consistent with the *Greenwood Master Street Plan* and with the vision set forth in the *Greenwood Bypass Study* (2007). It was shown to improve both system connectivity and traffic operations in Greenwood. Furthermore, the new route would be expected to improve safety. Therefore, this alternative should be considered in addition to those in the previous study. The total estimated cost of the Improvement Alternative is \$26.3 million (in 2017 dollars), including \$20.6 million in construction costs.

No funding has been identified for any of the improvements in this study. Due to the high costs associated with roadway improvements, cost sharing with local jurisdictions should be explored. At a minimum, possible removal of highways from the State Highway System should be considered.

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# APPENDIX A MINUTE ORDER 2017-039

#### ARKANSAS STATE HIGHWAY COMMISSION

#### MINUTE ORDER

District: Four County: Sebastian Category: Miscellaneous

Page 1 of 1 Page

WHEREAS, IN SEBASTIAN COUNTY, IN THE CITY OF GREENWOOD, state and local officials have expressed concerns about east-west traffic flow; and

WHEREAS, the Greenwood Bypass Study was adopted by the Commission in 2007; and

WHEREAS, state and local officials have requested that an additional alternative be studied as illustrated on the attached map.

NOW THEREFORE, the Director is authorized to conduct an updated study to determine the need for and feasibility of a bypass around Greenwood.

Approv Chairman Vice-Chairman Member Member Membe TPP:MPP:3/24/17 Form 19-456 Rev. 7/19/2016

Minute Order N 039

Date Passed APR 26 2017



# APPENDIX B TRAFFIC FORECASTING REPORT

Highways 10 and 10S serve as a minor arterial and as a principal route in the City of Greenwood. The route connects central Greenwood and points east to Highway 71, in turn providing access to employment centers in Fort Smith. Within Greenwood, Highway 10 is also the only route that crosses Adamson Creek. This section discusses the characteristics and factors contributing to the recurring congestion in Greenwood. The methods and assumptions for projecting future traffic volumes are also discussed.

#### **TRAVEL CHARACTERISTICS**

Highways 10 and 10S carry a mix of local traffic within Greenwood and regionally through traffic seeking to access Highway 71. Much of this traffic accessing Highway 71 is regional traffic accessing employment in Fort Smith to the northwest. Other users of the corridor are traveling to educational institutions, retailers, or other service providers within Greenwood. Tables B-1 and B-2 shows the commuting flows between Greenwood and other cities. Table B-3 shows when residents typically depart for work. Table B-4 shows the travel mode residents took in route to work

From Greenwood to:	Workers Commuting	Margin of Error	Percentage of Workers	
Fort Smith	2,335	+/-327	59.5%	
Greenwood	790 <sup>1</sup>	+/-198	20.1% <sup>1</sup>	
Van Buren	190	+/-133	4.8%	
Other	610	-	15.6%	
<sup>1</sup> Includes residents who work at home. Source: AASHTO's Census Transportation Planning Products (CTPP) data				

Table B-1 - Greenwood Commuting Patterns (Outbound)

To Greenwood from:	Workers Commuting	Margin of Error	Percentage of Workers
Greenwood	790 <sup>1</sup>	+/-198	37.4% <sup>1</sup>
Fort Smith	235	+/-102	11.1%
Van Buren	60	+/-60	2.8%
Booneville	40	+/-45	1.9%
Other	990	-	46.8%
<sup>1</sup> Includes residents who work at home. Source: AASHTO's Census Transportation Planning Products (CTPP) data			

#### Table B-2 - Greenwood Commuting Patterns (Inbound)

#### Table B-3 - Departure for Work Times (Greenwood Residents)

Time	Workers Commuting	Percentage of Non- Home Workers			
5:00 to 5:30 am	260	6.9%%			
5:30 to 6:00 am	125	3.3%			
6:00 to 6:30 am	225	5.9%			
6:30 to 7:00 am	475	12.5%			
7:00 to 7:30 am	780	20.6%			
7:30 to 8:00 am	595	15.7%			
8:00 to 8:30 am	295	7.8%			
8:30 to 9:00 am	105	2.8%			
Other	2,705	20.4%			
Source: AASHTO's Census T	Source: AASHTO's Census Transportation Planning Products (CTPP) data				

#### Table B-4 – Mode of Travel to Work (Greenwood Residents)

Mode	Workers Commuting	Percentage of Workers	
Single Occupancy Vehicle	3,290	83.8%	
High Occupancy Vehicle (2+)	485	12.4%	
Work at Home	130	3.3%	
Other	20	0.5%	
Source: AASHTO's Census Transportation Planning Products (CTPP) data			

The data indicates that almost two-thirds of workers residing in Greenwood traveled northwest to access employment in Fort Smith or Van Buren. This explains the strong direction distribution spread during peak hours. Additionally, a notable number of workers residing in Greenwood also work in Greenwood.

Commuting patterns from residential areas along Highway 10 to the east of Adamson Creek (both within and outside Greenwood) were examined in more detail, as shown in Table B-5. Similar to Greenwood as a whole, most workers in this area travel through Greenwood to reach employment in Fort Smith. These users in particular must travel across Adamson Creek and then through central Greenwood to reach Highway 71.

From East of Adamson Stream <sup>1</sup> to:	Workers Commuting	Margin of Error	Percentage of Workers	
Fort Smith	1,435	+/-272	50.3%	
Greenwood	485	+/-140	17.0%	
Van Buren	175	+/-124	6.1%	
Other	760	-	26.6%	
<sup>1</sup> Includes residential areas both in Greenwood and unincorporated Sebastian County Source: AASHTO's Census Transportation Planning Products (CTPP) data				

Table B-5 - Commuting Patterns East of Adamson Creek (Outbound)

Greenwood and much of the surrounding area is in the Greenwood School District. The school district has a current (2017-2018) enrollment of 3,781 students. Several of the campuses, including Greenwood High School, are located on Main Street one-half mile to the north of Highway 10. Travel to these schools also results in increased traffic volumes at some times during the day.

# **CURRENT AND FUTURE TRAFFIC VOLUMES**

Current traffic volumes in Greenwood were reviewed for use in identifying mobility needs. Tools used to estimate traffic growth in Greenwood included a review of the following:

- Historic traffic growth on specific routes in Greenwood (Table B-6)
- Relevant county growth rates in Sebastian County (Table B-7)
- Arkansas Statewide Travel Demand Model (ARTDM) Projections (Table B-8)
- Historic census population growth (Table B-9)

Based on a review of these tools, an annual traffic growth rate of 1.10 percent was assumed throughout Greenwood for this study. Current (2018) and projected (2040) volumes are shown in Figure B-1. These volumes do not include the completion of Interstate 49, which will significantly lower volumes on Highway 71 but have limited impact in central Greenwood.

### Historic Traffic Growth on Various Routes

Table B-6 outlines traffic growth on specific routes in the vicinity of Greenwood. Notable traffic growth has occurred in the Highway 10S corridor through western Greenwood and on Highway 10 through the Greenwood central business district. Traffic volumes have decreased on other routes, including Highway 10 to both the east and west of Greenwood. This supports the narrative that Greenwood residents are increasingly seeking employment and other services in Fort Smith. Further review of this data indicated that traffic growth was higher in the late 1990's and early 2000's than in recent years.



Figure B-1 – Average Daily Traffic Volumes

Highway 10S Historic (20 year) Annual Growth Rates			
Station 650008	Between Highway 71 and Denver Street	0.99%	
	Highway 10 Historic Annual Growth Rates		
Station 650005	East of Highway 71	-0.65%	
Station 650006	South of Highway 10S	-0.88%	
Station 650011	West of Highway 96	0.71%	
Station 650012	East of Highway 96	-0.57%	
Highway 96 Historic Annual Growth Rates			
Station 650035	North of Highway 10	0.11%	
Highway 71 Historic Annual Growth Rate			
Station 650031	North of Highway 10S	-0.46%	
Station 650030	North of Highway 10	0.61%	

#### Table B-6 – Historic Growth Rates on Specific Routes

#### Table B-7 – Historic Sebastian County Growth Rates

Historic Sebastian County Annual Growth Rates			
Urban	Principal Arterial	0.81%	
Urban	Minor Arterial	1.21%	
Rural	Principal Arterial	1.62%	
Rural	Minor Arterial	1.77%	

#### Historic Countywide Growth Rates

Table B-7 provides countywide growth rates for Sebastian County based on historic traffic data. Both Highways 10 and 10S in Greenwood are considered urban minor arterials.

#### **ARTDM Projections**

Table B-8 provides annual growth rates based on ARTDM model output. Similar to the trend projections, the ARTDM predicts substantial growth on heavily traveled Highway 10S and Highway 71 between Greenwood to Fort Smith. Little to no growth is predicted on other routes.

Highway 10S Historic Annual Growth Rates			
Link15220	Between Highway 71 and Denver Street	1.17%	
Highwa	y 10 Historic Annual Growth Rates		
Link 15237	East of Highway 71	-0.26%	
Link 15315	South of Highway 10S	0.58%	
Link 15363	West of Highway 96	0.96%	
Link 15878	East of Highway 96	0.21%	
Highway 96 Historic Annual Growth Rates			
Link 15367	North of Highway 10	-0.04%	
Highway 71 Historic Annual Growth Rate			
Links 14974 and 14977	North of Highway 10S	1.00%	
Links 15196 and 15199	North of Highway 10	0.67%	

#### Table B-8 – ARTDM Projected Growth Rates

#### **Census Population Growth**

Table B-9 provides the Census populations for both Greenwood and Sebastian County. The census data indicated continued growth both in Greenwood and in Sebastian County since 1990. In particular, Greenwood saw a large population increase in 1990. The census data also indicated slowing growth in recent years for both Greenwood and Sebastian County. It should be noted that the Greenwood population increase is partially attributable to annexations of the surrounding unincorporated areas.

	Greenwood <sup>1</sup>		Sebastian County	
Year	Population	Annual Change	Population	Annual Change
1990	3,984		99,590	
2000	7,112	5.97%	115,071	1.46%
2010	8,952	2.33%	125,744	0.89%
2016 (est.)	9,362	0.75%	127,793	0.29%
<sup>1</sup> Annexation of unincorporated areas contributed to population increase				

#### Table B-9 – Census Population

#### **Summary of Traffic Projections**

As discussed, numerous tools were used to estimate traffic growth. Based on the use of these tools, an annual growth percentage of 1.10 percent was selected. Even on the lower volume routes that have historically grown at a slower rate, the development of new location alternatives (as well as Interstate 49) will shift existing traffic and development patterns onto these new roadways.

### **DEVELOPMENT OF NO-BUILD MODEL TRAFFIC**

Numerous traffic counts were taken throughout Greenwood to develop a picture of traffic conditions within Greenwood. Figures B-1 through B-4 document expected peak hour traffic volumes throughout Greenwood both in the current and the future year.

Peaking characteristic within the peak hour were also reviewed. This review indicated that a peak hour factor (PHF) of 0.88 (AM) and 0.90 (PM) was appropriate for the study area.

### **DEVELOPMENT OF BUILD MODEL TRAFFIC**

Improvement alternatives will be developed to address any deficiencies identified for the Highway 10 corridor through Greenwood. Supporting traffic information for any improvement alternatives will be developed using the same tools as discussed in this document. Per Arkansas Highway Commission (AHC) Minute Order 2017-039, one alternative to be studied is a bypass to the south.





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Greenwood Bypass Study Update Appendix B - Traffic Forecasting Report

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Greenwood Bypass Study Update Appendix B - Traffic Forecasting Report

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Greenwood Bypass Study Update Appendix B - Traffic Forecasting Report

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# APPENDIX C PURPOSE AND NEED REPORT

This report documents the conditions of east-west travel through Greenwood. Included are both an operational analysis of Highways 10 and 10S (Center Street) as well as a review of recent planning efforts in the area. This will demonstrate how the lack of connectivity forces east-west through traffic to traverse the Greenwood central business district (CBD), and leading to the peak hour delays that are experienced today. The study area is illustrated in Figure C-1.

#### **EXISTING CONDITIONS**

Presently, Highways 10 and 10S are the two primary east-west routes through Greenwood.

- From the west, **Highway 10S** follows Center Street from Highway 71 to the Greenwood CBD. Two ten-foot travel lanes and a continuous, two-way, left turn lane are provided, and speed limits range from 40 to 45 MPH. Numerous access points are found along this corridor. Highway 10S is the route used by most Greenwood residents to reach Fort Smith.
- Highway 10 enters the study area from western Sebastian County and crosses Highway 71, entering southern Greenwood, making a sharp turn at Coker Street. The route then intersects Highway 10S near the CBD. The route consists of two ten-foot lanes are provided, and speed limits range from 35 to 45 MPH.



 From the Highway 10S intersection, Highway 10 follows Center Street through the CBD and serves eastern Greenwood and points east. The route includes twelve-foot travel lanes are generally provided except through the CBD, where lanes are narrower, and a continuous, two-way, left turn lane is included. Speed limits range from 30 to 40 miles per hour (MPH). The Adamson Creek Bridge is the only crossing of this stream in the region, leading to higher volumes on Highway 10.

#### **PLANNING CONSIDERATIONS**

Relevant local planning documents were reviewed to determine the regional transportation vision and how it relates to east-west travel through Greenwood.

#### Frontier MPO Metropolitan Transportation Plan (MTP)

The Frontier Metropolitan Planning Organization (MPO) MTP 2040 identified patterns of new development in the City of Greenwood. Between Greenwood and Fort Smith, development of residential and retail activities are increasing along the Highway 71 corridor. East of the City, new development is primarily residential. Due to the continuing build-out of the industrial park at Chaffee Crossing and the much larger urban center of Fort Smith, many employment opportunities for Greenwood residents are located north of Greenwood, although many motorists still use Highway 71 to reach this area. Improved access to Highway 71 west of the City would improve regional connectivity for commuters.

Although the idea of a new location bypass was previously considered and is currently under study, the MTP includes the widening of Center Street (Highways 10 and 10S) through Greenwood from Mt. Harmony Road to Highway 71 in the list of constrained projects for 2021-2030 (mid-term).

#### **Greenwood Master Street Plan (1996)**

The Greenwood Master Street Plan (1996) guides the future development of local roadways in Greenwood. The plan includes the following policy points:

- "The extension of State Highway 10 through to State Highway 96 is necessary for the continued orderly industrial growth and development on the south side of State Highway 10."
- "State Highway 10 Spur, between U.S. 71 and State Highway 10, will have to become a four lane facility no later than the completion date of the relocation of U.S. 71."

Both the widening of Highway 10S and the construction of a new location Highway 10 route to the south of the central business district have long been desired by Greenwood. The widening of Highway 10S is included in the Frontier MPO's MTP, although no funds have been included in the current Transportation Improvement Program (TIP) for construction.

#### Greenwood Bypass Study (2007)

The Department previously conducted a study that considered east-west bypass options in the City of Greenwood to enhance east-west traffic flow and regional connectivity. The study evaluated two alternatives that widened either Highway 10 or 10S, and four alternatives on new alignment – two to the north and two to the south. The study concluded that while any of the alternatives would improve traffic operations in Greenwood, a southern bypass would serve more traffic. The alternatives previously considered are illustrated in Figure C-2.

A review of potential environmental constraints was included in the previous study. Significant wetlands and three stream crossings were identified along the southern corridor. Additionally, within the study corridor for the southern new alignment location, one historic structure is eligible for the National Register of Historic Places, as well as a city park and multi-use trail. This present study is intended to update the findings of the previous study.

### SYSTEM CONNECTIVITY

System connectivity was reviewed using two metrics:

- Travel times to cross Greenwood were considered. The selected travel time segment began at the Highway 71/Highway 10S intersection and concluded at the Highway 10/Highway 96 intersection. Times are shown in Table C-1. This will serve as a comparison to travel times under a new location improvement alternative.
- A qualitative review of bottleneck points was conducted. There is presently only one route (Highway 10) across Adamson Creek, which leads to high volumes on Highway 10. Furthermore, no alternative route is available in the event that Highway 10 is closed for an unexpected event (traffic incident, maintenance activity, roadway failure, etc.). Such a closure would have detrimental impacts to emergency services, job access, and community cohesion.

Travel Time Per Vehicle (min)									
	2017	2040							
AM <sup>1</sup>	8.2	8.6							
PM <sup>2</sup>	7.3	7.8							
<sup>1</sup> Westbound peak direction <sup>2</sup> Eastbound peak direction									

### Table C-1 – Peak Direction Travel Times Through Greenwood



#### **Figure C-2 Alternatives from Previous**

#### **TRAFFIC OPERATIONS ANALYSIS**

The traffic operations analysis of the existing condition included a review of the signalized intersections in addition to segment performance. Traffic operations along Highways 10 and 10S (Center Street) were analyzed under both existing (2017) and future (2040) traffic, as discussed in the Traffic Forecasting Report (Appendix B). This analysis was performed using Synchro (Version 9), and this is shown in Tables C-2 through C-5. Both levels of service (LOS) and volume-to-capacity (v/c) ratios are shown. For urban areas such as Greenwood, the operations target is typically an overall LOS D or better with v/c ratios below 1.00 for all movements.

During the morning peak, it was determined that current traffic volumes exceed capacity at the Main Street intersection. The intersection of Highway 10 and Main Street is of particular concern due to the poor geometry, which results in longer headways and a lower intersection capacity. During the morning peak period, westbound traffic queues from this intersection through the Highway 96 intersection. Due to the lack of connectivity across Adamson Creek, there are no alternate routes to avoid the queue, further amplifying the problems. Delay levels were not as severe at the Main Street intersection during the afternoon peak.

In the future year, the Main Street intersection is expected to operate above capacity for some movements during both peaks, and the Denver Street intersection is expected to operate above capacity for some movements during the afternoon peak. Additionally, the left turn from southbound Highway 71 onto Highway 10S is expected to operate above capacity, making left turns from Highway 10S onto Highway 71 will be virtually impossible. Even though the left turn volume from Highway 10S is very low, it is desirable that left turns be accommodated for system connectivity purposes.

Highway 10S at Highway 71 (Stop Controlled)													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay				18.1						43.8			
v/c				0.63						0.02			
LOS				С						E			
					High	way 10	S at De	enver S	treet				
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay		46.5		42	2.3	12.5	24.3	25	5.3	14.2	52.8		34.8
v/c	0.76		0.47		0.70	0.54	0.47		0.18	0.93		0.93	
LOS		D		[	)	В	С	(	2	В	[	)	С
Highway 10S at Highway 10													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	49.6							2	.4		3.2		4.5
v/c	0.32							0.	32		0.43		0.43
LOS	D							ŀ	4		А		А
Highway 10 at Main Street													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay		27.3		76	o.2	6.0	30.3	14	1.0	20.0	84	1.7	54.2
v/c	0.07		0.9	92	0.22	0.68	0.	63	0.01	1.	10	1.10	
LOS		С		E	Ξ	А	С	E	3	С		F	D
Highway 10 at Highway 71													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	23.6	16.9	2.3	24.8	11.2	1.0	16	.4	0.0	11	.7	3.3	13.6
v/c	0.12	0.61	0.15	0.22	0.19	0.10	0.	51	0.01	0.	14	0.15	0.61
LOS	С	В	Α	С	Α	Α	E	3	Α	E	3	Α	В
					Hig	hway 1	0 at Hi	ighway	96				
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay				18.1			10.6						
v/c				0.02			0.13						
LOS				С			В						
<sup>1</sup> Reported overall delay represents weighted average of all movements.													
<sup>2</sup> Reported v/c represents worst movement.													

# Table C-2: Intersection Operations – 2017 AM Peak
Highway 10S at Highway 71 (Stop Controlled)													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay				12.8						17.5			
v/c				0.58						0.55			
LOS				В						С			
					High	way 10	S at De	enver S	treet				
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay		50.5		52	2.2	13.2	16.5	45	5.1	17.9	31	.9	35.2
v/c	0.77			0.	58	0.63	0.43	0.	91	0.41	0.	78	0.91
LOS	D			[	)	В	В	[	)	В	(	2	С
	Highway 10S at Highway 10												
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	51.6							20	).8	2.5	3.8		15.8
v/c	0.46							0.	63	0.01	0.40		0.63
LOS	D							(	2	А	А		В
Highway 10 at Main Street													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay		36.4		51	51.5		5.1	26.9		9.0	10	).8	21.6
v/c		0.39		0.	63	0.40	0.17	0.90		0.00	0.	65	0.90
LOS		D		[	)	В	А	С		В		3	С
					Hig	hway 1	0 at Hi	ighway	71				
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	24.4	14.4	1.0	44.1	11.2	3.4	16	b.1	0.0	15	5.4	0.4	13.5
v/c	0.09	0.29	0.1	0.63	0.38	0.21	0	.3	0.02	0.	26	0.09	0.63
LOS	С	В	А	D	В	А	E	3	А	E	3	А	В
					Hig	hway 1	0 at Hi	ighway	96				
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay				15.7			8.7						
v/c				0.04			0.05						
LOS				С			А						
<sup>1</sup> Reported overall delay represents weighted average of all movements.													
<sup>2</sup> Report	ed v/c i	represe	nts wor	st mov	ement.								

## Table C-3: Intersection Operations – 2017 PM Peak

Highway 10S at Highway 71 (Stop Controlled)													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay				72.8						N/A*			
v/c				1.03						N/A*			
LOS				F						F			
		1			High	way 10	S at De	nver St	reet	1	1	1	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay		87.7		77	.6	15.5	58.3 30.0			8.5	59	9.8	48.0
v/c	0.91			0.	66	0.78	0.79	0.	51	0.25	0.	99	0.99
LOS	F			E	-	В	E	(	2	Α		E	D
					Hig	hway 1	0S at Hi	ighway	10				
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	80.0							0	.9		0.3		3.3
v/c	0.45							0.	38		0.52		0.52
LOS	E					A		4		Α		А	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay		51.1		186.5		10.1	177.8	20.2		13.7	12	0.7	130.0
v/c		0.16		1.	24	0.29	1.22	2 0.74		0.01	1.	17	1.24
LOS		D			-	В	F	F C		В		F	F
					Hig	hway 1	10 at Hi	ghway	71				
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	28.9	21.6	4.5	32.7	14.0	2.2	23	.9	0.0	13	3.1	3.7	17.9
v/c	0.19	0.70	0.18	0.35	0.23	0.12	0.6	59	0.02	0.	19	0.20	0.70
LOS	С	С	Α	С	В	A	C	;	Α	E	3	A	В
					Hig	jhway 1	10 at Hi	ghway	96				
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay				24.0			12.8						
v/c				0.03			0.21						
LOS				С			В						
<sup>1</sup> Reported overall delay represents weighted average of all movements.													
<sup>2</sup> Repor	ted v/c	represe	ents wor	rst mov	ement.								

## Table C-4: Intersection Operations – 2040 AM Peak

Highway 10S at Highway 71 (Stop Controlled)													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay				24.8						N/A*			
v/c				0.84						N/A*			
LOS				С						F			
					High	way 10	S at De	enver S	Street				
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay		117.5		93	93.5		21.1	62	2.5	64.7	36	5.9	54.7
v/c	1.02			0.	79	0.74	0.63	1.	00	0.80	0.	82	1.02
LOS	F			F		С	C C E E D					)	D
	Highway 10S at Highway 10												
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	85.2							8	.2	2.6	4.1		10.3
v/c	0.63							0.	80	0.02	0.50		0.80
LOS	F								4	А	A		А
Highway 10 at Main Street													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay		102.6		14	149.8		3.3	48	3.2	6.0	14	1.0	41.3
v/c		0.79		1.04		0.51	0.25	1.05		0.00	0.	70	1.05
LOS		F		F	-	В	А	D		A E		3	D
					Hig	hway 1	0 at Hi	ighway	71				
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	27.6	17.5	1.6	35.1	12.0	3.1	21.1		0.1	19	9.5	1.1	14.6
v/c	0.12	0.39	0.13	0.58	0.47	0.25	0.4	44	0.03	0.	37	0.12	0.58
LOS	С	В	Α	D	В	Α	(	2	В	E	3	А	В
					Hig	hway 1	0 at Hi	ighway	96				
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay				29.1			10.2		_				
v/c				0.11			0.24						
LOS				D			В						
<sup>1</sup> Reported overall delay represents weighted average of all movements.													
<sup>2</sup> Report	ed v/c i	represe	nts wor	st mov	ement.								

## Table C-5: Intersection Operations – 2040 PM Peak

## **TRAFFIC SAFETY ANALYSIS**

A safety analysis of the study area was conducted using 2012 through 2016 crash data, the latest five years available. Crash rates, computed as the number of crashes per million vehicle miles (mvm) traveled and per 100 mvm for fatal and serious injury (KA) crashes, are shown in Table C-6. Crash rates were reviewed and compared to statewide averages for similar facilities. Crash types are broken down in Figure C-3.

In the five-year study period, crash rates were below the statewide average for similar facilities. In the five years study period, KA crash rates were also below the statewide average.





There were a total of 239 crashes during the five-year study period, four of which were KA crashes. More than half of all crashes were rear-end type incidents. This type of crash is common along congested corridors where stop-and-go conditions are present. Three of the KA crashes involved turn movements across Highway 71. The other KA crash occurred on Highway 10 within Greenwood.

				Тс	otal Cras	hes	KA Crashes			
Route	Section and Log Miles	Year	Weighted ADT	Number of Crashes	Crash Rate (per MVM) <sup>1</sup>	Statewide Average (per MVM) <sup>1</sup>	Number of Crashes	Crash Rate (per 100 MVM) <sup>2</sup>	Statewide Average (per 100 MVM) <sup>2</sup>	
Highwoy		2012	14,600	12	0.79	4.46	0	0.00	11.43	
nignway 10S	Sect.	2013	14,600	44	2.89	3.93	0	0.00	12.47	
(Highway 71 to Highway 10)	0S LM 0.00 to 2.86	2014	13,700	34	2.38	4.18	0	0.00	11.53	
		2015	13,700	15	1.05	4.77	0	0.00	11.49	
		2016	14,600	19	1.25	4.99	0	0.00	11.72	
		All	14,200	124	1.67	4.47	0	0.00	11.73	
Highwoy		2012	3500	3	1.05	2.78	0	0.00	11.43	
nigriway 10	Sect. 0 LM 8.91 to 11.14	2013	3300	3	1.12	2.34	1	37.23	12.47	
(Highway		2014	3300	5	1.86	2.37	0	0.00	11.53	
71 to		2015	3400	7	2.53	2.75	0	0.00	11.49	
Highway 10S)		2016	3500	2	0.70	2.87	0	0.00	11.72	
100)		All	3,400	20	1.44	2.62	1	7.22	11.73	
Highway		2012	13,000	3	0.63	4.46	0	0.00	11.43	
10	0 1 1	2013	11,200	14	3.42	3.93	0	0.00	12.47	
(Highway 10S to	Sect. 1	2014	11,200	14	3.42	4.18	1	24.46	11.53	
east of	to 1.00	2015	12,200	7	1.57	4.77	0	0.00	11.49	
Highway		2016	12,200	7	1.57	4.99	0	0.00	11.72	
96)		All	12,000	45	2.05	4.47	1	4.56	11.73	
Highway		2012	12,000	6	0.78	2.22	0	0.00	6.95	
71	Sect.	2013	11,000	16	2.28	2.02	1	24.91	5.66	
(Highway	14	2014	11,000	16	2.28	2.02	0	0.00	6.62	
10S to	LM 0.00	2015	12,000	7	0.91	2.17	0	0.00	6.21	
Highway 10)	to 1.75	2016	12,000	4	0.52	2.48	1	22.83	6.37	
,		All	11,600	49	1.32	2.18	2	5.39	6.36	

Table C-6 - Crash Rates (2012 - 2016)

Crash rates reported in crashes per million vehicle miles (MVM)
 KA crash rates reported in crashes per 100 million vehicle miles (MVM)



Figure C-4 – Study Area Crashes

## **INFRASTRUCTURE CONDITIONS**

A review of the pavement and bridge conditions was conducted for Highways 10 and 10S. Tables C-7 through C-9 shows the results of the review. Much of the corridor is in poor condition and qualifies for preventative maintenance.

Segment	Length of Highway in Good Condition	Length of Highway in Fair Condition	Length of Highway in Poor Condition							
Highway 10 Highway 71 to east of Highway 96	0 miles (0%)	.1 mile (5%)	2 miles (95%)							
Note: Pavement assessment based on 2017 data.										

 Table C-7 - Pavement Condition Overview

## Table C-8 - Pavement Condition by Segment

Segment	Average IRI (in/mi)	Average Rutting (inches)	Pavement Condition
Highway 71 to Highway 10S	379 (Poor)	0.15 (Poor)	Poor
Highway 10S to east of Highway 96	258 (Poor)	0.23 (Poor)	Poor
Highway 71 to Highway 10	277 (Poor)	0.27 (Poor)	Poor
Note: Pavement assessment based on 2017	data.		

## Table C-9 - Bridge Condition

Bridge	Sufficiency Rating <sup>1</sup>	Qualified for Replacement?
Heartsill Creek (00332)	91.7	No
Hester Creek (00331)	91.7	No
Heartsill Creek (06166)	80.7	No
Adamson Creek (A0424)	84.3	No
Vache Grasse (A0425)	72.0	No
Heartsill Creek (M0300)	63.7	No
Hester Creek (A5194)	77.8	No
Hester Creek (B5194)	98.0	No
<sup>1</sup> Sufficiency ratings updated on 1/19/2018		

•

## **MULTIMODAL CONSIDERATIONS**

#### **Pedestrians and Bicycles**

Presently, sidewalks are only present on 0.2 miles of Highway 10 closest to the central business district. Sidewalks are not located anywhere on Highway 10S. No bicycle lanes are located within Greenwood. A multi-use trail currently also follows Adamson Creek, providing off-road pedestrian connectivity for pedestrians and bicyclists in neighborhoods near the central business district. The *City of Greenwood Master Pedestrian and Bicycle Facilities Plan* includes an extensive system of multi-use trails to serve most neighborhoods in Greenwood. This system is supplemented by on-road facilities in select locations. The plan calls for improved paved shoulders on Highways 10 and 10S throughout Greenwood with the exception of the CBD, where bike lanes are recommended.

Due to a present lack of network connectivity, pedestrians are required to utilize Highway 10 and 10S to travel to destinations in Greenwood. Since shoulders are missing in many places, these pedestrians must walk alongside traffic either in a travel lane or on the adjacent grass. When bridges without shoulders are encountered, pedestrians must then walk in the travel lanes. Several pedestrians were observed on Highway 10 during a recent field visit.

Similar to pedestrians, bicyclists in Greenwood must often travel alongside traffic on Highways 10 and 10S to reach other parts of the City. The existing multi-use trail provides excellent service to neighborhoods near the central business district, but connectivity to the eastern and western sides of Greenwood is very limited. This will be remedied as the trail system is completed.

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## <u>Transit</u>

There is presently no fixed-route transit service in Greenwood.

#### **Freight**

Freight volumes are very modest on Highways 10 and 10S through Greenwood. The route, however, does provide primary access to much of Sebastian and Logan Counties, as well as points east.

## **OTHER PLANNING CONSIDERATIONS**

#### Access Management

Currently, there is not an access management plan in effect on either Highway 10 or Highway 10S in Greenwood. Particular on Highway 10S, this has resulted in numerous closely spaced access points, a lack of connectivity between adjacent properties, and numerous unpredictable turning movements. The lack of access management has been a significant contributor to the previously identified operational and safety deficiencies. An access management plan should be a component of any improvement project in Greenwood. Access management ensures that future land development in the corridor

occurs in a strategic manner that does not cause undue operational or safety concerns, thus protecting the public investment in a project.

## **Emerging Technologies**

A number of emerging technological advances are expected to impact transportation in future years. Examples include connected vehicles (CV), which will communicate with other vehicles or surrounding infrastructure, and autonomous vehicles (AV), which will operate without human control. The advent of CV/AV technology will certainly have impacts on both roadway capacity and traffic demand. Other yet unidentified technologies will also appear, and will also impact the demands placed on transportation infrastructure.

While it is difficult to anticipate the implications of CV/AV technology, it is important to consider a range of possible impacts. Most research suggests that CV/AV technology will eventually result in higher roadway capacities, but that such increases will not materialize until most vehicles have CV/AV capabilities (likely years away). On the other hand, it is possible that emerging technologies will result in increasing traffic demand for numerous reasons. For example:

- Drivers may be willing to accept longer travel distances if they can accomplish other tasks simultaneously.
- Populations that do not currently drive, such as children and some elderly people, will be able to travel on their own.
- Vehicles may run errands with no occupants.
- An individual vehicle may be shared by multiple people, resulting in empty trips to travel between users.

For these reasons, it should not be assumed that the advent of CV/AV technology will improve operational performance in the near future.

It is important to monitor the development of emerging technologies and to consider new developments in the design of any future projects in the Highway 10 corridor. For example, special infrastructure elements may be required to maximize the efficiency of CV technology. Also, it is possible that more people purchase their transportation via a rideshare service as opposed to through vehicle ownership. This could have unintended consequences, such as a desire to pick-up drop off passengers on the roadside, necessitating additional design elements.

## PURPOSE AND NEED SUMMARY

Below is a summary of the identified needs for the subject corridor.

- High delays are currently experienced are a result of a lack of system connectivity in eastern Greenwood. In particular, only one route is provided across Adamson Creek, leading to high volumes that exceed the roadway's capacity. Furthermore, the lack of transportation redundancy places the entire transportation system at risk in the event of either a short term disruption (such as an incident) or a long term disruption (such as roadway failures).
- Currently, significant intersection delays occur only at the Main Street intersection. This is caused by the aforementioned lack of system connectivity. Volumes are also expected to exceed capacity at the Highway 10S intersection with Highway 71 in the future.
- The safety performance of Highways 10 and 10S are better than similar facilities across the state.

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## ATTACHMENT D ANALYSIS OF ALTERNATIVES REPORT

As a result of the demonstrated purpose and need, a bypass alternative was developed. Both this and the no-build alternative are considered in this document.

## **DESCRIPTION OF ALTERNATIVES**

The alternatives under consideration in this study are discussed below:

#### **No-Build Alternative**

Under the No-Build Alternative, no capital improvements would be made to Highways 10 or 10S in Greenwood. The operational and safety performance of the route would not be impacted, and traffic operations would continue to deteriorate over time. However, this alternative has no cost other than that of continued maintenance.

#### **Bypass Alternative**

Under the Bypass Alternative, Highway 10 would be relocated to a four-lane divided route on new location between Highway 96 and Coker Street. This new location route would include a median and partial control of access. Highway 10 would also be improved to include four through lanes between Coker Street and Highway 71. Main Street could also be extended south as a city street to intersect the relocated Highway 10. This alternative is illustrated in Figure D-1 and D-2

The total cost of this alternative is estimated at \$26.3 million (in 2017 dollars), including right-of-way acquisition (ROW), utility relocation, preliminary engineering (PE), and construction engineering (CENG). The estimated construction cost is \$20.6 million (in 2017 dollars). The breakdown of costs is provided in Table D-1



Figure D-1 – Bypass Alternative



Figure D-2 – New Location Bypass

Location	Construction Costs	Total Costs
New Location (Coker Street to Highway 96)	\$11.4 million	\$14.1 million
Improve Existing (Highway 71 to Coker Street)	\$9.2 million	\$12.2 million

## Table D-1 – Bypass Alternative Costs (in 2017 dollars)

## SYSTEM CONNECTIVITY

As discussed in the Purpose and Need, the bypass alternative would allow for better system connectivity and relief the bottleneck point at Adamson Creek. As reported in Table D-2, travel times across Greenwood would be reduced by about two minutes. Just as importantly, the construction of a new bypass route would provide a second route across Addison Creek, resulting in large improvements to system resiliency in southeastern Sebastian County.

	Travel Time Per Vehicle (min)											
		2017		2040								
	No Build Bypass Difference No Build Bypass Di											
AM	8.2	5.9	2.3	8.6	6.7	1.9						
PM	7.3	5.4	1.9	7.8	5.6	2.2						
Time I AM W	Time represent shortest travel times between Highway 71/10S and Highway 96 AM Westbound travel time: PM Eastbound travel time											

Table D-2 – Travel Times Through Greenwood

Under the bypass alternative, through traffic on Highway 10 would be required to make one turn at the Highway 96 intersection. Although not desirable, most traffic is local and would quickly become accustomed to such a maneuver. This is no different from what is required to follow Highway 10 through Greenwood now.

## **TRAFFIC OPERATIONS ANALYSIS**

Traffic operations for signalized intersections on Highways 10 and 10S were considered under both the No-Build Alternative and under the Bypass Alternative. The operational performance under the No-Build Alternative is identical to those reported in Appendix C. The operational performance under the Bypass Alternative is reported in Tables D-3 through D-6. In 2040, all signalized intersections would be expected to operate at level or service (LOS) D or better, and volume-to-capacity (v/c) ratios for all movements are expected to remain below 1.00.

To consider the potential impact of increased development in eastern Greenwood as a result of improved accessibility, a sensitivity analysis was performed. To do this, the percentage of through traffic on the new location facility was increased by 10 percent. Even with the increased traffic, the new location bypass would be expected to meet operational standards.

## **TRAFFIC SAFETY ANALYSIS**

As discussed in Appendix C, the safety performance of Highways 10 and 10S is better than that of similar facilities in Arkansas. That said, the Bypass Alternative provides opportunities for further improvement in safety performance. Highway 10 would be relocated onto a facility with partial control of access, where turning movements would be consolidated at well-defined locations and turning bays would be provided.

Highway 10S at Highway 71 (Stop Controlled)													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay				24.0						35.2			
v/c				0.59						0.02			
LOS				С						E			
					High	way 10	S at De	enver S	treet				
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay		45.4		41	.8	12.3	15.1	20	).0	838	21	1.6	23.7
v/c		0.75		0.	0.46		0.28	0.	18	0.08	0.	41	0.75
LOS	D			[	)	В	В	E	3	Α	l	В	С
	Highway 10S at Highway 10												
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	43.5							1	.0		1.7		4.4
v/c	0.29							0.	18		0.17		0.29
LOS	D							A			Α		А
	Highway 10 at Main Street												
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay		21.2		51	.2	4.5	10.9	11	.2	12.0	8	.7	18.7
v/c	0.06			0.	81	0.2	0.33	0.	39	0.01	0.	43	0.81
LOS		С		]	)	А	В	E	3	В		4	В
					Hig	hway 1	0 at Hi	ghway	71				
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	31.9	21.7	4.9	33.5	11.6	2.6	20.7	21.4	0	18.0	17.1	4.8	14.5
v/c	0.15	0.54	0.26	0.39	0.14	0.08	0.35	0.46	0.01	0.1	0.09	0.64	0.64
LOS	С	С	А	С	В	А	С	С	Α	В	В	А	В
		1			Highwa	iy 10 al	South	Coker	Street			11	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	22.9	22	2.8		6.2		17.5	9	.9		29.5		20.9
v/c	0.03	0.	01		0.19		0.59	0.	12		0.72		0.72
LOS	С	(	2		Α		В	ł	4		С		С
		1			Hig	hway 1	0 at Hi	ghway	96		1		
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	31	.6	9.1	28.0	40.9	0.3	8.2	24	1.7	7.1	9.7		13.9
v/c	0.	43	0.28	0.03	0.54	0.18	0.24	0.	62	0.58	0.56		0.62
LOS	(	2	A	С	D	А	А	(	C	Α		4	В
<sup>1</sup> Reported <sup>2</sup> Reported	overall de	elay repre sents wor	sents weig st movem	ghted ave ent.	erage of a	ll moveme	nts.						

## Table D-3 – Intersection Operations – 2017 AM Peak (With Bypass)

Highway 10S at Highway 71 (Stop Controlled)														
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>	
Delay				10.2						26.6				
v/c				0.23						0.07				
LOS				В						D				
					High	way 10	S at De	enver S	treet					
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>	
Delay		38.9		44	1.8	11.7	13.7	22	2.9	8.2	20	).6	22.6	
v/c		0.70		0.	0.53		0.30	0.4	41	0.18	0.	53	0.7	
LOS	D			[	D		В	(	2	Α	(	C	С	
	Highway 10S at Highway 10													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>	
Delay	45.5							1.	.8	3.2	3.6		6.5	
v/c	0.43							0.3	30	0.01	0.23		0.43	
LOS	D							ŀ	4	Α	Α		А	
	Highway 10 at Main Street													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>	
Delay		33.6		48	3.3	9.6	4.7	6.4		8.0	4	.8	12.1	
v/c	0.37			0.	62	0.39	0.14	0.4	43	0.00	0.	39	0.62	
LOS		С		[	)	А	А	ŀ	4	Α	I	4	В	
	Highway 10 at Highway 71													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>	
Delay	42.1	35.5	1.9	30.8	8.2	1.9	32.4	27.9	0.1	42.1	35.5	4.3	23.2	
v/c	0.16	0.59	0.15	0.86	0.29	0.17	0.31	0.16	0.02	0.13	0.59	0.24	0.86	
LOS	D	D	А	D	Α	Α	С	С	Α	D	D	А	В	
	1	1			lighwa	ay 10 at	South	Coker	Street		1			
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>	
Delay	14.5	14	1.3		3.5		23.1	20	).2		30.6		19.8	
v/c	0.01	0.	01		0.24		0.5	0.3	37		0.55		0.55	
LOS	В	E	3		Α		С	(	2		С		В	
	Highway 10 at Highway 96													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>	
Delay	12	2.3	25.1	21.1	45.3	0.1	9.1	16	o.6	5.6	13.9		16.4	
v/c	0.	35	0.73	0.06	0.54	0.09	0.28	0.33		0.19	0.37		0.73	
LOS	E	3	С	С	D	Α	A	E	3	Α	E	3	В	
<sup>1</sup> Reported	overall d	elay repre	esents wei	ghted ave	erage of a	III moveme	ents.							

## Table D-4 – Intersection Operations – 2017 PM Peak (With Bypass)

	Highway 10S at Highway 71 (Stop Controlled)												
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay				120.8						N/A*			
v/c				1.10						N/A*			
LOS				F						F			
		1			Highv	vay 105	S at Dei	nver St	reet		1		
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay		57.3		48.0		12.6	19	23	.6	8.3	22	2.9	27.5
v/c		0.85		0.5	0.56		0.42	0.2	25	0.11	0.	55	0.85
LOS	E			D	)	В	В	(	)	А	(	2	С
	Highway 10S at Highway 10												
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	50.4							0.	.5		2.2		5.0
v/c	0.37							0.2	23		0.23		0.37
LOS	D							A	4		A		A
	NBL	NBI	NBR	SBL	SBI	SBR	EBL	FRI	EBR	WBL	WBI	WBR	Overall <sup>1,2</sup>
Delay	24.2			67	.3	6.2	18.7	14		18.0	30	).1 - ·	30.1
V/C	0.08			0.9	92	0.23	0.62	0.5	52	0.01	0.	76	0.92
LOS		С		E		A	В	E	3	В	(	;	С
	ND	NDT	NDD		Hig	nway 1	0 at Hig	ghway	/1		WDT		0 1110
<b>.</b>	NBL	NRI	NRK	SBL	SBI	SBK	EBL	FRI	EBK	WBL	WRI	WBR	Overall <sup>1,2</sup>
Delay	34.5	31.2	5.6	36.3	16.0	4.0	21.0	20.9	0.0	1/./	16.6	24.1	23.2
V/C	0.18	0.78	0.32	0.43	0.21	0.11	0.41	0.48	0.01	0.12	0.10	0.91	0.91
LUS	C	C	A	<u> </u>	В	A	B	B	A	В	В	C	C
	NDI	NDT	NDD		IIGNWA	y IU at	SOUT					W/DD	Ovorall <sup>12</sup>
Dolay	20 1			JDL		JDK			בDK כ	WDL	20 4	WDR	
Delay	0.04	25	01		7.5		24.5	0. 0.1	1/		0 70		0.70
	0.00	0.	<b>`</b>		Δ		0.7	U.	14		0.79 D		0.19
203	U		5		Hia	$n_{\rm Way} 1$	) at Hid	hway (	96		U		U
	NBL	NBT	NBR	SBL	SBT	SBR	FBL	FBT	FBR_	WBI	WBT	WBR	Overall <sup>1,2</sup>
Delay	люс 4	5.6	43	30.6	47.9	0.4	13.1	45	9	40.4	2/	1.9	29.9
vlc	1	50	0.35	0.03	0.64	0.4	0.38		85	0.87	0.77		0.87
105	0.50 0.35		A	C.	D.04	A	B	۰.c	)	D.07	0.	2	C.
<sup>1</sup> Reported	l overall d	lelay repre	esents wei	ghted aver	age of all	movemer	nts.						

## Table D-5 – Intersection Operations – 2040 AM Peak (With Bypass)

<sup>2</sup>Reported v/c represents worst movement.

Highway 10S at Highway 71 (Stop Controlled)													
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay				12.3						35.8			
v/c				0.35						0.12			
LOS				В						E			
					High	way 10	S at De	enver S	treet				
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay		46.1		45	i.1	10.9	21.4	28	.9	12.9	36	5.2	29.6
v/c		0.79		0.	59	0.64	0.52	0.5	58	0.30	0.	78	0.79
LOS		D		[	)	В	С	(	)	В	]	)	С
	1	1			High	nway 1(	DS at H	lighway	y 10		1	1	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	46.1							2.	.2	1.0	2.0		6.1
v/c	0.49							0.3	39	0.01	0.29		0.49
LOS	D							F	4	А	Α		А
	1	1			Hig	hway 1	0 at M	ain Stre	eet			1	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay		34.3		54	.0	8.7	1.0	7.	.4	13.0	14	1.3	15.8
v/c		0.44		0.	72	0.42	0.21	0.!	57	0.00	0.	52	0.72
LOS		С		[	)	А	А	F	4	В	E	3	В
	1	1			Hig	hway 1	0 at Hi	ghway	71			1	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	44.1	38.4	1.1	41.5	9.7	2.0	46.6	30.1	0.2	35.6	39.3	7.6	25.9
v/c	0.17	0.69	0.19	0.89	0.38	0.21	0.56	0.22	0.03	0.45	0.65	0.32	0.89
LOS	D	D	Α	D	Α	Α	D	С	А	D	D	A	С
	1	1			Highwa	ay 10 at	South	Coker	Street		1		
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	17.1	16	o.8		4.3		22.1	18	.2		40.9		22.2
v/c	0.02	0.	02		0.23		0.59	0.4	42		0.61		0.61
LOS	В	E	3		Α		С	E	3		D		С
	1	1			Hig	hway 1	0 at Hi	ghway	96			1	
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall <sup>1,2</sup>
Delay	33	8.7	9.5	20.5	26.2	0.2	9.4	17	.7	9.0	22	2.9	16.1
v/c	0.	56	0.66	0.08	0.42	0.12	0.41	0.4	48	0.29	0.	55	0.66
LOS	(	2	А	С	С	А	А	E	3	А	(	C	В
<sup>1</sup> Reported	overall d	elay repre	sents wei	ghted ave	rage of al	ll moveme	nts.						

## Table D-6 – Intersection Operations – 2040 PM Peak (With Bypass)

<sup>2</sup>Reported v/c represents worst movement.

## **OTHER CONSIDERATIONS**

#### Access Management

If the Bypass Alternative is constructed, an access management plan should be developed for all of Highway 10 between Highway 96 and Highway 71 to ensure the safe performance of the improved route into the future. New location facilities provide an excellent opportunity for access management because future developments can be designed to take access in accordance with the plan.

#### **Emerging Technologies**

Due to the rapidly changing nature of the field, firm design recommendations have not be made pertaining to emerging technologies. The state of the practice should be reviewed at the time of design and construction to determine appropriate design and maintenance elements.

## CONCLUSIONS

In response to the identified deficiencies in system connectivity and traffic operations, a bypass alternative was developed. The bypass is consistent with the Greenwood Master Street Plan with the vision set forth in *Greenwood Bypass Study* (2007). The bypass alternative was shown to improve both system connectivity and traffic operations in Greenwood. Furthermore, the new route would be expected to result in modest safety improvements. The estimated cost of this bypass alternative is \$26.3 million (in 2017 dollars), including \$20.6 million in construction costs.

No funding has been identified for any of the improvements in this study. Due to the high costs associated with roadway improvements, cost sharing with local jurisdictions should be explored. At a minimum, possible removal of highways from the State Highway System should be considered.



GREENWOOD BYPASS STUDY UPDATE

CITY OF GREENWOOD SEBASTIAN COUNTY

# Appendix B

**Public Involvement Synopsis** 

## PUBLIC INVOLVEMENT SYNOPSIS

## Job 040762 Greenwood Bypass P.E. Sebastian County Thursday, April 21, 2022

An in-person Public Involvement (PI) meeting for the proposed project to improve Hwy. 10 in the City of Greenwood was held on Thursday, April 21, 2022. Information about the project was available on the ARDOT website from April 21 through May 6, 2022. Efforts to involve the public, including minority groups, in the meeting included:

- Display advertisement placed in the *Southwest Times Record* on Thursday, April 14 and on Sunday, April 17, 2022
- Public Service Announcement ran on La Raza 95.7 FM from Monday, April 18 through Thursday, April 21, 2022
- Letters mailed to public officials on April 14, 2022
- Letters mailed to minority leaders on April 14, 2022
- Flyers mailed to citizens in the project area

The following information and links were available on the website:

- Public meeting notice
- Introductory video presentation
- Project location map
- Design plans
- Online comment form
- Interactive project map
- Frequently asked questions with answers

Copies of the public meeting notice, project location map, and comment form are attached.

Table 1 summarizes PI meeting participation.

TABLE 1	
Public Participation	Totals
In-person meeting attendees (including ARDOT staff)	126
Number of website viewers (English/Spanish)	522/55
In-person comment forms received	28
Online comment forms received	6
Mailed comment forms received	9
Emailed comment forms received	1
Number of website viewers (English/Spanish)	522/55
Total comments received	44

ARDOT staff reviewed and evaluated all comments. The summary of comments below reflects commenters' perception or opinion and staff interpretations. Some of the comments were combined and/or paraphrased to simplify this synopsis.

Table 2 summarizes responses received during the PI comment period.

TABLE 2	
Survey Results	Totals
Feel proposed project is needed	25
Feel proposed project is not needed	4
Feel proposed project would have beneficial impacts	17
Feel proposed project would have adverse impacts	12
Had suggestions to better serve the needs of the community	24

Job 040762 – Public Involvement Synopsis April 21, 2022 Page 3 of 4

The following summarizes comments regarding need for and/or benefits of the proposed project:

- Facilitate growth, including additional retail/commercial space and tax revenue; bring further capital investments and large companies into the area, increase property values
- Main Street extension will increase access to downtown businesses
- Improve safety and alleviate traffic congestion
- Compatible with the I-49 master plan

The following summarizes comments regarding adverse impacts of the proposed project:

- Will take residential and commercial property and structures (including homes), lateral lines, trees (including fruit trees), and driveways
- Speeding will increase between Hwy. 71 and Coker Street
- Noise levels would increase
- Roadway would be too close to residences

Suggestions for how the proposed project could better serve the needs of the community include:

- Lighted walkways could be tied into existing city trails, benefiting the trail system and allowing alternate transportation methods to key areas of the city; lighting conduit runs should be included and keep walking trail intact at Main St. intersection
- Provide a roundabout at the intersection of S. Coker St. near the nursing home
- Provide trailhead access to trail and sidewalk circulation plans, including connecting to the City Lake trails; consider a trail and waterway access point where the bridge crosses Vasche Grasse Creek and streetscaping with trees in support of Tree City USA designation
- Coordinate traffic lights at Kings Mountain-Mt. Harmony intersection and provide traffic lights at the new flow to improve traffic flow, particularly on school mornings; coordinate all traffic lights
- Provide a traffic light or roundabout at new Hwy. 10 and Coker St. intersection
- Include affected landowners in the decision-making process and help them realize benefits of improved traffic flow
- Do not take church property

Job 040762 – Public Involvement Synopsis April 21, 2022 Page 4 of 4

- Prioritize constructing 10 spur from downtown to Hwy. 71
- Shift alignment southward to avoid taking property and homes
- Extend the five lane highway 3 miles further east to help traffic traveling to Hwy. 10 and avoid bottlenecks at Hwy. 96
- Provide a roundabout at Town Square
- Remove the merge lane from bypass to Coker Str. Heading north
- A Main St. exit/entrance would be very helpful
- Move the Hwy. 10 and Coker St. intersection northward to increase safety for nursing home and townhouse residents
- Should use Fort Chaffee property and tie into I-49 and Massard
- Widen Mt. Harmony Road to the school to prevent blockages during school mornings/afternoons

Attachments: Public Meeting Notice Blank Comment Form Project Location Exhibit

DN:MP:sw



## PUBLIC INVOLVEMENT MEETING NOTICE

Hwy. 10 – Hwy. 96 (Greenwood Bypass) (Hwy. 10) Hwy. 71 – Coker St. (Widening) (Greenwood) (Hwy. 10)

Job 040861 Job 040862

# You're Invited!

- What: The Arkansas Department of Transportation (ARDOT) will conduct a Public Involvement meeting to discuss the proposed improvements to Hwy. 10 in the City of Greenwood (Sebastian County).
- When: Thursday, April 21, 2022 4:00 p.m.- 7:00 p.m.
- Where: Greenwood First Baptist Church (Recreation Outreach Center) 19 North Adair Street Greenwood, AR 72936

Link to Project Information: http://www.ardot.gov/publicmeetings Comment form availability until 4:30 p.m. Thursday, April 21, 2022 – Friday, May 6, 2022

For further assistance, contact Karla Sims: Phone: (501) 569-2000 or e-mail: karla.sims@ardot.gov

#### **Special Accommodations:**

Anyone needing project informa. on or special accommodations under the Americans with Disabilities Act (ADA) is encouraged to write to Ruby Jordan-Johnson, P.O. Box 2261, Little Rock, AR 72203-2261, call (501)569-2379,fax (501)569-2009 or email <u>environmentalpimeetings@ardot.gov</u>. Hearing or speech impaired, please contact the Arkansas Relay System at (Voice/TTY 711). Requests should be made at least four days prior to the public meeting.

#### Notice of Nondiscrimination

The Arkansas Department of Transportation (ARDOT) complies with all civil rights provisions of federal statutes and related authorities that prohibit discrimination in programs and activities receiving federal financial assistance.

Therefore, the Department does not discriminate on the basis of race, sex, color, age, national origin, religion (not applicable as a protected group under the Federal Motor Carrier Safety Administration Title VI Program), disability, Limited English Proficiency (LEP), or low-income status in the admission, access to and treatment in the Department's programs and activities, as well as the Department's hiring or employment practices. Complaints of alleged discrimination and inquiries regarding the Department's nondiscrimination policies may be directed to Joanna P. McFadden EEO/DBE Officer (ADA/504/Title VI Coordinator), P. 0. Box 2261, Little Rock, AR 72203, (501) 569-2298, (Voice/TTY 711), or the following email address: joanna.mcfadden@ardot.gov

Free language assistance for Limited English Proficient individuals is available upon request.. This notice is available from the ADA/504/Title VI Coordinator in large print, on audio tape and in Braille.

ARKANSAS DEPARTMENT OF TRANSPORTATION (ARDO	T)
PUBLIC OFFICIALS COMMENT FORM	

ARDOT JOB 040762 GREENWOOD BYPASS (HWY. 10) SEBASTIAN COUNTY

#### LOCATION: GREENWOOD FIRST BAPTIST CHURCH (RECREATION OUTREACH CENTER) 19 NORTH ADAIR STREET GREENWOOD, AR 72936 2:00PM THURSDAY, APRIL 21, 2022

Make your comments on this form and mail it by 4:30 p.m. on Friday, May 6, 2022 to: Arkansas Department of Transportation, Environmental Division, P.O. Box 2261, Little Rock, AR, 72203-2261. Email: <u>environmentalpimeetings@ardot.gov</u>.

Yes	No

Do you feel there is a need for the proposed improvements to Hwy. 10 in the City of Greenwood (Sebastian County)? Comment (optional)

Do you feel that the proposed project will have any impacts

$(\Box$	Beneficial	or 🗌	Adverse)	on	your	property	and/or	community
(eco	nomic, env	ironme	ntal, social,	etc.	)? Ple	ase expla	in	

Do you have a suggestion that would make this proposed project better serve the needs of the community?

Does your home or property offer any limitations to the project, such as septic systems, that the Department needs to consider in its design?

(Continue on Back)

Yes	No	Do you know of any historical sites, family cemeteries, or archaeological sites in the project area? Please note and discuss with ARDOT staff.
		Do you know of any environmental constraints, such as endangered species, hazardous waste sites, existing or former landfills, or parks and public lands in the vicinity of the project? Please note and discuss with ARDOT staff.
It is of you ar provid Name: Addres	ten nec re a pr e inforr : ss:	essary for the ARDOT to contact property owners along potential routes. If operty owner along or adjacent to the route under consideration, please nation below. Thank you(Please Print)Phone: ()
E-mail Please	 : e make	additional comments here
		For additional information, please visit our website at

https://www.ardot.gov/publicmeetings





<b>ARKANSAS DEPARTMENT OF TRANSPORTATION (ARDOT)</b>
CITIZEN COMMENT FORM

ARDOT JOB 040762 GREENWOOD BYPASS (HWY. 10) SEBASTIAN COUNTY

LOCATION: GREENWOOD FIRST BAPTIST CHURCH (RECREATION OUTREACH CENTER) 19 NORTH ADAIR STREET GREENWOOD, AR 72936 4:00 - 7:00PM THURSDAY, APRIL 21, 2022

Make your comments on this form and mail it by 4:30 p.m. on Friday, May 6, 2022 to: Arkansas Department of Transportation, Environmental Division, P.O. Box 2261, Little Rock, AR, 72203-2261. Email: <u>environmentalpimeetings@ardot.gov</u>.

Yes	No

Do you feel there is a need for the proposed improvement to Hwy. 10 in the City of Greenwood (Sebastian County)? Comment (optional)

Do you feel that the proposed project will have any impacts

$(\Box$	Beneficial	or 🗌	Adverse)	on	your	property	and/or	community
(eco	nomic, env	ironmer	ntal, social,	etc.	)? Ple	ase expla	in	

Do you have a suggestion that would make this proposed project better serve the needs of the community?

Does your home or property offer any limitations to the project, such as septic systems, that the Department needs to consider in its design?

(Continue on Back)

Yes	No	Do you know of any historical sites, family cemeteries, sites in the project area? Please note and discuss with	or archaeological ARDOT staff
		Do you know of any environmental constraints, suc species, hazardous waste sites, existing or former land public lands in the vicinity of the project? Please note ARDOT staff.	h as endangered dfills, or parks and and discuss with
It is of you ar provid Name: Addres	ten nec re a pro e inforn : ss:	essary for the ARDOT to contact property owners along operty owner along or adjacent to the route under con nation below. Thank you.	potential routes. If sideration, please ( <i>Please Print</i> ) 
E-mail	 		
Please	e make	additional comments here	

https://www.ardot.gov/publicmeetings





Job Job 040862 Highway 71 - Coker Street (Widening) (Greenwood) Sebastian County



Preliminary Subject to Revision

71

End Job 040862 Begin Job 040861

Begin Job 040762 Begin Job 040862

71

Job Job 040861 Highway 10 - Highway 96 (Greenwood Bypass) Sebastian County



Preliminary Subject to Revision



10

Job 040861 Job 040862

Feet 0 500 1,000

ARDOT - Environmental GIS - Dudley Map: April 11, 2022 Phase III Virtual Public Involvement Exhibit

# Appendix C

# **Conceptual Stage Relocation Study**

## Conceptual Stage Relocation Study, Inventory, and Cost Estimate

The Arkansas Department of Transportation



Job Number 040762 Greenwood Bypass P.E. Sebastian County

Prepared for the Environmental Division By the Relocation Section, Right of Way Division

Finalized on January 5, 2022


ARKANSAS DEPARTMENT OF TRANSPORTATION ARDOT.gov | IDriveArkansas.com | Lorie H. Tudor, P.E., Director

10324 Interstate 30 | P.O. Box 2261 | Little Rock, AR 72203-2261 | Phone: 501.569.2000

## **INTEROFFICE MEMORANDUM**

#### January 7, 2022

**TO:** John Fleming, Division Head, Environmental Division

- **FROM:** Kevin T. White, Division Head, Right of Way Division  $\mathcal{KTW}$
- SUBJECT: JOB 040762 GREENWOOD BYPASS P.E. ROUTE 00 SECTION 00 SEBASTIAN COUNTY CONCEPTUAL STAGE RELOCATION STATEMENT

#### **GENERAL STATEMENT OF RELOCATION PROCEDURE**

Persons displaced as a direct result of acquisition for the proposed project will be eligible for relocation assistance in accordance with Public Law 91-646, the Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970, as amended (The Uniform Act). The Relocation Program provides advisory assistance and payments to minimize the adverse impact and hardship of displacement upon such persons. No lawful occupant shall be required to move without receiving a minimum of 90 days advance written notice. All displaced persons; residential, business, farm, nonprofit organization, and personal property relocatees are eligible for reimbursement for actual reasonable moving costs.

It is the Department's Policy that adequate replacement housing will be made available, built if necessary, before any person is required to move from their dwelling. All replacement housing must be fair housing and offered to all affected persons regardless of race, color, religion, sex or national origin. Construction of the project will not begin until decent, safe and sanitary replacement housing is in place and offered to all affected persons.

There are two basic types of residential relocation payments: (1) Replacement Housing payments and (2) Moving Expense payments. Replacement Housing payments are made to qualified owners and tenants. An owner may receive a payment of up to \$31,000.00 for the increased cost of a comparable replacement dwelling. The amount of this payment is determined by a study of the housing market. Owners may also be eligible for payments to compensate them for the increased interest cost for a new mortgage and the incidental expenses incurred in connection with the purchase of a replacement dwelling. A tenant may receive a rental subsidy payment of up to \$7,200.00. Tenants may elect to receive a down payment rather than a rental subsidy to enable them to purchase a replacement dwelling. Replacement housing payments are made in addition to moving expense payments.

Businesses, farms and nonprofit organizations are eligible for reestablishment payments, not to exceed \$25,000.00. Reestablishment expense payments are made in addition to moving expense payments. A business, farm or nonprofit organization may be eligible for a fixed payment in lieu of the moving costs and reestablishment costs if relocation cannot be accomplished without a substantial loss of existing patronage. The fixed payment will be computed in accordance with the Uniform Relocation Act and cannot exceed \$40,000.00.

If the displacee is not satisfied with the amounts offered as relocation payments, they will be provided a form to assist in filing a formal appeal. A hearing will be arranged at a time and place convenient for the displacee, and the facts of the case will be promptly and carefully reviewed.

Relocation services will be provided until all persons are relocated or their relocation eligibility expires. The Relocation Office will have listings of available replacement housing and commercial properties. Information is also maintained concerning other Federal and State Programs offering assistance to displaced persons.

\_\_\_\_\_

Based on preliminary construction plans, aerial photographs, and an on-site project review, it is estimated that the subject project could cause the following displacements and costs:

Proposed Project:

1	Residential Owner	\$	40,000.00
1	Residential Tenant	\$	15,000.00
1	Business	\$	40,000.00
1	Landlord Business	\$	25,000.00
2	Personal Properties	\$	5,000.00
	Services	<u>\$</u>	22,500.00
	Total	\$	147.500.00

The general characteristics of the displacees to be relocated are listed on the Conceptual Stage Inventory Record forms in the back of this report. The general characteristics have been determined by a visual inspection of the potential displacement locations by Relocation Coordinators. The Relocation Coordinators utilize area demographic data, visual inspections, publicly available information, past experiences and knowledge in making this determination.

An available housing inventory has been compiled and it indicates there are at least nineteen comparable replacement dwellings available for sale and eighteen comparable replacement dwellings available for rent within a reasonable proximity of the project area. At least seventeen developed commercial properties and fourteen vacant land commercial properties are currently for sale in the project area. There are at least five commercial properties for lease. A breakdown of the available properties is as follows:

Residential	<u>Number Of</u>
(For Sale)	<u>Units</u>
\$ 0.00 - 50.000	0
50,001 - 100,000	0
100,001 - 150,000	7
150,001 – 200,000	7
200,001 - 300,000	2
300,001 and up	3
Total	19
Residential	
(Monthly Rent)	
\$ 0.00 - 500.00	0
501.00 - 600.00	0
601.00 - 700.00	3
701.00 - 800.00	3
801.00 - 900.00	0
901.00 - 1,000.00	4
1,001.00 and up	8
Total	18
Commercial Properties	
(For Sale)	
\$ 0 - 100,000	0
100,001 - 200,000	2
200,001 - 300,000	3
300,001 - 400,000	0
400,001 - 500,000	0
500,001 and up	2
Total	7
Commercial Land	
(For Sale)	
\$ 0 - 100,000	2
100,001 - 200,000	8
200,001 - 300,000	2
	U
400,001 - 500,000	2
	<u> </u>
lotal	10

Commercial Properties	
(For Lease)	
\$ 0 - 1,000	1
1,001 - 2,000	2
2,001 - 3,000	0
3,001 and up	2
Total	5

This is a highway project that involves widening Hwy. 10 from Hwy. 71 to Coker Street, in Greenwood, AR, and constructing new location for the Greenwood Bypass from Coker St. to Hwy. 96, then widening a portion of the Hwy. 10 Spur. The units contained in the housing inventory are in Sebastian County. The dwellings and number of dwellings are comparable and adequate to provide replacement housing for the families displaced on the project. The housing market should not be detrimentally affected and there should be no problems with insufficient housing at this time. In the event housing cannot be found or can be found but not within the displacees' economic means at the time of displacement, Section 206 of Public Law 91-646 (Housing of Last Resort) will be utilized to its fullest and practical extent.

The replacement property inventory was compiled from data obtained from real estate companies, web sites, and local newspapers for the subject area. The dwellings contained in the inventory have been determined to be comparable and decent, safe and sanitary. The locations of the comparable dwellings are not less desirable in regard to public utilities and public and commercial facilities, are reasonably accessible to the displacees' places of employment, adequate to accommodate the displacees, and in neighborhoods which are not subject to unreasonable adverse environmental factors. It has also been determined that the available housing is within the financial means of the displacees and is fair housing open to all persons regardless of race, color, sex, religion or national origin consistent with the requirements of 49 CFR, Subpart A, Section 24.2 and Title VIII of the Civil Rights Act of 1968.

A commercial property inventory indicates there are at least seven developed properties and 14 undeveloped properties available for sale, and at least five commercial properties available for lease in the subject area at this time. The businesses displaced on the project may not be able to relocate in the immediate area of their displacement resulting in termination of the operation. However, in order to assist the displaced businesses and nonprofit organizations in relocating, the State will explore all possible sources of funding or other resources that may be available to businesses and nonprofit organizations. Sources that will be considered include: State and Local entities, the Department of Housing and Urban Development, the Economic Development Commission, the Small Business Administration and other Federal Agencies. Emphasis will be given in providing relocation advisory services to the businesses and nonprofit organizations. Appropriate measures will be taken to ensure that each entity displaced is fully aware of their benefits, entitlements, courses of action that are open to it, and any special provisions designed to encourage businesses and nonprofit organizations to relocate within the same community.

It is not anticipated that there will be any low-income, minorities or disabled persons displaced, However, it is estimated that there will be one elderly residential person displaced by the project. All displacees will be offered relocation assistance under provisions in the applicable FHWA regulations. At the time of displacement another inventory of available housing in the subject area will be obtained and an analysis of the market made to ensure that there are dwellings adequate to meet the needs of all displacees. Also, special relocation advisory services and assistance will be administered commensurate with displacees' needs, when necessary. Examples of these include, but are not limited to, Housing of Last Resort as previously mentioned and consultation with local officials, social and federal agencies and community groups.

There are no other identified unusual conditions involved with this project.

#### ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT CONCEPTUAL STAGE RELOCATION INVENTORY Job No. <u>040762</u> Job Name <u>HWY 10 - HWY 96 (GREENWOOD BYPASS)</u> Date of Inventory 11-16-2021

				Disabled	Min a vita a	<b>F</b> Idealar	1	Employees
Type Relocation	Number	Residential Property Values or Rental Rates	Large Family	Person	Ninority	Housebolds	Low income	(Range)
	Turnber	T Ciliai T Cales	Tiouscholus	Tiouscholus	Tiouscholus	Tiouscholus	Tiouscholus	(italige)
Residential Owners	1	\$100,000 - \$150,000	0	0	0	0	0	
Residential Tenants	1	\$700 - \$900	0	0	0	1	0	
Businesses	1							1-5
Landlord Businesses	1							
Nonprofit Organizations	0							
Personal Properties	2							
Totals	6	N/A	0	0	0	1	0	

### Appendix D

### Community Impacts and Environmental Justice Evaluation

### Social, Environmental Justice, Community Impacts and Economics Technical Memorandum

A socioeconomic, environmental justice, and community impacts discipline describes the existing conditions in the project study area and evaluates potential impacts with or without the proposed project.

#### Social

The geographic area considered for analysis of existing social conditions and impacts consists of the City of Greenwood. Greenwood is a city located in western Arkansas, just south of Fort Smith in Sebastian County, with a population of 9,516 people. The purpose of this project is to widen Highway 10 from Hwy. 71 to Coker Street, and to construct a new location for the Greenwood Bypass from Coker Street to Hwy. 96, which will include widening a portion of the Hwy. 10 Spur.

#### • What is Environmental Justice and how do we deal with it?

Environmental Justice refers to social equity in bearing the burden of adverse environmental impacts. In the past, minorities and low-income populations have experienced disproportionate impacts caused by construction of transportation projects. In response to this concern, an Executive Order was issued by President Bill Clinton in 1994. Among other things, it directed that:

"Each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

-Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 1994.

Projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. The environmental justice evaluation determines whether low-income or minority populations would suffer disproportionately high and adverse effects of an action. Low income is defined based on the Department of Health and Human Services (DHHS) 2022 poverty guidelines, which is \$27,750 for a family of four (4). Data gathered from the U.S. Census American Community Survey (2020) found that 12.7 percent of the population of the City of Greenwood live below the poverty level. The median household income in the city of Greenwood stands at \$57,078 which is higher than the Poverty guidelines published by the DHHS.

The Federal Highway Administration defines Minority as a person who is:

- Black (having origins in any of the black racial groups of Africa);
- Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race);
- Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or
- American Indian and Alaskan Native (having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition);
- Native Hawaiian and Other Pacific Islander (having origins in any of the original peoples of Hawaii, Guam, Samoa or Pacific Islands).

# • Would the project have unavoidable adverse effects on Environmental Justice/Title VI populations that could not be mitigated?

The preferred alignment follows along the existing Highway 10, passing through areas that are primarily business and residential properties. The portion of the project on new location passes through residential and forested areas.

This alignment will not sever any subdivisions and will not disrupt community services; however, the project will pose some property impacts. Based on the above discussion and analysis (U.S. Census Bureau and field observations), the proposed project will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of E.O. 12898 and FHWA Order 6640.23. No further EJ analysis is required.

# • Community character and how community service facilities will be affected during construction?

The study area encompasses mostly residential, business, and a forested area, with high residential housing and high community service retail establishments. Businesses that are located within the proposed project area on Hwy. 10 and South Coker Street:

- Pink Bud Nursing Home for the Golden Years,
- Preschool Extraordinaire Childcare Facility,
- VanHearron, Inc.,
- El Palenque Mexican Restaurant,
- Faith based religious institutions,
- Apartments and Duplexes, and
- Stewart Drugs Pharmacy.

Businesses located within the proposed project area on Hwy. 10 and Hwy. 96:

- South County Animal Hospital,
- Alliance Motors Auto Dealership,
- U-Haul Dealer, and
- Real Food Catering and meal prep company.

The project will create benefits such as improved commuter, truck, and local accessibility for businesses, commercial and residential usage, unimpeded traffic flow, and improved safety for motorists. Recreational users and emergency service providers would also benefit from the enhanced circulation and accessibility throughout the project area.

Constructions delays, dust, noise and exhaust fumes from equipment would temporarily affect residences and businesses along the alignment. Access to homes and businesses would be maintained during construction.

## • What measures are proposed to minimize or avoid effects to social and economic resources?

The right of way acquisition necessary for the proposed widening project will be minimized as much as possible. The opportunity for businesses to relocate within the vicinity of the project area is an option. The Department's design engineers will work closely with residents and business owners regarding driveway configurations and other specific property concerns. Property acquisition will be completed in accordance with the federal Uniform Relocation and Real Property Acquisition Policies Act of 1970.

## • Would the project have unavoidable adverse effects on Environmental Justice/Title VI populations that could not be mitigated?

Approximately one (1) household is considered elderly, and zero (0) individuals are considered minority, or not of the white population the City of Greenwood. The percentage of minority residents in the county as a whole is substantially less than the percentage of minority residents in the City.

The data gathered from the U.S. Census and field observations indicate the minimal presence of EJ/Title VI populations in the project area. While some impacts will be borne by those populations, the level of impacts would not be disproportionately high. Based on this information, the study area is not considered a minority-predominant community. Further steps to minimize the impacts will be considered during the final design phase.

#### **Public Involvement**

#### • How has the public been involved?

Public interaction is essential to involve all populations in the study area to assist in making transportation decisions. Allowing the public early and on-going interaction allows them the opportunity to be a part of the transportation decision-making process.

An in-person public Involvement meeting was conducted on April 21, 2022 and was well attended. There were one hundred and twenty-six (126) in-person attendees and five hundred seventy-seven (577) visitors to the website. The proposed project has generated a wide range comments and suggestions. The majority of the comments received indicated that there is a need to widen Highway 10 from Hwy. 71 to Coker Street, and to construct a new location for the Greenwood Bypass from Coker Street to Hwy. 96, which will include widening a portion of the Hwy. 10 Spur.

## Appendix E

## **Important Farmland Conversion Form**

PART I (To be completed by Federal Agency)	Job 040762	3. Date o	of Land Evaluation	Stant ( of	Stanut 1 of		
1. Name of Project		5. Feder	al Agency Involved				
2. Type of Project		6. Count	ty and State				
PART II /To be completed by NRCSI		1. Date F	Request Received by	NRCS 2. Per	son Completing Form		
7 Page the constant restation where a state state state		-		4. Act	es Irrigated   Average	Farm Size	
<ol> <li>Does the compor contain prime, unique statewide or k (if no, the FPPA does not apply - Do not complete add</li> </ol>	itional parts of this for	n). Y	res 🗆 🗤 🖸	1 1000			
5. Major Crop(s)	6. Farmable Lar	nd in Govern	iment Jurisdiction	7. Ame	unt of Farmland As Dr	efined in FPP	
and the second sec	Apres:		*	Ao		*	
8. Name Of Land Evaluation System Used	9. Name of Loc	al Site Asset	ssment System	10. Da	te Land Evaluation Re	turned by NR	
the state of the second second second		1	Alternativ	ve Corridor Fo	Seament		
PART III (To be completed by Federal Agency)		-	Corridor A	Corridor B	Corridor C	Corridor	
A. Total Acres To Be Converted Directly	1					1	
B. Total Acres To Be Converted Indirectly, Or To Rec	elve Services						
C. Total Acres in Corridor							
PART IV (To be completed by NRCS) Land Eva	luation information	n					
A. Total Acres Prime And Unique Farmland					1		
B. Total Acres Statewide And Local Important Farmi:	and		1				
C. Percentage Of Farmland in County Or Local Gov	. Unit To Be Converte	d					
D. Percentage Of Farmland In Govt. Jurisdiction With	Same Or Higher Rela	tive Value					
value of Farmland to Be Serviced or Converted (Se PART VI (To be completed by Federal Agency) Co	ale of 0 - 100 Points wridor	Maximum					
Assessment Criteria (These criteria are explained	In 7 CFR 658.5(c))	Points	,				
1. Area in Nonurban Use		15					
2. Perimeter in Nonurban Use		10					
3. Percent of Comoor Being Farmed		20			-		
4. Protection Provided By State And Local Govern	iment	20			-		
5. Creation Of Nonfarmable Earnland	e	25					
7. Availability of Farm Support Services		5	51 I		-		
8. On-Farm investments		20					
9. Effects Of Conversion On Farm Support Servic	es .	25					
10. Compatibility With Existing Agricultural Use		10	-				
TOTAL CORRIDOR ASSESSMENT POINTS		160					
PART VII (To be completed by Federal Agency)							
Relative Value Of Farmland (From Part V)		100					
Total Corridor Assessment (From Part VI above or a assessment)	a local site	160					
TOTAL POINTS (Total of above 2 lines)		260			P	-	
1. Comidor Selected: 2. Total Acres of Converted by	3. Date Of S	Selection:	Site Assessment Use	te Assessment Used?			
				160			
C. Deserve Fox Delevition							

Signature of Person Completing this Part	DATE
Carlin annam	
NOTE: Complete a form for each segment with more than one Alternat	te Corridor

## Appendix F

## Draft Section 4(f) Evaluation

## DRAFT SECTION 4(F) *DE MINIMIS* IMPACT EVALUATION FOR PUBLIC PARKS, RECREATION LANDS, AND WILDLIFE AND WATERFOWL REFUGES

ARDOT Job 040762 FAP NHPP-0065(63) Greenwood Bypass P.E. Sebastian County



Greenwood Walking Trail City of Greenwood Department of Parks and Recreation

January 2023

Federal Highway Administration Arkansas Department of Transportation

#### What is Section 4(f)?

Section 4(f) is part of a law that was passed to protect public parks, recreation areas, wildlife/waterfowl refuges, and important historic sites from being harmed by transportation projects.

#### **Does Section 4(f) apply to the Greenwood Walking Trail?**

The Arkansas Department of Transportation (ARDOT) has proposed a project involving the Greenwood Walking Trail in the City of Greenwood (hereinafter "City"), Arkansas. The trail is city-owned and managed by the City's Parks and Recreation Department. An ARDOT-issued Special Permit currently allows the trail to use transportation right of way for passage under the Highway 10 bridge at Heartsill Creek. An easement agreement exists between the City and a private property owner for the section of the trail located south of the end of Main Street near the South Sebastian County Historical Sites area. Section 4(f) protections are applicable because the Greenwood Walking Trail is publicly accessible and managed and used for recreational purposes.

Certain types of Section 4(f) impacts can be recognized as "*de minimus*", which means relatively minor. The intent of this evaluation is to demonstrate that project impacts to the trail will be relatively minor and therefore meet the *de minimis* impact determination conditions shown in **Table 1**.

Table 1	
When Can <i>De Minimis</i> Impact Determinations Be Made For Section 4(f) Properties?	Does It Apply To This Project?
Did we specially design the project to protect the trail as much as possible? Did we use mitigation and enhancement where it was suitable?	Yes
Did the officials with authority have a chance to consider this information and agree that the project will not greatly harm the characteristics that make the trail important?	Yes
Did the public have an opportunity to review and comment on the effects of the project on the trail and the characteristics that make it important to them?	Yes

#### What is the proposed project?

ARDOT, in conjunction with the Federal Highway Administration and the City of Greenwood, is proposing Highway (Hwy.) 10 improvements to increase roadway capacity and connectivity. The improvements include adding travel and turn lanes, providing sidewalks and a shared-use path, replacing the Hwy 10 bridge over Heartsill Creek, and constructing a new connection between the south end of Main Street and the proposed new location roadway section. The project may require reconnections of the trail where it passes under the Hwy. 10 bridge over Heartsill Creek and installing a pedestrian crossing at the south end of Main Street.

#### Why is the Greenwood Walking Trail important?

The Greenwood Walking Trail is used for recreational walking and bicycling. It currently provides a semi-circular route around downtown Greenwood. The city plans to construct additional trail sections to ultimately provide a complete trail loop around downtown Greenwood and a spur to Lake Greenwood.

- Asphalt-paved trail (see **Figure 1**)
- South Sebastian County Historical Society Sites (See Figures 2 and 3)
- Heartsill Creek and undeveloped green space (see Figure 4)



Figure 1









#### Can we avoid the trail?

There are no feasible and prudent alternatives to replacing the existing Hwy. 10 bridge and constructing the connection to the new location section south of Main Street.

#### What will the project do to the trail?

As shown on **Figure 5**, the existing trail is within existing ARDOT right of way at the Hwy. 10 bridge. The trail will also need to cross the new location section at the south end of Main Street. The trail may need reconstruction work for the Hwy. 10 underpass. The trail will need a crosswalk and other pedestrian safety features at the south end of Main Street. It should be noted that the right of way at both of these locations will be transferred to the City upon project construction completion.



#### Figure 5

Impacts resulting from project construction would include:

#### Adverse Impacts

- The walking trail in the vicinity of the Hwy. 10 bridge and the south end of Main Street would be periodically and temporarily closed during construction.
- Noise levels will temporarily increase during construction activities.

#### **Beneficial Impacts**

- Widening and otherwise improving the roadway will increase vehicular safety.
- A crosswalk and other pedestrian safety features will be provided at the trail crossing south of Main Street.

#### What did we do to reduce harm to the trail?

Coordination efforts between ARDOT and City officials began in April 2022. These efforts included consultation with the former and current Greenwood Parks and Recreation Department Directors to discuss potential Section 4(f) impacts. The following measures were included in the proposed project to reduce harm to the park:

- Trail impacts were minimized to the extent practicable and will only occur at the Hwy. 10 bridge and the south of Main Street construction locations.
- Trail amenities including the South Sebastian County Historical Society Sites buildings, monuments, and green spaces outside of the construction zones will remain accessible.
- Coordination with City officials about construction timing and temporary trail closures during construction will be ongoing.
- ARDOT Environmental Division personnel will assist the City with any trail reconnection activities requiring U.S. Army Corps and/or Arkansas Division of Environmental Quality involvement.
- The existing Special Permit for the Hwy. 10 trail underpass will be voided and right of way ownership will be transferred to the City.

#### How did we involve the public in this evaluation?

A Public Notice in the *Southwest Times Record* inviting the public to review and comment on the proposed project's effects on the Greenwood Walking Trail will be published. The Draft Section 4(f) Evaluation document will be available on the ARDOT website and at the Scott-Sebastian Regional public library during the 15-day public review and comment period. Any public comments received will be summarized and included in the Final Section 4(f) Evaluation document.

Following the public review and comment period, Greenwood officials will sign a concurrence statement agreeing that the proposed project will not have a harmful effect on the Greenwood Walking Trail.

#### What is the decision?

This evaluation concludes that the proposed project would not adversely affect the protected features, qualities, or activities that qualify the Greenwood Walking Trail for protection under Section 4(f), thus qualifying for a *de minimis* impact determination.

## Appendix G

**Noise Assessment Report** 

#### NOISE ASSESSMENT REPORT SCREENING LEVEL ANALYSIS ARDOT JOB 040762 P.E. 040861 HWY. 10. – HWY. 96 (GREENWOOD BYPASS) (S) 040862 HWY. 71 – COKER ST. (WIDENING) (GREENWOOD) (S)

#### Fundamentals of Sound and Noise

Noise is defined as unwanted or undesirable sound. The three basic parameters of how noise affects people are summarized below.

*Intensity* is determined by the level of sound expressed in units of decibels (dB). A 3 dB change in sound level is barely perceptible to most people in a common outdoor setting. However, a 5 dB increase presents a noticeable change and a 10 dB sound level increase is perceived to be twice as loud. Outdoor conversation at normal levels at a distance of 3 feet becomes difficult when the sound level exceeds the mid-60 dBA range.

*Frequency* is related to the tone or pitch of the sound. The amplification or attenuation of different frequencies of sound to correspond to the way the human ear "hears" these frequencies is referred to as "A-weighting." The A-weighted sound level in decibels is expressed as dBA.

*Variation* with time occurs because most noise fluctuates from moment to moment. A single level called the equivalent sound level (Leq) is used to compensate for this fluctuation. The Leq is a steady sound level containing the same amount of sound energy as the actual time-varying sound evaluated over the same time period. The Leq averages the louder and quieter moments, but gives more weight to the louder moments.

For highway noise assessment purposes, Leq is typically evaluated over the worst 1-hour period and written as Leq(h). The Leq(h) commonly describes sound levels at locations of outdoor human use and activity, and reflects the conditions that will typically produce the worst traffic noise (e.g., the highest traffic volumes traveling at the highest possible speeds).

#### Noise Impact and Abatement Criteria

Traffic noise impacts are determined by comparing design year Leq(h) values to: (1) a set of Noise Abatement Criteria (NAC) for different land use categories; and (2) existing Leq(h) values. A noise impact occurs when design year (future build) levels approach or exceed the NAC value or a substantial increase in noise occurs. A substantial increase is defined as 10 dBA or greater than existing noise levels. A *noise sensitive receptor* (receptor) is defined as a representative location of a noise sensitive area for various land uses. Most receptors associated with highway traffic noise analysis are categorized as NAC Activity Category B (residential) and C (e.g., recreational areas, schools, places of worship). Since the NAC threshold for Activity Categories B and C is 67 dBA, the approach level is 66 dBA.

Consideration of noise abatement measures is required when the NAC threshold is approached or exceeded, when a substantial increase is predicted, and/or when receptors are identified within the screening analysis threshold. Noise barriers (e.g., walls or berms) are the most common noise abatement measures.

#### Screening Level Noise Analysis

A screening level noise analysis (screening analysis) may be performed for projects that are unlikely to cause noise impacts and/or where noise abatement measures are likely to be unfeasible for acoustical or engineering reasons. Factors common to these types of projects include low traffic volumes, slower speeds, the presence of few or no receptors, and the need for roadway access points (e.g., driveways, intersections, Main Street scenarios, etc.).

Screening analysis results represent a worst-case scenario with higher sound levels than would be expected in detailed modeling, and may be used to determine the need for detailed analysis if noise impacts are likely and the placement of noise barriers is feasible. It may also be used for projects that lack receptors in order to assess impacts on undeveloped land.

The FHWA Traffic Noise Model Version 2.5 (TNM) software program is used to predict existing and future Leq(h) traffic noise levels. The TNM straight line model uses the existing year and design year traffic and roadway information. Receivers (discrete points modeled in the TNM program) are incrementally placed away from the roadway centerline to determine the distance to which impacts extend. The model assumes that the roadway and receivers were located at the same elevation with no intervening barriers such as topography or dense vegetation.

#### **Project Evaluation and Screening Analysis Results**

Activity Category B and C receptors were identified along the proposed project corridor. A screening analysis was therefore considered the appropriate first step for assessing potential noise impacts resulting from the proposed project.

TNM modeling was completed using the existing year 2023 and design year 2043 (future build) traffic and roadway information. Receivers were extended from the centerlines of the proposed project to distances correlating to approximately 66 dBA for existing and future conditions to determine potential impacts. The tenth value was used for rounding the decibel levels (e.g., 65.7 dBA reported as 66 dBA). The model calculation tables and input data are attached. The predicted noise impact and screening analysis distances are shown on the attached figures and summarized below.

It should be noted that this noise assessment report provides TNM modeling results for both Jobs 040861 and 040862, which comprise Job 040762. Jobs 040861 and 040862 were modeled separately due to differences in the proposed roadway widths.

As shown on the attached figures, approximately 11 receptors were predicted to experience noise impacts within distances ranging from 55 to 65 feet under future build conditions. However, approximately six of these were predicted to currently be experiencing impacts under existing conditions. Approximately 24 receptors were predicted to experience noise levels increases between 63 and 65 dBA and therefore within the screening level threshold.

Noise level increases between existing and proposed conditions were predicted to be minor in accordance with the ARDOT noise policy ( $\geq$  1 to 2 dBA). No substantial increases ( $\geq$  10 dBA) were predicted. Noise mitigation would not be feasible due to the presence of driveways and intersections along the proposed route. A detailed noise analysis is therefore not necessary for this project.

#### Planning Information for Local Officials

The ARDOT encourages local communities and developers to practice noise compatibility planning. As presented in **Table 1** and **Table 2**, noise level predictions for future build conditions were made at incremental distances. As previously described, Activity Category B and C exterior areas would be impacted within a distance of approximately 55 feet and 65 feet from the centerlines of the proposed project. These predictions do not represent noise levels at every location at a particular distance back from the roadway. Noise levels will vary with changes in terrain and other site conditions.

#### Table 1. Noise Levels for Compatibility Planning

Distance (ft)*	Leq(h), dBA**
55	66
100	63
150	61
200	58
300	55
500	49

\* Perpendicular to Job 040861 centerline

\*\* Rounded to tenth value

#### Table 2. Noise Levels for Compatibility Planning

Distance (ft)*	Leq(h), dBA**
65	66
100	64
125	63
175	61
200	60
300	56
500	49

\* Perpendicular to centerline Job 040862 centerline

\*\* Rounded to tenth value

**Table 3** presents the NAC. This information is included to inform local officials and planners of anticipated noise levels so that future development will be compatible. In compliance with federal guidelines, a copy of this screening analysis will be transmitted to the City of Greenwood and the Frontier Metropolitan Planning Organization for land use planning purposes.

Activity Category	L <sub>eq(h)</sub> dBA	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B*	67	Exterior	Residential properties.
C*	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structure, radio stations, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structure, radio studios, recording studios, schools, and television studios.
E*	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D, or F.
F			Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G			Undeveloped lands that are not permitted.

Table 3. Noise Abatement Criteria (NAC)

\* Includes undeveloped lands permitted for this activity category.

RESULTS: SOUND LEVELS							Job 04086	1				
ARDOT							9 Januarv	2023				
M.Pearson							TNM 2.5					
							Calculate	d with TNN	1 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		Job 040	0861									
RUN:		EXISTI	NG									
BARRIER DESIGN:		INPUT	HEIGHTS					Average (	pavement type	shall be use	d unless	
								a State hi	ghway agency	, substantiate	es the use	Э
ATMOSPHERICS:		68 deg	F, 50% RH					of a diffe	rent type with	, approval of F	HWA.	
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing Crit'n Sub'l Inc	Type Impact	Calculated LAeq1h	Noise Reduc	ction Goal	1
				Calculated	Crit'n	Calculated				Calculated		Calculated
												minus
		Î.	1				1					Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
25	1	1	0.0	68.8	66	68.8	10	Snd Lvl	68.8	0.0	l)	8 -8.0
45	2	1	0.0	65.9	66	65.9	10	)	65.9	0,0		8 -8.0
75	3	1	0.0	63.4	66	63.4	10	)	63.4	0.0		8 -8.0
100	4	1	0.0	62.0	66	62.0	) 10	)	62.0	0.0	1	8 -8.0
125	5	1	0.0	60.8	66	60.8	s 10	)	60.8	0.0	1	8 -8.0
150	6	1	0.0	59.3	66	59.3	s 10	)	59.3	0.0		8 -8.0
175	7	1	0.0	57.5	66	57.5	i 10		57.5	0.0		8 -8.0
200	9	1	0.0	56.0	66	56.0	10	)	56.0	0.0		8 -8.0
225	10	1	0.0	54.6	66	54.6	i 10	(	54.6	0.0		8 -8.0
250	11	1	0.0	53.5	66	53.5	i 10		53.5	0.0		8 -8,0
275	12	1	0.0	52.4	66	52.4	10	)	52.4	0.0		8 -8.0
300	13	1	0.0	51.4	66	51.4	10	)	51.4	0.0		8 -8.0
325	14	1	0.0	50.6	66	50.6	i 10	)	50.6	0.0	1	8 -8.0
350	15	1	0.0	49.8	66	49.8	10		49.8	0.0		8 -8.0
400	16	1	0.0	48.3	66	48.3	10	)	48.3	0.0		8 -8.0
500	17	1	0.0	46.0	66	46.0	10	)	46.0	0.0		8 -8.0
Dwelling Units		# DUs	Noise Red	duction								
			Min	Avg	Max							
			dB	dB	dB							
All Selected		16	0.0	0.0	0.0							
All Impacted		1	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

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Noise Assessment

RESULTS: SOUND LEVELS							Job 04086	1				
ARDOT							9 January	2023				
M.Pearson							TNM 2.5					
							Calculate	d with TNN	1 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		Job 04	0861									
RUN:		PROPO	SED									
BARRIER DESIGN:		INPUT	HEIGHTS					Average p	pavement type	shall be use	d unless	
								a State hi	ghway agency	substantiate	es the use	
ATMOSPHERICS:		68 deg	F, 50% RH					of a differ	ent type with	approval of F	HWA.	
Receiver								-				
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	1
		i		Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
		0					Sub'l Inc				1	minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
55	1	1	0.0	66.2	66	66.2	10	Snd Lvl	66.2	0.0		8 -8.0
75	2	: 1	0.0	64.6	66	64.6	10		64.6	0.0		8 -8.0
100	3	1	0.0	<mark>63.1</mark>	66	63.1	10		63.1	0.0	1	3 -8.0
125	4	1	0.0	62.0	66	62.0	10		62.0	0.0	1	-8.0
150	5	1	0.0	61.0	66	61.0	10		61_0	0.0	1	3 -8.0
175	6	i 1	0.0	60.1	66	60.1	10		60,1	0.0	1	3 -8.0
200	7	1	0.0	59.3	66	59.3	10		59.3	0.0	1	3 -8.0
225	9	1	0.0	58.6	66	58.6	i 10		58.6	0.0	1	3 -8.0
250	10	1	0.0	57.5	66	57.5	10		57.5	0.0	1 8	3 -8.0
275	11	1	0.0	56.3	66	56.3	10		56.3	0.0	1	3 -8.0
300	12	: 1	0,0	55.2	66	55.2	10		55.2	0.0	1	-8.0
400	13	1	0.0	51.6	66	51.6	10		51.6	0.0	1	3 -8.0
500	14	1	0.0	48.9	66	48.9	10		48.9	0.0		-8.0
Dwelling Units		# DUs	Noise Red	duction								
	10-00		Min	Avg	Max							
			dB	dB	dB							
All Selected		13	0.0	0.0	0.0							
All Impacted		1	0.0	0.0	0.0							
All that meet NR Goal		C	0.0	0.0	0.0							

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Noise Assessment

RESULTS: SOUND LEVELS			Job 040862	2								
₹DOT 2 November 2022												
M.Pearson		TNM 2.5										
							Calculate	d with TNN	1 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		Job 04	0862									
RUN:		EXISTI	NG									
BARRIER DESIGN:		INPUT	HEIGHTS					Average p	pavement type	e shall be use	d unless	i
								a State hi	ghway agency	y substantiate	es the us	e
ATMOSPHERICS:		68 deg	F, 50% RH					of a differ	ent type with	approval of F	HWA.	
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	ction	
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
25	1	1	0.0	69.4	66	69.4	10	Snd Lvl	69.4	0.0	)	8 -8.0
50	2	: 1	0.0	66.1	66	66.1	10	Snd Lvl	66.1	0.0	)	8 -8.0
75	3	1	0,0	64.2	66	64.2	2 10		64.2	2.0.0	)	8 -8.0
100	4	1	0.0	62.7	66	62.7	10	****	62.7	0.0	)	8 -8.0
125	5	1	0.0	60.5	66	60.5	10		60.5	i 0.0	)	8 -8.0
150	6	1	0.0	58.5	66	58.5	5 10		58,5	0.0	)	8 -8.0
175	7	1	0.0	56.8	66	56.8	10		56.8	0.0	)	8 -8.0
200	9	1	0.0	55.3	66	55.3	10		55.3	0.0	)	8 -8.0
225	10	1	0.0	54.1	66	54.1	10		54.1	0.0	)	8 -8.0
250	11	1	0.0	52.9	66	52.9	10		52.9	0.0	)	8 -8.0
275	12	1	0.0	51.9	66	51.9	10		51.9	0.0	)	8 -8.0
300	13	1	0.0	51.0	66	51.0	10		51.0	0.0	)	8 -8.0
325	14	. 1	0.0	50.2	66	50.2	2 10		50.2	0.0	)	8 -8.0
350	15	1	0.0	49.4	66	49.4	10		49.4	0.0		8 -8.0
400	16	1	0.0	48.1	66	48.1	10		48.1	0.0		8 -8.0
500	17	1	0.0	45.9	66	45.9	9 1C		45,9	0.0		8 -8,0
Dwelling Units		# DUs Noise Reduction Min Avg		Max								
			dB	dB	dB							
All Selected		16	0.0	0.0	0.0							
All Impacted		2	2 0.0	0.0	0.0							
All that meet NR Goal		C	0.0	0.0	0.0							

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Noise Assessment

RESULTS: SOUND LEVELS Job 040862															
ARDOT							10 Januar	y 2023							
M.Pearson							TNM 2.5								
							Calculated	d with TNN	1 2.5						
PRO JECT/CONTRACT:		Job 04(	1862												
RIIN		PROPC	SED												
BARRIER DESIGN		INPUT	HEIGHTS					Average r	pavement type	shall be use	d unless				
								a State hi	ahway agency	substantiate	es the use				
ATMOSPHERICS:		68 deg	F, 50% RH					of a differ	ent type with	approval of F	HWA.				
Receiver		_						-							
Name	No.	#DUs	Existing	No Barrier					With Barrier		-				
			LAeq1h	LAeq1h		Increase over	existing	Type Impact	Calculated	Noise Reduc	tion				
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc		LAeq1h	Calculated	Goal	Calculated minus Goal			
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB			
50	1	1	0.0	67.3	66	67.3	10	Snd Lvl	67.3	0.0	i i	8 -8.0			
65	2	1	0.0	66.0	66	66.0	10	Snd Lvl	66.0	0.0	i t	8 -8.0			
100	3	1	0.0	63,8	66	63.8	10		63.8	0.0	11	8 -8.0			
125	4	1	0.0	62.6	66	62.6	10		62.6	0.0	1	8 -8.0			
150	5	1	0.0	61.6	66	61.6	10		61.6	0.0	1	8 -8.0			
175	6	1	0.0	60.7	66	60.7	10		60.7	0.0	1 1	8 -8.0			
200	7	1	0.0	59.9	66	59.9	10		59.9	0.0	1	8 -8.0			
225	9	1	0.0	59.2	66	59.2	10		59.2	0.0		8 -8.0			
300	10	1	0.0	55.8	66	55.8	10		55.8	0.0		8 -8.0			
350	11	1	0.0	53.9	66	53.9	10		53.9	0.0		8 -8.0			
400	12	1	0.0	52.2	66	52.2	10		52.2	0.0		8 -8.0			
500	13	1	0.0	49.4	66	49.4	10		49.4	0.0		8 -8.0			
Dwelling Units		# DUs	Noise Red	duction	Max										
	1			Avg											
		L	UD		UD										
All Selected		12	0.0	0.0	0.0										
All Impacted		2	0.0	0.0	0.0										
All that meet NR Goal		0	0.0	0.0	0.0										

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#### NOISE DATA WORKSHEET

Job No: 040861												
Job Name: Hwy. 10-Hwy. 96 (Gree	nwood Bypa	ass)										
Roadway Reference: Hwy. 10_9	96			]								
County: Arkansas	]											
Design Year: 2043	]											
Year(s) To Be Modeled: 2023	2043	]										
Roadway Cross-Sections: 2 12' lanes 2 5' shoulder				total wid	th '= 34	]	Note:	DHV = (ADT)(K) DDHV = (ADT)(K)(D)				
	2023	EXISTING		SIT	E 1	]		K - Percen	t of ADT occ	uring in de	sign hour	
Operating Speed:		45				Kfactor	10%		onal Distribui	lion		
Traffic Data:		YEAR	ADT	%TRUCK	DHV	CARS	МТ	HT	CARS/2	MT/2	HT/2	
							10%	90%				
		0000	5 500	40/	550	0	0	0	0	0	0	
		2023	5,500	4%	550	528	2	20	264	1	10	

#### NOISE DATA WORKSHEET

Job No: 040861											
Job Name: Hwy. 10-Hwy. 96	(Greenwood Bypa	ass)									
Roadway Reference: Hwy	. 10_96			]							
County: Arkansas											
Design Year: 2	043										
Year(s) To Be Modeled: 2	023 2043	]									
Roadway Cross-Sections:				total wid	total width '= 58 Note: DHV = (ADT)(K) DDHV = (ADT)(K)(D)						
	2043	PROPOSE	)	SIT	E 1			K - Percen	it of ADT occ	uring in de	sign hour
								D - Directi	onal Distribut	ion	
Operating Speed:		45				Kfactor	10%				
Traffic Data:		YEAR	ADT	%TRUCK	DHV	CARS	МТ	НТ	CARS/2	MT/2	HT/2
							10%	90%			
						0	0	0	0	0	0
		2043	7,200	4%	720	691	3	26	346	1	13

#### NOISE DATA WORKSHEET

Job No: 040862											
Job Name: Hwy. 71-Coker St. (Wid	dening) (Gre	eenwood)									
Roadway Reference: Hwy. 10				]							
County: Arkansas											
Design Year: 2043											
Year(s) To Be Modeled: 2023	2043										
Roadway Cross-Sections:				total wid	lth '= 58	Note: DHV = $(ADT)(K)$					
	2043	PROPOSE	D			ן		K - Percen	t of ADT occ	uring in de	sign hour
						_		D - Directi	onal Distribut	ion	
Operating Speed:		45				Kfactor	9%				
Traffic Data:		YEAR	ADT	%TRUCK	DHV	CARS	МТ	НТ	CARS/2	MT/2	HT/2
		/		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	2		10%	90%	0/		
						0	0	0	0	0	0
		2043	10,000	3%	900	873	3	24	437	1	12










# Appendix G

## Noise Assessment Report

## NOISE ASSESSMENT REPORT SCREENING LEVEL ANALYSIS ARDOT JOB 040762 P.E. 040861 HWY. 10. – HWY. 96 (GREENWOOD BYPASS) (S) 040862 HWY. 71 – COKER ST. (WIDENING) (GREENWOOD) (S)

## Fundamentals of Sound and Noise

Noise is defined as unwanted or undesirable sound. The three basic parameters of how noise affects people are summarized below.

*Intensity* is determined by the level of sound expressed in units of decibels (dB). A 3 dB change in sound level is barely perceptible to most people in a common outdoor setting. However, a 5 dB increase presents a noticeable change and a 10 dB sound level increase is perceived to be twice as loud. Outdoor conversation at normal levels at a distance of 3 feet becomes difficult when the sound level exceeds the mid-60 dBA range.

*Frequency* is related to the tone or pitch of the sound. The amplification or attenuation of different frequencies of sound to correspond to the way the human ear "hears" these frequencies is referred to as "A-weighting." The A-weighted sound level in decibels is expressed as dBA.

*Variation* with time occurs because most noise fluctuates from moment to moment. A single level called the equivalent sound level (Leq) is used to compensate for this fluctuation. The Leq is a steady sound level containing the same amount of sound energy as the actual time-varying sound evaluated over the same time period. The Leq averages the louder and quieter moments, but gives more weight to the louder moments.

For highway noise assessment purposes, Leq is typically evaluated over the worst 1-hour period and written as Leq(h). The Leq(h) commonly describes sound levels at locations of outdoor human use and activity, and reflects the conditions that will typically produce the worst traffic noise (e.g., the highest traffic volumes traveling at the highest possible speeds).

## Noise Impact and Abatement Criteria

Traffic noise impacts are determined by comparing design year Leq(h) values to: (1) a set of Noise Abatement Criteria (NAC) for different land use categories; and (2) existing Leq(h) values. A noise impact occurs when design year (future build) levels approach or exceed the NAC value or a substantial increase in noise occurs. A substantial increase is defined as 10 dBA or greater than existing noise levels. A *noise sensitive receptor* (receptor) is defined as a representative location of a noise sensitive area for various land uses. Most receptors associated with highway traffic noise analysis are categorized as NAC Activity Category B (residential) and C (e.g., recreational areas, schools, places of worship). Since the NAC threshold for Activity Categories B and C is 67 dBA, the approach level is 66 dBA.

Consideration of noise abatement measures is required when the NAC threshold is approached or exceeded, when a substantial increase is predicted, and/or when receptors are identified within the screening analysis threshold. Noise barriers (e.g., walls or berms) are the most common noise abatement measures.

## Screening Level Noise Analysis

A screening level noise analysis (screening analysis) may be performed for projects that are unlikely to cause noise impacts and/or where noise abatement measures are likely to be unfeasible for acoustical or engineering reasons. Factors common to these types of projects include low traffic volumes, slower speeds, the presence of few or no receptors, and the need for roadway access points (e.g., driveways, intersections, Main Street scenarios, etc.).

Screening analysis results represent a worst-case scenario with higher sound levels than would be expected in detailed modeling, and may be used to determine the need for detailed analysis if noise impacts are likely and the placement of noise barriers is feasible. It may also be used for projects that lack receptors in order to assess impacts on undeveloped land.

The FHWA Traffic Noise Model Version 2.5 (TNM) software program is used to predict existing and future Leq(h) traffic noise levels. The TNM straight line model uses the existing year and design year traffic and roadway information. Receivers (discrete points modeled in the TNM program) are incrementally placed away from the roadway centerline to determine the distance to which impacts extend. The model assumes that the roadway and receivers were located at the same elevation with no intervening barriers such as topography or dense vegetation.

## **Project Evaluation and Screening Analysis Results**

Activity Category B and C receptors were identified along the proposed project corridor. A screening analysis was therefore considered the appropriate first step for assessing potential noise impacts resulting from the proposed project.

TNM modeling was completed using the existing year 2023 and design year 2043 (future build) traffic and roadway information. Receivers were extended from the centerlines of the proposed project to distances correlating to approximately 66 dBA for existing and future conditions to determine potential impacts. The tenth value was used for rounding the decibel levels (e.g., 65.7 dBA reported as 66 dBA). The model calculation tables and input data are attached. The predicted noise impact and screening analysis distances are shown on the attached figures and summarized below.

It should be noted that this noise assessment report provides TNM modeling results for both Jobs 040861 and 040862, which comprise Job 040762. Jobs 040861 and 040862 were modeled separately due to differences in the proposed roadway widths.

As shown on the attached figures, approximately 11 receptors were predicted to experience noise impacts within distances ranging from 55 to 65 feet under future build conditions. However, approximately six of these were predicted to currently be experiencing impacts under existing conditions. Approximately 24 receptors were predicted to experience noise levels increases between 63 and 65 dBA and therefore within the screening level threshold.

Noise level increases between existing and proposed conditions were predicted to be minor in accordance with the ARDOT noise policy ( $\geq$  1 to 2 dBA). No substantial increases ( $\geq$  10 dBA) were predicted. Noise mitigation would not be feasible due to the presence of driveways and intersections along the proposed route. A detailed noise analysis is therefore not necessary for this project.

## Planning Information for Local Officials

The ARDOT encourages local communities and developers to practice noise compatibility planning. As presented in **Table 1** and **Table 2**, noise level predictions for future build conditions were made at incremental distances. As previously described, Activity Category B and C exterior areas would be impacted within a distance of approximately 55 feet and 65 feet from the centerlines of the proposed project. These predictions do not represent noise levels at every location at a particular distance back from the roadway. Noise levels will vary with changes in terrain and other site conditions.

## Table 1. Noise Levels for Compatibility Planning

Distance (ft)*	Leq(h), dBA**
55	66
100	63
150	61
200	58
300	55
500	49

\* Perpendicular to Job 040861 centerline

\*\* Rounded to tenth value

## Table 2. Noise Levels for Compatibility Planning

Distance (ft)*	Leq(h), dBA**
65	66
100	64
125	63
175	61
200	60
300	56
500	49

\* Perpendicular to centerline Job 040862 centerline

\*\* Rounded to tenth value

**Table 3** presents the NAC. This information is included to inform local officials and planners of anticipated noise levels so that future development will be compatible. In compliance with federal guidelines, a copy of this screening analysis will be transmitted to the City of Greenwood and the Frontier Metropolitan Planning Organization for land use planning purposes.

Activity Category	L <sub>eq(h)</sub> dBA	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B*	67	Exterior	Residential properties.
C*	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structure, radio stations, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structure, radio studios, recording studios, schools, and television studios.
E*	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D, or F.
F			Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G			Undeveloped lands that are not permitted.

Table 3. Noise Abatement Criteria (NAC)

\* Includes undeveloped lands permitted for this activity category.

RESULTS: SOUND LEVELS							Job 04086	1				
ARDOT							9 Januarv	2023				
M.Pearson							TNM 2.5					
							Calculate	d with TNN	1 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		Job 040	0861									
RUN:		EXISTI	NG									
BARRIER DESIGN:		INPUT	HEIGHTS					Average (	pavement type	shall be use	d unless	
								a State hi	ghway agency	/ substantiate	es the use	•
ATMOSPHERICS:		68 deg	F, 50% RH					of a diffe	rent type with	approval of F	HWA.	
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	1
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l inc					minus
		Î.					1				· · · · · · · · · · · · · · · · · · ·	Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
25	1	1	0.0	68.8	66	68.8	10	Snd Lvl	68.8	0.0		8 -8.0
45	2	1	0.0	65.9	66	65.9	10	)	65.9	0,0		8 -8.0
75	3	1	0.0	63.4	66	63.4	10	)	63.4	0.0		8 -8.0
100	4	1	0.0	62.0	66	62.0	) 10	)	62.0	0.0		8 -8.0
125	5	1	0.0	60.8	66	60.8	s 10	)	60.8	0.0		8 -8.0
150	6	1	0.0	59.3	66	59.3	s 10	)	59.3	0.0		8 -8.0
175	7	1	0.0	57.5	66	57.5	i 10		57.5	0.0		8 -8.0
200	9	1	0.0	56.0	66	56.0	10	)	56.0	0.0		8 -8.0
225	10	1	0.0	54.6	66	54.6	i 10	(	54.6	0.0		8 -8.0
250	11	1	0.0	53.5	66	53.5	i 10		53.5	0.0		8 -8,0
275	12	1	0.0	52.4	66	52.4	10	)	52.4	0.0		8 -8.0
300	13	1	0.0	51.4	66	51.4	10	)	51.4	0.0		8 -8.0
325	14	1	0.0	50.6	66	50.6	i 10	)	50.6	0.0		8 -8.0
350	15	1	0.0	49.8	66	49.8	10	)	49.8	0.0		8 -8.0
400	16	1	0.0	48.3	66	48.3	10	)	48.3	0.0		8 -8.0
500	17	1	0.0	46.0	66	46.0	10	)	46.0	0.0		8 -8.0
Dwelling Units		# DUs	Noise Red	duction								
			Min	Avg	Max							
			dB	dB	dB							
All Selected		16	0.0	0.0	0.0							
All Impacted		1	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

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Noise Assessment

RESULTS: SOUND LEVELS							Job 04086	1				
ARDOT							9 Januarv	2023				
M.Pearson							TNM 2.5					
							Calculate	d with TNN	1 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		Job 04	0861									
RUN:		PROPO	SED									
BARRIER DESIGN:		INPUT	HEIGHTS					Average (	pavement type	shall be use	d unless	
								a State hi	ghway agency	substantiate	es the use	
ATMOSPHERICS:		68 deg	F, 50% RH					of a differ	rent type with	approval of F	HWA.	
Receiver								-				
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	ction	1
		1		Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
		0					Sub'l Inc					minus
											1	Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
55	1	1	0.0	<mark>66.2</mark>	66	66.2	2 10	Snd Lvl	66.2	0.0	)	B -8.0
75	2	: 1	0.0	64.6	66	64.6	5 1C		64.6	0.0	) (	8 -8.0
100	3	1	0.0	63.1	66	63.1	10		63.1	0.0	) (	8 -8.0
125	4	1	0.0	62.0	66	62.0	10		62.0	0.0	) (	8 -8.0
150	5	1	0.0	61.0	66	61.0	10		61.0	0.0	) (	8 -8.0
175	6	1	0.0	60.1	66	60.1	10		60.1	0.0	) (	8 -8.0
200	7	1	0.0	59.3	66	59.3	10		59.3	0.0	) (	-8.0
225	9	1	0.0	58,6	66	58.6	6 10		58.6	0.0	) (	8 -8.0
250	10	1	0.0	57.5	66	57.5	i 10		57.5	0.0	) (	8 -8.0
275	11	1	0.0	56.3	66	56.3	s 10		56.3	0.0	) (	8 -8.0
300	12	: 1	0,0	55.2	66	55.2	10		55.2	0.0	) (	8 -8.0
400	13	1	0.0	51.6	66	51.6	i 10		51.6	0.0		8 -8.0
500	14	. 1	0.0	48.9	66	48.9	10		48.9	0.0	)	8 -8.0
Dwelling Units		# DUs	Noise Red	duction								
			Min	Avg	Max							
			dB	dB	dB							
All Selected		13	0.0	0.0	0.0							
All Impacted		1	0.0	0.0	0.0							
All that meet NR Goal		C	0.0	0.0	0.0							

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Noise Assessment

RESULTS: SOUND LEVELS		Job 040862											
ARDOT							2 Novemb	oer 2022					
M.Pearson							TNM 2.5						
			Calculated with TNM 2.5										
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:		Job 04	0862										
RUN:		EXISTI	NG										
BARRIER DESIGN:		INPUT	HEIGHTS					Average p	pavement type	e shall be use	d unless	i	
								a State hi	ghway agency	y substantiate	es the us	e	
ATMOSPHERICS:		68 deg	F, 50% RH					of a differ	ent type with	approval of F	HWA.		
Receiver													
Name	No.	#DUs	Existing	No Barrier					With Barrier				
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated minus Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
25	1	1	0.0	69.4	66	69.4	10	Snd Lvl	69.4	0.0	1	8 -8.0	
50	2	: 1	0.0	66.1	66	66.1	10	Snd Lvl	66.1	0.0		8 -8.0	
75	3	1	0,0	64.2	66	64.2	2 10	)	64.2	2.0.0		8 -8.0	
100	4	1	0.0	62.7	66	62.7	10		62.7	0.0	1	8 -8.0	
125	5	1	0.0	60.5	66	60.5	5 10		60.5	i 0.0		8 -8.0	
150	6	1	0.0	58.5	66	58.5	5 10	(	58,5	0.0	1	8 -8.0	
175	7	1	0.0	56.8	66	56.8	3 10		56.8	0.0		8 -8.0	
200	9	1	0.0	55.3	66	55.3	3 10	)	55.3	0.0		8 -8.0	
225	10	1	0.0	54.1	66	54.1	10		54.1	0.0		8 -8.0	
250	11	1	0.0	52.9	66	52.9	10		52.9	0.0		8 -8.0	
275	12	1	0.0	51.9	66	51.9	10		51.9	0.0	1	8 -8.0	
300	13	1	0.0	51.0	66	51.0	10		51.0	0.0		8 -8.0	
325	14	. 1	0.0	50.2	66	50.2	2 10		50.2	0.0		8 -8.0	
350	15	1	0.0	49.4	66	49.4	10	)	49.4	0.0		8 -8,0	
400	16	1	0.0	48.1	66	48.1	10		48.1	0.0		8 -8.0	
500	17	1	0.0	45.9	66	45.9	9 1C	)	45,9	0.0	1	8 -8,0	
Dwelling Units		# DUs	Noise Ree Min	duction Avg	Max	-							
			dB	dB	dB								
All Selected		16	0.0	0.0	0.0	1							
All Impacted		2	2 0.0	0.0	0.0								
All that meet NR Goal		C	0.0	0.0	0.0								

G-8

1

Noise Assessment

RESULTS: SOUND LEVELS							Job 040862	2			_	
ARDOT							10 Januar	y 2023				
M.Pearson							TNM 2.5					
							Calculated	d with TNN	1 2.5			
PRO JECT/CONTRACT:		Job 04(	1862									
RIIN		PROPC	SED									
BARRIER DESIGN		INPUT	HEIGHTS					Average r	pavement type	shall be use	d unless	
								a State hi	ahway agency	substantiate	es the use	
ATMOSPHERICS:		68 deg	F, 50% RH					of a differ	ent type with	approval of F	HWA.	
Receiver								-				
Name	No.	#DUs	Existing	No Barrier					With Barrier		-	
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
50	1	1	0.0	67.3	66	67.3	10	Snd Lvl	67.3	0.0		8 -8.0
65	2	1	0.0	66.0	66	66.0	10	Snd Lvl	66.0	0.0		8 -8.0
100	3	1	0.0	63,8	66	63.8	10		63.8	0.0		8 -8.0
125	4	1	0.0	62.6	66	62.6	10		62.6	0.0	i	8 -8.0
150	5	1	0.0	61.6	66	61.6	10		61.6	0.0		8 -8.0
175	6	1	0.0	60.7	66	60.7	10		60.7	0.0		8 -8.0
200	7	1	0.0	59.9	66	59.9	10		59.9	0.0		8 -8.0
225	9	1	0.0	59.2	66	59.2	10		59.2	0.0		8 -8.0
300	10	1	0.0	55.8	66	55.8	10		55.8	0.0		8 -8.0
350	11	1	0.0	53.9	66	53.9	10		53.9	0.0		3 -8.0
400	12	1	0.0	52.2	66	52.2	10		52.2	0.0		8 -8.0
500	13	1	0.0	49.4	66	49.4	10		49.4	0.0		3 -8.0
Dwelling Units		# DUs	Noise Red	duction	Max							
	1			Avg								
			UD		UD							
All Selected		12	0.0	0.0	0.0							
All Impacted		2	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

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## NOISE DATA WORKSHEET

Job No: 040861											
Job Name: Hwy. 10-Hwy. 96 (Gree	nwood Bypa	ass)									
Roadway Reference: Hwy. 10_9	96			]							
County: Arkansas	]										
Design Year: 2043	]										
Year(s) To Be Modeled: 2023	2043	]									
Roadway Cross-Sections:	2 12' lane:	s 2 5' shoulde	er	total wid	th '= 34	]	Note:	DHV = (A DDHV = (	DT)(K) ADT)(K)(D)		
	2023	EXISTING		SIT	E 1	]		K - Percen	t of ADT occ	uring in de	sign hour
Operating Speed:		45				Kfactor	10%		onal Distribui	lion	
Traffic Data:		YEAR	ADT	%TRUCK	DHV	CARS	МТ	HT	CARS/2	MT/2	HT/2
							10%	90%			
		0000	5 500	40/	550	0	0	0	0	0	0
		2023	5,500	4%	550	528	2	20	264	1	10

## NOISE DATA WORKSHEET

Job No: 040861											
Job Name: Hwy. 10-Hwy. 96 (0	Greenwood Byp	ass)									
Roadway Reference: Hwy.	10_96			]							
County: Arkansas											
Design Year: 20	43										
Year(s) To Be Modeled: 20	23 2043										
Roadway Cross-Sections:				total wid	th '= 58	]	Note:	DHV = (A DDHV = (	DT)(K) ADT)(K)(D)		
	2043	PROPOSE	D	SIT	E 1			K - Percer	nt of ADT occ	uring in de	sign hour
								D - Directi	onal Distribut	ion	
Operating Speed:		45				Kfactor	10%				
Traffic Data:		YEAR	ADT	%TRUCK	DHV	CARS	МТ	НТ	CARS/2	MT/2	HT/2
				,			10%	90%			
						0	0	0	0	0	0
		2043	7,200	4%	720	691	3	26	346	1	13

## NOISE DATA WORKSHEET

Job No: 040862											
Job Name: Hwy. 71-Coker St. (Wid	dening) (Gre	eenwood)									
Roadway Reference: Hwy. 10				]							
County: Arkansas											
Design Year: 2043											
Year(s) To Be Modeled: 2023	2043										
Roadway Cross-Sections:				total wid	lth '= 58	]	Note:	DHV = (A	DT)(K)		
	2043	PROPOSE	)			ן		K - Percer	it of ADT occ	uring in de	sign hour
						_		D - Directi	onal Distribut	ion	
Operating Speed:		45				Kfactor	9%				
Traffic Data:		YEAR	ADT	%TRUCK	DHV	CARS	МТ	НТ	CARS/2	MT/2	HT/2
		/		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	2		10%	90%	•/		
						0	0	0	0	0	0
		2043	10,000	3%	900	873	3	24	437	1	12











# Appendix H

# **Visual Impact Assessment**



ARKANSAS DEPARTMENT OF TRANSPORTATION ARDOT.gov | IDriveArkansas.com | Lorie H. Tudor, P.E., Director 10324 Interstate 30 | P.O. Box 2261 | Little Rock, AR 72203-2261 | Phone: 501.569.2000

# **INTEROFFICE MEMORANDUM**

March 22, 2021

TO: Project File

- **FROM:** Katie Rose, Environmental Impact Analyst, Environmental Division
- SUBJECT: Job 040762 Greenwood Bypass P.E. Sebastian County Visual Impact Assessment Technical Memorandum

## **Purpose of this Memorandum**

The purpose of this Visual Impact Assessment (VIA) Memorandum (memo) is to evaluate potential visual impacts associated with the Highway (Hwy.) 10 widening project between Hwy. 71 and S. Coker St, and constructing a bypass on new location that will connect Hwy. 10 to Hwy. 96. The VIA was prepared using guidance outlined in the *Guidelines for the Visual Impact Assessment of Highway Projects* published by the Federal Highway Administration (FHWA) in January 2015.

## **Visual Impact Assessment**

The VIA Scoping Questionnaire was completed. As shown in Attachment 1, the response to each question typically has a value between 0 and 3 resulting in an overall score of 14. Consistent with FHWA guidelines, a score of 10 to 14 recommends the preparation of a brief visual impact assessment in memo format. This memo documents the recommended level of assessment.

Visual resource and VIA definitions for the concepts and terms used in the remainder of this memo are provided in Attachment 2. The visual impacts described are associated with Alternative 1; no impacts are anticipated under the No Action Alternative.

Job Number 040762 Visual Impact Assessment Page 2 of 4

Proposed project viewers are categorized as either neighbors or travelers. Neighbors include residents and business occupants. Travelers include users of the project corridor and adjacent roadways.

## **Existing Visual Character**

Alternative 1's project corridor extends approximately 2.8 miles from Hwy. 71 east to S. Coker St., and constructs a new bypass from S. Coker St. to Hwy. 96. It would involve widening existing Hwy. 10 from two 12' lanes with 8' paved shoulders, and a shared use path and sidewalks between Hwy. 71 and S. Coker St. The road will widen mostly on existing alignment and the bypass will be constructed on new location. There will be some intersection improvements where the new bypass, Hwy. 96, and Hwy. 10 intersect, some of which will be on new location.

The project study area is relatively flat. Elevations range from 593' to 482' above sea level, and the elevation loss is gradual. Long distance views are uncommon, and there are no particularly scenic views in the area. The existing Hwy. 10 from Hwy. 71 to S. Cocker St. is mostly straight, passing through a rural housing area with pastures and lightly forested area. As Hwy. 10 approaches the city of Greenwood homes, apartments, churches, and businesses become a more prominent view. The bypass will then begin on new location. Structures on the east side of S. Coker Rd. will be removed to build the new bypass section, but the area behind the structures is undeveloped. The area where the new bypass will be constructed is mostly pasture with patches of forest. There is also a large wetland area that will be drained, and approximately three streams that will be crossed with either bridged or box culverts.

The area where Hwy. 96 and Hwy. 10 intersect will be shifted onto new alignment to the north and a new bridge will be constructed. This area of Hwy. 10 is undeveloped, but businesses are located on either side of Hwy. 96. The area where the new bridge will be located is currently forested with a mixed deciduous trees.

## Permanent Impacts

The widening and realignment of the road and the addition of sidewalks and a shared use path will bring the road closer to existing homes and businesses, and remove some existing structures. This could be seen as an adverse visual impact for the affected residences, while increased visual exposure for businesses could be seen as beneficial.

Job Number 040762 Visual Impact Assessment Page 3 of 4

The relocations associated with this project will remove visual resources that were present before. However, the proposed roadway cross section and materials are consistent with the plans outlined in the Greenwood, Arkansas Master Street Plan which was approved in 1996. The area of the new location will require the draining of an existing wetland and will introduce a new visual characteristic where no current construction exists, however there are no project neighbors in this area. Visual resources uncommon in the area would not be introduced, and landforms would not be noticeably altered. The introduction of a grassy bermed area between the road and the new shared use path and sidewalks will enhance the corridor's appearance. Based on the factors described above, the visual resources of these facilities are predicted to be beneficial to the existing overall visual character of the corridor. Overall visual quality is therefore predicted to be enhanced for the majority of business neighbors and for travelers.

Based on predicted viewer exposure and sensitivity, permanent adverse impacts would be minor and localized for residents for whom exposure will increased. These residents are located along the western section of the Hwy. 10 corridor in the project area.

## **Temporary Impacts**

Project construction would result in the short-term presence of construction vehicles and equipment, grading and excavation, and vegetation clearing throughout the project area. The areas where construction and grading would remove existing natural vegetation would be viewable by travelers and site-specific neighbors. Grading and excavation activities and the presence of construction vehicles and equipment would result in a temporary change in the visual character of the project corridor. These activities would be short-term. Impacts in roadside cleared areas would be short/medium-term until new vegetation becomes established. These temporary visual impacts would be minor and not expected to result in an adverse response by typical viewers.

## Avoidance, Minimization and/or Mitigation Measures

Impacts to existing vegetation within the project area would be minimized through revegetation efforts as part of the process to ensure that biological resources are not adversely affected.

Planting the disturbed areas with native wildflowers could be a mitigation measure taken that would enhance the visual landscape of the area.

Job Number 040762 Visual Impact Assessment Page 4 of 4

## Attachments

- 1. VIA Scoping Questionnaire
- 2. VIA Definitions

## **Visual Impact Assessment (VIA) Scoping Questionnaire**

Project Name: Greenwood Bypass P.E. Location: Sebastian County

change (1)

Special Conditions/Notes: Conducted By: Katie Rose

## **Environmental Compatibility**

- 1. *Will the project result in a noticeable change in the physical characteristics of the existing environment?* (Consider all project components and construction impacts both permanent and temporary, including landform changes, structures, noise barriers, vegetation removal, railing, signage, and contractor activities.)
  - □ High level of permanent change (3)

□ Low level of permanent or temporary □



No Noticeable Change (0)

Moderate level of permanent change (2)

- 2. Will the project complement or contrast with the visual character desired by the community? (Evaluate the scale and extent of the project features compared to the surrounding scale of the community. Is the project likely to give an urban appearance to an existing rural or suburban community? Do you anticipate that the change will be viewed by the public as positive or negative? Research planning documents, or talk with local planners and community representatives to understand the type of visual environment local residents envision for their community.)
  - Low Compatibility (3)
     Moderate Compatibility (2)
  - □ High Compatibility (1)



3. What level of local concern is there for the types of project features (e.g., bridge structures, large excavations, sound barriers, or median planting removal) and construction impacts that are proposed? (Certain project improvements can be of special interest to local citizens, causing a heightened level of public concern, and requiring a more focused visual analysis.)

	High concern (3)	Moderate Concern (2)
$\checkmark$	Low concern (1)	Negligible Project Features (0)

- 4. Is it anticipated that to mitigate visual impacts, it may be necessary to develop extensive or novel mitigation strategies to avoid, minimize, or compensate for adverse impacts or will using conventional mitigation strategies, such as landscape or architectural treatment adequately *mitigate adverse visual impacts?* 
  - **Extensive Non-Conventional Mitigation** Likely (3)
  - Only Conventional Mitigation Likely (1)
- Some Non-Conventional Mitigation Likely (2)
- No Mitigation Likely (0)
- 5. Will this project, when seen collectively with other projects, result in an aggregate adverse change (cumulative impacts) in overall visual quality or character? (Identify any projects [both state and local] in the area that have been constructed in recent years and those currently planned for future construction. The window of time and the extent of area applicable to possible cumulative impacts should be based on a reasonable anticipation of the viewing public's perception.)
- Cumulative Impacts likely: 0-5 years (3) Cumulative Impacts unlikely (1)
- Cumulative Impacts likely: 6-10 years (2)

# **Viewer Sensitivity**

- 1. What is the potential that the project proposal may be controversial within the community, or opposed by any organized group? (This can be researched initially by talking with the state DOT and local agency management and staff familiar with the affected community's sentiments as evidenced by past projects and/or current information).
  - High Potential (3) Moderate Potential (2) Low Potential (1) No Potential (0)
- 2. How sensitive are potential viewer groups likely to be regarding visible changes proposed by the project? (Consider among other factors the number of viewers within the group, probable viewer expectations, activities, viewing duration, and orientation. The expected viewer sensitivity level may be scoped by applying professional judgment, and by soliciting information from other DOT staff, local agencies and community representatives familiar with the affected community's sentiments and demonstrated concerns.)

High Sensitivity (3) Moderate Sensitivity (2) Low Sensitivity (1)

- 3. To what degree does the project's aesthetic approach appear to be consistent with applicable laws, ordinances, regulations, policies, or standards?
  - Low Compatibility (3)
     Moderate Compatibility (2)
     High Compatibility (1)
- 4. Are permits going to be required by outside regulatory agencies (i.e., Federal, State, or local)? (Permit requirements can have an unintended consequence on the visual environment. Anticipated permits, as well as specific permit requirements which are defined by the permitter, may be determined by talking with the project environmental planner and project engineer. Note coordinate with the state DOT representative responsible for obtaining the permit prior to communicating directly with any permitting agency. Permits that may benefit from additional analysis include permits that may result in visible built features, such as infiltration basins or devices under a storm water permit or a retaining wall for wetland avoidance or permits for work in sensitive areas such as coastal development permits or on Federal lands, such as impacts to Wild and Scenic Rivers.)



- 5. Will the project sponsor or public benefit from a more detailed visual analysis in order to help reach consensus on a course of action to address potential visual impacts? (Consider the proposed project features, possible visual impacts, and probable mitigation recommendations.)
  - Yes (3) Maybe (2) No (1)

Total Project Score: <u>14</u>

## **Determining the Level of Visual Impact Assessment**

Total the scores of the answers to all ten questions on the Visual Impact Assessment Scoping Questionnaire. Use the total score from the questionnaire as an indicator of the appropriate level of VIA to perform for the project. Confirm that the level suggested by the checklist is consistent with the project teams' professional judgements. If there remains doubt about whether a VIA needs to be completed, it may be prudent to conduct an Abbreviated VIA. If there remains doubt about the level of the VIA, begin with the simpler VIA process. If visual impacts emerge as a more substantial concern than anticipated, the level of VIA documentation can always be increased.

The level of the VIA can initially be based on the following ranges of total scores:

#### □ Score 25-30

An *Expanded VIA* is probably necessary. It is recommended that it should be proceeded by a formal visual scoping study prior to beginning the VIA to alert the project team to potential highly adverse impacts and to develop new project alternatives to avoid those impacts. These technical studies will likely receive state-wide, even national, public review. Extensive use of visual simulations and a comprehensive public involvement program would be typical.

#### □ Score 20-24

A *Standard VIA* is recommended. This technical study will likely receive extensive local, perhaps state-wide, public review. It would typically include several visual simulations. It would also include a thorough examination of public planning and policy documents supplemented with a direct public engagement processes to determine visual preferences.

#### □ Score 15-19

An *Abbreviated VIA* would briefly describe project features, impacts and mitigation requirements. Visual simulations would be optimal. An Abbreviated VIA would receive little direct public interest beyond a summary of its findings in the project's environmental documents. Visual preferences would be based on observation and review of planning and policy documents by local jurisdictions.

## Score 10-14

A *VIA Memorandum* addressing minor visual issues that indicates the nature of the limited impacts and any necessary mitigation strategies that should be implemented would likely be sufficient along with an explanation of why no formal analysis is required.

#### **Score 6-9**

No noticeable physical changes to the environment are proposed and no further analysis is required. Print out a copy of this completed questionnaire for your project file to document that there is no effect. A *VIA Memorandum* may be used to document that there is no effect and to explain the approach used for the determination.

## Visual Impact Assessment Definitions

The FHWA guidelines recognize three types of visual resources:

- **Natural visual resources** include landforms and land cover such as trees, vegetation, and water.
- **Cultural visual resource**s include manmade elements such as roadways, embankments, bridges, and buildings
- **Project visual resources** include the existing highway's geometrics, structures, and fixtures and those that will be placed in the environment as part of the proposed project.

The overall composition of visual resources helps determine the **visual character** of a scene or landscape. For highway project assessment purposes, visual resources and character are considered from two perspectives:

- 1. The view of the project to the surrounding community (neighbors).
- 2. The view from the project to motorists (travelers).

Neighbors who can see a highway project and travelers who use it are defined as **viewers**.

Visual resource changes are assessed by considering the compatibility and/or contrast of the proposed projects with the visual character of existing environments. Viewer responses to these changes are predicted by considering both exposure and sensitivity.

**Viewer exposure** considers the physical limits of the views and the number and type of viewers. **Viewer sensitivity** considers the expectations of viewers based on existing environments and the extent to which various visual resources may be important to them.

The predicted viewer response to changes in the existing landscape are used to determine **visual quality** impacts. Potential impacts may be identified as neutral, adverse, or beneficial and described in the following terms:

- Extent Are the effects site-specific, local, or even regional?
- Duration Are the effects temporary or permanent, or short-term or longterm?
- Scale Are the effects negligible, minor, moderate, or major?

Potential impact durations are defined below.

- Short-term during construction.
- Short/medium-term 1 to 5 years while new vegetation becomes established after construction.
- Medium/long-term 5 to 15 years after construction when new vegetation would be effective mitigation.
- Long-term Over 15 years.

Potential impact scales are defined below.

Negligible: Changes would be non-detectable or, if detected, effects would be slight and local. Impacts would not require mitigation.

Minor: Changes would be noticeable, although the changes would be small and localized. Conventional mitigation measures may be necessary to reduce potential effects.

Moderate: Changes would be noticeable and have localized and potentially regional scale impacts; historical conditions would be altered. Conventional mitigation measures may be necessary to reduce potential effects.

Major: Changes would be noticeable and would have substantial consequences on a local and/or regional level. Mitigation measures to offset the effects would be required to reduce impacts, although long-term changes to the resource would be possible.

# Appendix I

## Water and Natural Resources

## Natural Environment and Surface Water Resources Technical Memorandum

The project corridor is located wholly within the Frog-Mulberry Watershed (HUC 11110201). A review of the project corridor identified two perennial streams, Hartsill Creek and Vache Grasse Creek, multiple unnamed ephemeral tributaries, multiple small wetlands, and one 5.17 -acre pond within the project area. Vegetation impacts along creeks will be minimized as much as practicable to protect riparian buffers. Storage of petroleum and other chemical products will be prohibited near any waterway.

Additionally, there are no designated Wild and Scenic Rivers, Nationwide Rivers Inventory streams, public drinking water supplies or karst within the project area.

#### No Action Alternative

The No Action Alternative would not impact any wetlands, streams, springs or groundwater resources.

#### **Build Alternative**

Impacts to Waters of the U.S. were calculated within the proposed ROW and construction limits. Job 040861 will impact two perennial streams, Hartsill Creek and Vache Grasse Creek, at 731' and 905', respectively. Two unnamed ephemeral streams will have impacts of 361' and 206', respectively. Job 040862 will impact three unnamed ephemeral streams, at 63', 155' and 69', respectively. Perennial stream impacts for both jobs total 1636', and ephemeral stream impacts total 854'. These potential stream impacts are assumed to be direct impacts associated with replacing or extending existing culverts, construction of new culverts or bridge piers, or stream relocation as part of the roadway widening within the construction limits.

All wetland impacts are associated with Job 040861. Impacts to wetlands include 4.21 acres due to draining, 0.84 acres due to fill within proposed construction limits, and 0.39 acres due to clearing and grubbing between proposed construction limits and ROW. Impacts to wetlands total 5.44 acres.

Compensatory mitigation for wetland and stream impacts will occur during the Section 404 permitting process. Stream and wetland mitigation will likely be required to offset the impacts incurred during construction. Stream and wetland credits will be purchased from one of the commercial banks servicing the Frog-Mulberry Watershed as compensatory mitigation. Construction of the proposed project should be allowed under the terms of a Nationwide 23 Section 404 Permit for Approved Categorical Exclusions as defined in the Federal Register 86(245):73522-73583.

The project area has varied topography and contains diverse vegetation types. The dominant vegetation types in the project area include forested upland and riparian areas, pastureland, and small isolated wetlands. The project area is located completely within the Arkansas Valley Plains of the Arkansas Valley Ecoregion (Level IV Ecoregions 37d; Woods et al., 2005). The Arkansas Valley ecoregion lies in a synclinal valley between the Ozark Highlands and Ouachita Mountains. It is characteristically diverse and transitional, containing plains, hills, floodplains, terraces, and scattered mountains. It is underlain by interbedded Pennsylvanian sandstone, shale, and siltstone.

The Arkansas Valley Plains is in the rainshadow of the Fourche Mountains, and thus is drier than surrounding ecoregions. Topography is undulating with few hills and ridges, and was once covered by a mosaic of prairie, savannah, and woodland, but is today mostly oak-hickory and oak-hickory-pine forests, pasture and hay fields, and farmland, with small remnants of prairie and woodland. Forests consist primarily of black oak (*Quercus velutina*), white oak (*Q. alba*), blackjack oak (*Q. marilandica*), post oak (*Q. stellata*) and hickories (*Carya spp.*), with some mixed deciduous-shortleaf pine (*Pinus echinata*) forest. Floodplains with low terraces contain willows (*Salix spp.*), maples (*Acer spp.*), hickories, birch (*Betula nigra*), American elm (*Ulmus americana*), and American sycamore (*Platanus occidentalis*). Pastureland in the project area is primarily comprised of nonnative tall fescue (*Schedonorus arundinaceus*) and Bermuda grass (*Cynodon dactylon*). Common edge plant species in the project area include blackberries (*Rubus spp.*), honeysuckles (*Lonicera spp.*), privet (*Ligustrum sp.*), American beautyberry (*Calicarpa americana*), and young trees.

The forested, edge, and open field habitats provide cover and foraging opportunities for many of the common wildlife species and species of concern. Most wildlife species found in the project area are habitat generalists and are not restricted to a particular habitat type. The species of wildlife expected to use or be present within the proposed project area include white-tailed deer (*Odocoileus virginianus*), wild turkey (*Meleagris gallapavo*), fox and eastern gray squirrels (*Sciurus niger & S. carolinensis*), eastern cottontail rabbit (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), American mink (*Mustela vison*), coyote (*Canis latrans*), red and gray foxes (*Vulpes vulpes* and *Urocyon cinereoargenteus*), Virginia opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), muskrat (*Ondatra zibethicus*), and beaver (*Castor canadensis*).

Other wildlife species inhabiting the area seasonally or year-round include; various avian species such as raptors, waterfowl, songbirds, neo-tropical migrants, reptiles and amphibians including rattlesnakes (*Crotalus sp. & Sistrurus sp.*), copperheads and cottonmouths (*Agkistrodon sp.*), rat snakes (*Pantherophis sp.*), kingsnakes (*Lampropeltis sp.*), water snakes (*Nerodia sp.*), salamanders, lizards, and turtles, a wide variety of fish species in the pond and creeks, and invertebrates including various burrowing crayfish (Cambaridae) species.

#### **Federally-protected species**

The official species list obtained through the US Fish and Wildlife Service's (USFWS) Information for Planning and Consultation website identifies the following as species that may occur in the project area: Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*), American burying beetle (*Nicrophorus americanus*), and the monarch butterfly (*Danaus plexippus*). See the USFWS Species List.

#### No Action Alternative

The no build alternative would not have any impacts to federally protected species.

#### **Build Alternative**

Indiana and northern long-eared bats use open forests, riparian corridors and forest edge habitat for foraging. Both species use trees with flaky or sloughing bark for summer roosting habitat. The construction alternative would directly impact approximately 14 acres of potential roosting and foraging habitat for Indiana and northern long-eared bats, approximately 2 acres associated with Job 040862 and 12 acres associated with Job 040861. Presence/absence surveys for the listed bat species will be conducted prior to seeking concurrence from the USFWS. Sedimentation entering streams during construction could reduce the foraging potential for the listed bat species, which feed on emerging aquatic insects in addition to terrestrial insects. However, these indirect effects will be minimized by the implementation of best management practices in sediment and erosion control during construction, and the inclusion of the ARDOT Water Pollution Control Special Provision.

Piping Plover is a small shorebird that breeds along the prairie pothole region, the Great Lakes and the North Atlantic Coast of North America. Red Knot is a shorebird species with a cosmopolitan distribution. In the Western Hemisphere, it breeds in the high Arctic of Alaska, Canada and Greenland, and spends winters along the coasts of North, Central and South America. Red Knot has one of the longest migrations of all bird species. Both Piping Plover and Red Knot appear in Arkansas occasionally during migration, along the shorelines of reservoirs and banks of large rivers. Suitable habitat for these two shorebird species is absent from the project area, thus no impacts to
these species are anticipated. Eastern Black Rail is a small secretive species of wading bird that inhabits marshes and other herbaceous wetlands, with a scattered distribution across North America. It spends winters along the Atlantic Coast, the Gulf of Mexico and the Caribbean. The nearest breeding population to Arkansas occurs in alkali wetlands in south-central Kansas and northern Oklahoma. Herbaceous wetlands occur in the project area that could serve as migration habitat for Eastern Black Rail. According to the Clean Water Act's Section 401(b)(1) Guidelines (40 CFR 230), it must be demonstrated that impacts to waters of the U.S. are avoided or minimized to a practicable extent. Thus, ARDOT will minimize the impact to these wetlands that could serve as Eastern Black Rail habitat.

The American burying beetle (ABB) is a large and colorful carrion beetle, with a scattered distribution across the U.S. from New England, west to the Great Plains, from Texas to South Dakota. This species has a preference for grassland, savannah and oak-hickory woodland habitat. Suitable habitat for this species occurs in the project area. Additionally, multiple records for this species from the 1990s are within 1 mile of the project area (ANHC 2021).

The monarch butterfly is a candidate species and as such is not federally protected under the Endangered Species Act. However, the USFWS recommends agencies implement conservation measures for candidate species in action areas as these are species, by definition, that may warrant future protection under the Act. ARDOT will plant native wildflowers after construction as a conservation measure.

Bald Eagles (*Haliaeetus leucocephalus*) are under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act. Suitable nesting habitat is present within the proposed project area for other migratory birds, including Cliff Swallow (*Petrochelidon pyrrhonota*), Barn Swallow (*Hirundo rustica*) and Eastern Phoebe (*Sayornis phoebe*). Phoebes and both swallow species commonly use bridges and culverts for nesting. Other migratory birds can also nest on transportation structures. The ARDOT Nesting Sites of Migratory Birds Special Provision will be implemented to ensure that the proposed project would avoid or minimize potential adverse effects to species protected under the MBTA and other federally protected species.

- ANHC (Arkansas Natural Heritage Commission). 2021. Arkansas Natural Heritage Commission, Natural Heritage Database.
- Woods A.J., Foti, T.L., Chapman, S.S., Omernik, J.M., Wise, J.A., Murray, E.O., Prior,
   W.L., Pagan, J.B., Jr., Comstock, J.A., and Radford, M., 2004, Ecoregions of
   Arkansas (color poster with map, descriptive text, summary tables, and
   photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,000,000).



Job 040762, January 5, 2023, ARDOT - Environmental GIS - Dudley



#### United States Department of the Interior

FISH AND WILDLIFE SERVICE Arkansas Ecological Services Field Office 110 South Amity Suite 300 Conway, AR 72032-8975 Phone: (501) 513-4470 Fax: (501) 513-4480



In Reply Refer To: Project Code: 2022-0019434 Project Name: 040862 - Hwy. 71-Coker St. (Widening) (Greenwood) (S) January 24, 2023

## Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

#### http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

**Migratory Birds**: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/ executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

#### Attachment(s):

Official Species List

## **Official Species List**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

#### **Arkansas Ecological Services Field Office**

110 South Amity Suite 300 Conway, AR 72032-8975 (501) 513-4470

#### **Project Summary**

Project Code:	2022-0019434
Project Name:	040862 - Hwy. 71-Coker St. (Widening) (Greenwood) (S)
Project Type:	Road/Hwy - New Construction
Project Description:	This project will be the construction of the western part of a bypass
	around the city of Greenwood AR, along state highway 10, from Hwy. 71
	to Coker St. in Greenwood.

#### Project Location:

Approximate location of the project can be viewed in Google Maps: <u>https://www.google.com/maps/@35.205146299999996,-94.2681726759633,14z</u>



Counties: Sebastian County, Arkansas

#### **Endangered Species Act Species**

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

#### Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <u>https://ecos.fws.gov/ecp/species/5949</u>	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/9045</u>	Endangered
Birds NAME	STATUS
Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/10477</u>	Threatened
<ul> <li>Piping Plover Charadrius melodus</li> <li>Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.</li> <li>There is final critical habitat for this species. Your location does not overlap the critical habitat.</li> <li>Species profile: <u>https://ecos.fws.gov/ecp/species/6039</u></li> </ul>	Threatened
Red Knot <i>Calidris canutus rufa</i> There is <b>proposed</b> critical habitat for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/1864</u>	Threatened

Reptiles NAME	STATUS
Alligator Snapping Turtle <i>Macrochelys temminckii</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/4658</u>	Proposed Threatened
Insects NAME	STATUS
American Burying Beetle <i>Nicrophorus americanus</i> Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/66</u>	Threatened
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/9743</u>	Candidate

#### **Critical habitats**

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

#### **IPaC User Contact Information**

Agency:	Arkansas Department of Transportation
Name:	Matthew Schrum
Address:	10324 I30
City:	Little Rock
State:	AR
Zip:	72209
Email	matthew.schrum@ardot.gov
Phone:	5015692083

#### Lead Agency Contact Information

Lead Agency: Federal Highway Administration



#### United States Department of the Interior

FISH AND WILDLIFE SERVICE Arkansas Ecological Services Field Office 110 South Amity Suite 300 Conway, AR 72032-8975 Phone: (501) 513-4470 Fax: (501) 513-4480



In Reply Refer To: Project Code: 2022-0014289 Project Name: 040861 - Hwy. 10 - Hwy. 96 (Greenwood Bypass) (S) January 04, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological

2

01/04/2023

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

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We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

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This species list is provided by:

#### **Arkansas Ecological Services Field Office**

110 South Amity Suite 300 Conway, AR 72032-8975 (501) 513-4470

#### **Project Summary**

Project Code:	2022-0014289
Project Name:	040861 - Hwy. 10 - Hwy. 96 (Greenwood Bypass) (S)
Project Type:	Road/Hwy - New Construction
Project Description:	This project is the eastern portion of a bypass to be built around the city of
	Greenwood AR, along Highway, between Coker Street and the current
	intersection with Hwy. 96.

Project Location:

Approximate location of the project can be viewed in Google Maps: <u>https://www.google.com/maps/@35.2091518,-94.25579100162086,14z</u>



Counties: Sebastian County, Arkansas

#### **Endangered Species Act Species**

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

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See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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Birds NAME	STATUS
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<ul> <li>Piping Plover Charadrius melodus</li> <li>Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.</li> <li>There is final critical habitat for this species. Your location does not overlap the critical habitat.</li> <li>Species profile: <u>https://ecos.fws.gov/ecp/species/6039</u></li> </ul>	Threatened
Red Knot <i>Calidris canutus rufa</i> There is <b>proposed</b> critical habitat for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/1864</u>	Threatened

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01/04/2023

Reptiles NAME	STATUS
Alligator Snapping Turtle <i>Macrochelys temminckii</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/4658</u>	Proposed Threatened
Insects NAME	STATUS
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Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/9743</u>	Candidate

#### **Critical habitats**

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

#### **IPaC User Contact Information**

Agency:	Arkansas Department of Transportation
Name:	Matthew Schrum
Address:	10324 I30
City:	Little Rock
State:	AR
Zip:	72209
Email	matthew.schrum@ardot.gov
Phone:	5015692083

## Appendix J

## **Cultural Resources**





Asa Hutchinson Governor Stacy Hurst Secretary

November 15, 2022

Mr. John Fleming Division Head Environmental Division Arkansas Department of Transportation P.O. Box 2261 Little Rock, AR 72203-2261

RE: Sebastian County: Greenwood Section 106 Review: FHwA Proposed Undertaking: Hwy. 10 – Hwy. 96 (Greenwood Bypass) (S) Route 10, Section 0 ARDOT Job Number: 040861 AHPP Tracking Number: 109693.01

Dear Mr. Fleming:

The staff of the Arkansas Historic Preservation Program (AHPP) reviewed the environmental assessment for the above referenced undertaking in Section 12, Township 6 North, Range 31 West in Sebastian County, Arkansas. The proposed undertaking entails the widening of 0.168 miles of Hwy. 10 between S. Fowler St. and Coker St., the replacement of ARDOT Bridges A0424 and A0425, and building 0.93 miles of a five-lane bypass with a center turn lane.

An architectural resources survey recorded nineteen properties along the project area. There is one known historic structure (SB0400) listed on the National Register of Historic Places (NRHP) near the project area. A total of 206 shovel tests were excavated within the area of potential effect (APE), all of which were negative for cultural materials.

Based on the provided information, the AHPP concurs that there will be no adverse effect to historic properties pursuant to 36 CFR § 800.5(b)(1) as a result of this undertaking.

Tribes that have expressed an interest in the area include the Caddo Nation, the Cherokee Nation, the Chickasaw Nation, the Choctaw Nation of Oklahoma, the Muscogee (Creek) Nation, the Osage Nation, the Quapaw Nation, and the Shawnee Tribe. We recommend consultation in accordance with 36 CFR § 800.2(c)(2).

Thank you for the opportunity to review this undertaking. Please refer to the AHPP Tracking Number listed above in all correspondence. If you have any questions, call Kathryn Bryles at 501-324-9784 or email kathryn.bryles@arkansas.gov.

Sincerely, Digitally signed by Kathryr Kathryn Bryles Date: 2022.11.15 15:06:34 06'00 for Scott Kaufman Director, AHPP

cc: Dr. Melissa Zabecki, Arkansas Archeological Survey Mr. Randal Looney, Federal Highway Administration

> Arkansas Historic Preservation Program 1100 North Street • Little Rock, AR 72201 • 501.324.9150 ArkansasPreservation.com





Asa Hutchinson Governor Stacy Hurst Secretary

April 7, 2022

Mr. John Fleming Division Head Environmental Division Arkansas Department of Transportation P.O. Box 2261 Little Rock, AR 72203-2261

RE: Sebastian County: General Section 106 Review: FHwA Proposed Undertaking: Hwy. 71 – Coker St. (Widening) (Greenwood) (S) Route 10, Section 0 ARDOT Job Number: 040862 AHPP Tracking Number: 109624

Dear Mr. Fleming:

The staff of the Arkansas Historic Preservation Program (AHPP) reviewed the project identification form for the above referenced undertaking in Sebastian County, Arkansas. The proposed undertaking entails the widening of Highway 10 t five lanes. The total proposed right-of-way surveyed was 14.2 acres and the total TCE surveyed was 2.5 acres.

No archeological sites are recorded in or near the project location. A total of 137 shovel tests were excavated within the APE, all of which were negative for cultural materials.

Based on the provided information, the AHPP concurs with the finding of **no historic properties affected pursuant to 36 CFR § 800.4(d)(1)** for the proposed undertaking and that no further archeological work is needed.

Tribes that have expressed an interest in the area include the Caddo Nation, the Cherokee Nation, the Chickasaw Nation, the Choctaw Nation of Oklahoma, the Muscogee (Creek) Nation, the Osage Nation, the Quapaw Nation, and the Shawnee Tribe. We recommend consultation in accordance with 36 CFR § 800.2(c)(2).

Thank you for the opportunity to review this undertaking. Please refer to the AHPP Tracking Number listed above in all correspondence. If you have any questions, call Kathryn Bryles at 501-324-9784 or email kathryn.bryles@arkansas.gov.

Sincerely,

Kathryn Bryles Digitally signed by Kathryn Bryles Date: 2022.04.07 13:11:35 -05'00'

*for* Scott Kaufman Director, AHPP

cc: Dr. Melissa Zabecki, Arkansas Archeological Survey

#### FEDERAL HIGHWAY ADMINISTRATION FINDING OF NO SIGNIFICANT IMPACT 040762 – GREENWOOD BYPASS P.E. F.A.P. NHPP-0065(63) 040861 – HWY. 10-HWY. 96 (GREENWOOD BYPASS) (S) F.A.P. STPF-9177(10) 040862 – HWY. 71 – COKER ST. (WIDENING) (GREENWOOD) (S) F.A.P. STPF-0072(63) SEBASTIAN COUNTY. ARKANSAS

Upon consideration of the approved Environmental Assessment (EA), public comments, and other considerations, the Federal Highway Administration (FHWA) has determined that the Build Alternative is the Preferred Alternative for the proposed project. The Preferred Alternative will have no significant impact on the human or natural environment and hereby issues a Finding of No Significant Impact (FONSI) pursuant to 23 CFR § 771.121(a).

The Arkansas Department of Transportation (ARDOT), in cooperation with FHWA, is proposing to widen Highway (Hwy.) 10 from Hwy. 71 to Hwy. 96 in the City of Greenwood and provide a new location section south of Greenwood's Central Business District. East Center Street between the Central Business District and Hwy. 96 will also be widened. Two existing bridges will be replaced with wider structures and three new bridges will be constructed along the new location section. Sidewalks, a shared-use path, and two new traffic signals will be provided. The project location is shown in **Figure 1**. FHWA is providing the funding for the proposed project and is the lead federal agency under the National Environmental Policy Act (NEPA).

The purpose of the proposed project is to address the system connectivity, mobility, capacity, and resiliency deficiencies detailed in the EA.

The EA assessed only the No Action Alternative and the Build Alternative and was approved by FHWA on February 8, 2023. Based on feedback from the public and the EA findings, the Build Alternative was identified as the Preferred Alternative. The typical sections for the Preferred Alternative are shown in **Figure 2**.

This FONSI is based on FHWA's independent evaluation. The information contained in the EA has been determined to adequately and accurately discuss the need, environmental impacts, and appropriate mitigation measures for the project. The EA provides sufficient evidence and analysis for determining that identified impacts would not cause significant adverse effects to the natural, cultural, or social environments.

#### **Public Involvement**

A Public Officials Meeting and an open forum Public Involvement Meeting were held on April 21, 2022, and project information was available on the ARDOT website from April 21 through May 6, 2022. The Public Officials Meeting had a total of 17 attendees, the Public Involvement Meeting had a total of 126 attendees, and the website had a total of 577 viewers. A total of 44 comments were received during the public comment period, the majority of which expressed support for the project.

A Public Officials Meeting and an open forum Location and Design Public Hearing were held on April 20, 2023, and project information was available on the ARDOT website from March 20 through May 5, 2023. The Public Officials Meeting had a total of 25 attendees, the Location and Design Public Hearing had a total of 96 attendees, and the website had a total of 455 viewers. A total of 14 comments were received during the public comment period. The disposition of comments received during the public comment period is provided in **Appendix A**.



Figure 1. Project Location

Job 040762, January 5, 2023, ARDOT - Environmental GIS - Dudley





Job 040762, January 9, 2023, ARDOT - Environmental GIS - Dudley

#### **Environmental Impacts**

The environmental impacts for the Preferred Alternative were described in the approved EA. FHWA finds that the project would not impose significant impacts on the social, cultural, or natural environment. Impacts for the Preferred Alternative are summarized in Table 1.

Table 1.	Impacts	Associated	with the	<b>Preferred Alternative</b>
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Resource	Preferred Alternative Impacts		
Construction Cost	~\$42.4 million		
Right of Way Cost	~\$2.6 million		
Utility Relocation Cost	~\$5.6 million		
Total Project Cost	~\$50.6 million		
Right of Way/TCE Acquisition	48.0 / 4.0 acres		
Relocations	7 residences; 1 business		
Noise Receptors Impacted	11		
Section 4(f) Recreational Resources	Greenwood Walking Trail temporary closures		
Streams	2,490 linear feet		
Wetlands	5.4 acres		
Suitable Bat			
Habitat/American Burying	14 / 8.9 acres		
Beetle			
Important Farmland	9.2 acres		
Visual Quality	Minor		

#### Right of Way / Land Use

The Preferred Alternative will require approximately 48 acres of new right of way (ROW) acquisition and 4 acres of temporary construction easement. An estimated seven residences and one business will be relocated; however, relocation numbers will remain estimates until the final project design has been established. Direct land use changes will primarily be the conversion of residential, commercial, agricultural, and wooded property to transportation ROW. The Preferred Alternative will not directly impact any planned developments and is consistent with comprehensive land use plans for the area.

FHWA finds that there are no significant impacts to private property or land use anticipated with the Preferred Alternative.

#### **Important Farmland**

Acquisition of ROW for the Preferred Alternative will include 9.2 acres designated as Prime Farmland. The project received a total site assessment score of fewer than 123 points from the Natural Resource Conservation Service; therefore, no further work is required under the Farmland Protection Policy Act. The farmland conversion impact rating form is provided in **Appendix B**.

FHWA finds that there are no significant impacts to important farmland anticipated with the Preferred Alternative.

#### Hazardous Materials

An underground oil water separator and a maintenance building located at the ARDOT District 4 Area Headquarters will be impacted by the project. If hazardous materials, unknown illegal dump sites, or USTs are identified or accidentally uncovered during project construction, the type and extent of contamination will be determined according to the ARDOT response protocol. In cooperation with the Arkansas Department of Energy and Environment, Division of Environmental quality (ADEQ), appropriate remediation and disposal methods will be determined.

An asbestos survey will be conducted on each building slated for acquisition and demolition. Asbestos-containing materials will be removed prior to demolition in accordance with ADEQ, Environmental Protection Agency, and Occupational Health and Safety regulations.

FHWA finds that there are no significant hazardous materials impacts anticipated with the Preferred Alternative.

#### Section 4(f) Resources

A section of the Greenwood Walking Trail passes under the existing Hwy. 10 bridge over Heartsill Creek. A separate section of the trail will need to cross the new location section at the south end of Main Street. Trail sections in and near the project footprint will be temporarily closed during construction. The bridge underpass section of the trail will need to be reconnected by the City of Greenwood following replacement bridge construction. ARDOT will ensure the bridge dimensions and trail surface area will accommodate the trail reconnection. ARDOT will provide a crosswalk and safety signage at the trail crossing at the south end of Main Street. The new location bridges will be able to accommodate underpasses as requested by City officials to ensure a future connection between the Greenwood Walking Trail and the Lake Greenwood trails located south of the project area will be possible. The Section 4(f) Evaluation, which includes the City's concurrence, is provided in **Appendix C**.

FHWA finds that there are no significant Section 4(f) resource impacts anticipated with the Preferred Alternative.

#### **Traffic Noise Levels**

In accordance with the *Title 23 Code of Federal Regulations Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise* and the ARDOT noise policy, a screening level noise analysis was conducted to determine potential noise impacts. The noise analysis results indicated that 11 noise sensitive receptors will have sound levels approaching, equaling, or exceeding FHWA Noise Abatement Criteria and are therefore considered impacted. The increases would be considered minor (not exceeding a 1 to 2 decibel increase) and noise mitigation measures such as noise barriers would not be feasible. The noise analysis is provided in **Appendix D**.

FHWA finds that there are no significant traffic noise impacts anticipated with the Preferred Alternative.

#### Visual Resources

The Preferred Alternative passes through residential and commercial areas, as well as pastures, agricultural, and wooded land. Construction of the Preferred Alternative has the potential to result in minor adverse visual impacts from the increased proximity of the roadway to some residences and Greenwood Walking Trail users, the introduction of new bridges, and removing trees and vegetation. However, the provision of sidewalks with grass berms and a shared use path will have positive visual impacts for project travelers and neighbors. Additionally, local planning and development guidelines will be taken into consideration to ensure compatibility.

FHWA finds that there are no significant impacts to visual resources anticipated with the Preferred Alternative.

#### **Streams and Wetlands**

The Preferred Alternative will impact the perennial streams of Heartsill Creek and Vache Grasse Creek, as well as five unnamed ephemeral streams. Total stream impacts include a total of 1,636 linear feet of the perennial streams and 854 linear feet of the ephemeral streams. Total wetlands impacts will be 5.4 acres, which includes 4.2 acres due to draining, 0.8 acre due to fill within proposed construction limits, and 0.4 acre due to clearing and grubbing between proposed construction limits and ROW. The project will require a standard individual Section 404 permit. Compensatory mitigation for wetland and stream impacts will occur during the Section 404 permitting process. Stream and wetland mitigation will likely be required to offset the impacts incurred during construction, with credits being purchased from one of the available commercial banks as compensatory mitigation.

FHWA finds that there are no significant impacts to streams anticipated with the Preferred Alternative.

#### Floodplains

Approximately 28.1 acres of Zone AE Special Flood Hazard Area is within the proposed ROW. The project was designed to maintain or lower water surfaces where insurable structures are located nearby. Any increase in water surface meets the minimum requirements of the National Flood Insurance Program or is limited to a maximum of 1 foot. Overall, the project will be designed to minimize adverse impacts to the floodplain's natural and beneficial values. Implementation of the Preferred Alternative meets the minimum requirements of the National Flood Insurance Program.

FHWA finds that there are no significant floodplains impacts anticipated with the Preferred Alternative.

#### **Protected Species**

In accordance with the Endangered Species Act (ESA) of 1973, federal projects must determine potential effects to federally listed threatened and endangered species. The official species list obtained through the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation website lists a total of nine endangered, threatened, candidate and proposed species that have the potential to be present in or migrate through the project area. These species include: the endangered Indiana Bat (*Myotis sodalis*) and Northern Long-eared Bat (*Myotis septentrionalis*); the proposed endangered Tricolored Bat (*Perimyotis subflavus*); the threatened Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*), and the American burying beetle (*Nicrophorus americanus*); the proposed threatened Alligator Snapping Turtle (*Macrochleys temminckii*); and the candidate Monarch Butterfly (*Danaus plexippus*).

Construction would directly impact approximately 14 acres of potential roosting and foraging habitat for Indiana and Northern Long-eared Bats. Avoidance and minimization measures will be implemented through Special Provisions in the job contract. Sedimentation entering streams during construction could reduce the foraging potential for the listed bat species, which feed on emerging aquatic insects in addition to terrestrial insect. However, these indirect effects will be minimized by the implementation of best management practices (BMP) in sediment and erosion control during construction, and the inclusion of the ARDOT Water Pollution Control Special Provision.

An acoustic bat survey was conducted in June 2023. The results of the bat survey did not detect any federally listed bat species; therefore, the project can proceed without restrictions.

"May effect, not likely to adversely affect" determinations were made for Indiana and Northern Long-eared Bats. ESA Section 7 consultation for the two separate jobs (040861 and 040862) comprising Job 040762 were submitted separately. USFWS concurrence was completed on June 21, 2023. The proposed Tricolored Bat often uses the same active season foraging and roosting areas as Indiana and Northern Long-eared Bats, but will roost on smaller branches, pine boughs, and clusters of dead leaves rather than under sloughing bark. Like the *Myotis* species, they use caves during winter hibernation. This project will not jeopardize the continued existence of the Tricolored Bat.

Both Piping Plover and Red Knot appear in Arkansas occasionally during migration, along the shorelines of reservoirs and banks of large rivers. Suitable habitat for these two shorebird species is absent from the project area, thus it has been determined that the project will have "no effect" on these species.

Herbaceous wetlands occur in the project area that could serve as migration habitat for Eastern Black Rail. According to the Clean Water Act's Section 401(b)(1) Guidelines (40 CFR 230), it must be demonstrated that impacts to waters of the U.S. are avoided or minimized to a practicable extent. Thus, ARDOT will minimize the impact to these wetlands that could serve as Eastern Black Rail habitat.

It has been determined that the project will have "no effect" on the Piping Plover and Red Knot due to lack of suitable habitat. Due to the presence of emergent herbaceous wetland habitat within the project area, it has been determined that the project "may affect but is not likely to adversely affect" the Eastern Black Rail. ESA Section 7 consultation was submitted separately for the two separate jobs comprising Job 040762; USFWS concurrence was completed on June 21, 2023.

Potential suitable habitat for the Alligator Snapping Turtle species exists in the project area at Vache Grasse Creek, Adamson Creek, Heartsill Creek, and the ponds within the footprint of 040861. A "may affect, not likely to adversely affect" determination was made for the Alligator Snapping Turtle. USFWS concurred on June 21, 2023. The project will not jeopardize the continued existence of the Alligator Snapping Turtle.

Suitable habitat for the American burying beetle occurs in the project area. Additionally, multiple records for this species are within 1 mile of the project area. The American Burying Beetle Final 4(d) Rule applies to the project's activities that have the potential to affect American burying beetles. The Final 4(d) Rule exempts the incidental take of American burying beetles from take prohibitions in the ESA. The exemptions apply if the activities do not occur on certain conservation lands. Within Arkansas, these conservation lands are entirely within the existing boundaries of Fort Chaffee. This project occurs outside of Fort Chaffee; therefore, the project can proceed without restrictions.

The Monarch Butterfly is a candidate species and as such is not federally protected under the ESA. However, the USFWS recommends agencies implement conservation measures for candidate species in action areas as these are species, by definition, that may warrant future protection under the Act. ARDOT will plant native wildflowers after construction as a conservation measure. Bald Eagles (*Haliaeetus leucocephalus*) are protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act. Suitable nesting habitat is present within the proposed project area for Bald Eagle (although no know nests have been observed) and other migratory birds, including Cliff Swallow (*Petrochelidon pyrrhonota*), Barn Swallow (*Hirundo rustica*), and Eastern Phoebe (*Sayornis phoebe*). The Eastern Phoebe and both swallow species commonly use bridges and culverts for nesting. Other migratory birds can also nest on bridges, culverts, and other transportation structures. The ARDOT Nesting Sites of Migratory Birds Special Provision will be implemented to ensure that the proposed project will avoid or minimize potential adverse effects to species protected under the MBTA and other federally protected species.

The USFWS species list and all consultation and coordination information are provided in **Appendix E**.

FHWA finds that there are no significant impacts to protected species anticipated with the Preferred Alternative.

#### **Environmental Justice**

The alignment of the Preferred Alternative will not sever any subdivisions or disrupt community services; however, the project would impact multiple residences. According to the U.S. Census Bureau data and field observations, the Preferred Alternative will not result in disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of E.O. 12898 and FHWA Order 6640.23.

FHWA find that there are no significant impacts to Title VI and Environmental Justice populations because of the Preferred Alternative.

#### **Cultural Resources**

FHWA, in consultation with the State Historic Preservation Office and Native American Tribal Historic Preservation Officers, has determined the project will not adversely affect historic properties. Cultural Resources information is provided in **Appendix F**.

FHWA finds that there are no significant cultural resources impacts anticipated with the Preferred Alternative.

#### **Indirect Impacts**

Indirect effects are defined as effects that are reasonably foreseeable that may be caused by the project but would occur in the future or outside of the project area.

Decreases in water quality were identified as a potential indirect impact. Such impacts will be minimized by the implementation of BMPs in sediment and erosion control during construction, and the inclusion of special provisions to protect water quality.

The Preferred Alternative primarily follows the existing Hwy. 10 and East Center Street alignments. The new location alignment would be access controlled. Except for the new location section, improved capacity could make areas not already developed along the corridor more attractive to developers. However, development along the corridor is already occurring, which would likely continue regardless of the proposed project.

FHWA finds that there are no significant indirect impacts anticipated with the Preferred Alternative.

#### **Cumulative Impacts**

ARDOT jobs either programmed, under construction, or recently completed in the project area include: 040716 Massard Creek–Hwy. 22 (Widening & Reloc.); 040823 Hwy. 10S/Hwy. 71 Signal (Greenwood); 040879 Hwy. 10–Hwy. 22; 040869 Cherokee & Kings Creeks Strs. & Apprs.; pavement preservation job 040879 Hwy. 10–Hwy. 22; and mill and overlay jobs 040765 Scott Co. Line–Hwy. 10 and 040771 Hwy. 10–Mill Creek.

FHWA finds that there are no significant cumulative impacts anticipated with the Preferred Alternative.

#### **Council on Environmental Quality Regulations**

The 2020 Council on Environmental Quality regulations require consideration of a project's affected environment and degree of effect in determining whether the project would have a significant impact (40 CFR § 1501.3).

Regarding the potentially affected environment, "agencies should consider, as appropriate to the specific action, the affected area (national, regional, or local) and its resources, such as listed species and designated critical habitat under the Endangered Species Act. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend only upon the effects in the local area."

"In considering the degree of the effects, agencies should consider the following, as appropriate to the specific action: (a) Both short- and long-term effects. (ii) Both beneficial and adverse effects. (iii) Effects on public health and safety. (iv) Effects that would violate Federal, State, Tribal, or local law protecting the environment."

The following issues are considered in the determination of whether there are significant impacts:

#### 1. Impacts that may be both beneficial and adverse.

In addition to the adverse impacts described above, the Preferred Alternative is anticipated to reduce highway congestion by adding capacity and improving system connectivity and resiliency. More convenient access to community services – including

public schools – would provide long-term benefits. The provision of sidewalks and the shared-use path will improve pedestrian and bicyclist mobility and safety.

#### 2. The degree to which the project affects public health or safety.

The existing bridges over Heartsill and Vache Grasse Creeks provide the only crossing of these waterways within approximately 20 miles. The additional bridges along the new location section will improve public health and safety by increasing system resiliency and reducing potential emergency response vehicle delays. Adding roadway capacity and providing two-way left turn lanes will improve safety for motorists. Providing sidewalks and a shared-use path will improve safety for pedestrians and bicyclists. The two bridge replacements will be wider than the existing bridges and include shoulders, thereby increasing the distance between pedestrians and bicyclists and vehicles within the travel lanes. The project is not anticipated to have any adverse public health or safety impacts.

# 3. Unique characteristics of the geographical area such as proximity to historic or cultural resources, parks, prime farmland, wetlands, wild and scenic rivers, or ecologically critical areas.

The project will not impact historic or cultural resources, wild and scenic rivers, or ecologically critical areas. Wetlands and streams are anticipated to be impacted, but these impacts will be mitigated through the purchase of wetland and stream credits at an improved mitigation bank. Although important farmland will be impacted, the impacts are minimal and do not require mitigation. A Section 4(f) Evaluation was prepared in coordination with city officials to mitigate impacts to the Greenwood Walking Trail.

## 4. The degree to which the effects on the environment are expected to be highly controversial.

The term "controversial" refers to cases where substantial dispute exists as to the size, nature, or effect of the action rather than to the existence of opposition to a use, the effect of which is relatively undisputed. A public involvement meeting, a public hearing, and two public official meetings were conducted for the proposed project. Public officials have been involved with project development and substantial coordination with ARDOT decision-makers has occurred. A majority of public involvement meeting comments were in support of the proposed project. Comments in support of the Preferred Alternative were received during the Location and Design Public Hearing.

While Location and Design Public Hearing comments included opposition to the size, nature, or effect of the action, the environmental effects of the Preferred Alternative are not anticipated to be highly controversial.

## 5. The degree to which the effects on the quality of the human environment are highly uncertain or involve unique or unknown risks.

Impacts to the human environment are well-documented in the EA for the proposed project in the land use, hazardous waste, environmental justice, visual quality, and noise sections. The proposed project is not anticipated to result in any significant adverse effects to the human environment.

# 6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The FHWA NEPA regulations at 23 CFR § 771.115(a) list the types of actions normally requiring the preparation of an Environmental Impact Statement (EIS). The proposed project is not within the scope of a project typically requiring the preparation of an EIS and the EA determined the project has no significant impacts warranting an EIS. The project has logical termini and independent utility, represents a reasonable expenditure, and does not force additional improvements to be made to the transportation system. This action would not set a precedent for future actions with significant effects or represent a decision in principle about a future consideration.

## 7. Whether the action is related to other actions with individually insignificant, but cumulatively significant, impacts.

As outlined in the EA and this FONSI document, only minor cumulative impacts on the water resources, land use, and threatened and endangered species habitat are expected to result from this project combined with other development in the area. No significant cumulative effects have been identified for the proposed project.

# 8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss of significant scientific, cultural, or historic resources.

Pursuant to Section 106 of the National Historic Preservation Act, records checks and an intensive cultural resources survey were conducted. No adverse impacts to known cultural resources are expected and there is a very low likelihood of impacts to undiscovered cultural resources.

# 9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act.

It was determined that the proposed project would have "no effect" on the Piping Plover and Red Knot due to lack of suitable habitat. The project "may affect but is not likely to adversely affect" the Eastern Blackrail, Indiana and Northern Long-eared Bats, and Alligator Snapping Turtle. The project will not jeopardize the existence of the Tricolored Bat or the Monarch Butterfly. No adverse effects to any federally listed species or critical habitat are anticipated as a result of the Preferred Alternative.

## 10. Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

The proposed action does not knowingly threaten a violation of any federal, state, or local law for the protection of the environment. All applicable permits would be acquired prior to construction.

#### Conclusion

Based upon the EA, comments resulting from the public involvement meeting and public hearing, and the foregoing information and other supporting information, FHWA concludes that the Preferred Alternative would not have a significant impact on the environment. No additional NEPA documentation is required for this project. If changes in laws or regulations that apply to the project occur during design or construction, or there are major design changes that result in significantly greater impacts than those described in this document, a NEPA re-evaluation of the project would be performed. ARDOT has completed the assessment of the proposed project and FHWA issues a finding of no significant impact for the Greenwood Bypass project in Greenwood, Sebastian County, Arkansas.

Rondal Ivory

Randal Looney Environmental Coordinator Federal Highway Administration



U.S. Department of Transportation Federal Highway Administration June 28, 2023

Date of Approval

#### DISPOSITION OF PUBLIC COMMENTS

Job 040762 Greenwood Bypass P.E. (Hwy. 10) Sebastian County

An Open Forum Design Public Hearing for this project was held on April 20, 2023 at Greenwood First Baptist Church (The Edge Building). The proposed design was displayed on an aerial photograph, depicting design features on an approximate scale of 1":100'. Representatives of various ARDOT Divisions as well as District 4 were present to explain the proposed design and to answer questions. Copies of the Environmental Assessment and other general project information were available.

Seventeen (17) written comments were received. Summaries of these comments and responses thereto follow:

 <u>COMMENT:</u> Anonymous stated that he or she wished the meeting had been better publicized and that the satellite photos on the site were blurry and difficult to read. This citizen also expressed a concern that this project will negatively affect the aesthetic of the town square.
 **PESPONSE:** The only work proposed for Center St/Hwy, 10 in the section directly in front of town

**<u>RESPONSE</u>**: The only work proposed for Center St/Hwy. 10 in the section directly in front of town square is an overlay, so the aesthetics should not be affected.

2. <u>COMMENT:</u> Danny King stated that he and most of the other members of the Greenwood Lodge do not want the lodge to be destroyed, and he expressed the belief that a sidewalk beside the lodge is not needed. He suggested that the street should connect straight to Bell Road to keep traffic from downtown, and he recommended that instead of the bypass it would be beneficial to extend Denver Street to intersect with Hwy. 96 near the fire department. In his opinion, the proposed project will not improve traffic.

**RESPONSE:** ARDOT studied this alternate and determined that a bypass was necessary to improve the system connectivity and traffic operations in Greenwood. Sidewalks are standard for urban areas, and the removal of the sidewalk along the proposed Main Street Connection would not be sufficient to alleviate the conflict with the Lodge building while still providing connectivity at Main Street. As it pertains to the connection via Bell Road, there is not sufficient room to implement the two curves needed to bring the connection far enough over to avoid the bridge to connect the bypass using Bell Road in lieu of connecting via Main Street as is currently proposed.

**3. COMMENT:** Rod Powell stated that he would like to see a trail underpass at the new bridge crossing Vache Grasse Creek to be added to the plans to connect to the existing trails at Greenwood City Lake. He also noted that on the Main Street Section, there is a 5' wide sidewalk on both sides, and he would like one side to be increased to 10' to match the width of the existing trail that the road intersects.

**<u>RESPONSE</u>**: The current design does not prohibit the inclusion of a trail; however, a trail would have to be included via permit by others. In addition, the current design calls for the construction of a shared use path that will connect through town via Hwy. 10 and Coker St.

- <u>COMMENT</u>: Jackson Hurst stated that he approves and supports this project, and he likes that the bypass will improve safety and give the city back to the community. <u>RESPONSE</u>: Thank you for the comment.
- <u>COMMENT:</u> Rebecca McCall stated that the land has been in her family for 142 years, and it is difficult to lose it. She left information as an alternate contact for the property.
   <u>RESPONSE:</u> ARDOT will only acquire what is needed for the construction and maintenance of the facility, based on the Fair Market Value from an appraisal.
Page 2 of 3

#### DISPOSITION OF PUBLIC COMMENTS

Job 040762 Greenwood Bypass P.E. (Hwy. 10) Sebastian County

- 6. <u>COMMENT:</u> Larry and Charles Bearden requested that their driveway be moved farther south to avoid their solar panels, which are placed into the ground with concrete. They also asked if there is any type of sound barrier to help decrease the noise, as the road will be so close to the house. <u>RESPONSE:</u> Based on the survey and aerial photo, the proposed drive is already staying out of the solar panels, and we can adjust the temporary construction easement to avoid it fully. The noise analysis completed for this project did not identify impacts at this residence. A sound barrier is therefore not warranted. Even at locations where noise impacts were predicted to occur, sound barriers would not be effective due to the need for driveway access and roadway intersections.
- <u>COMMENT:</u> Morgan and Amber Skaggs stated that their only concern was with the absence of a traffic signal at the intersection of Coker St. and Hwy. 10.
   <u>RESPONSE:</u> Based on our traffic counts, this intersection does not currently warrant a signal. However, the proposed design will allow for a future traffic light, and a signal study can be requested when new traffic patterns are established.
- <u>COMMENT:</u> Hal Stewart asked, on behalf of Barbara Stewart, for more information for the address 315 South Coker St to be sent to 1515 Stewart Ct, Greenwood AR 72936.
   <u>RESPONSE:</u> The proposed right of way is impacting the house at this location. Relocation staff will contact the property owners, after NEPA has been approved, to explain the relocation process.
- **9.** <u>COMMENT:</u> Sylvia Tucker stated that the land has been in her family for 140 years. She requested more information on 907 Excelsior Rd.

**<u>RESPONSE</u>**: The proposed right of way is set about 28' from the existing right of way at this property. Roadway will defer to ROW for comments. ARDOT will only acquire what is needed for the construction and maintenance of the facility, based on the Fair Market Value from an appraisal.

- **10.** <u>COMMENT:</u> William Baker stated that he agrees with the road improvements. <u>RESPONSE:</u> Thank you for the comment.
- **11.** <u>COMMENT:</u> Tom Ransom stated that septic lateral lines are within the proposed right of way, and he requested that the proposed driveway be offset instead of being perpendicular to the road to avoid increasing erosion. He expressed a concern about effects to the existing drainage line and French drain, and he stated that mature trees/fruit tree will be lost. He expressed the belief that a sidewalk, especially at 10' wide, is not needed.

**<u>RESPONSE</u>**: The design will be revised to adjust the driveway as requested. The proposed storm sewer is adequately designed to accommodate runoff. The 10' shared use path was added per request of the agreement with the City.

**12.** <u>COMMENT:</u> Amanda DeWulf stated that she is very worried about the safety of her family with the proposed design coming so close to her house. She also said that her home is on a curve, and that creates a challenge to maneuver into and out of the drive. Another concern she shared is that this project will degrade the market value of her home.

**RESPONSE:** To clarify the confusion regarding job numbers, there are two projects that fall under 040762, which are separated by Fowler St. The property in question is located within the limits of Job 040862. The proposed design flattens out the curve to improve sight distance, which should help with visibility. An appraisal of the property will be completed to determine the value and any possible damages.

#### DISPOSITION OF PUBLIC COMMENTS

#### Job 040762 Greenwood Bypass P.E. (Hwy. 10) Sebastian County

- 13. <u>COMMENT:</u> Stacy and Levi Ingram stated that they will require assistance in relocating and asked for any information to be sent to explain the process. <u>RESPONSE:</u> Relocation staff will contact the property owners, after NEPA has been approved, to explain the relocation process.
- 14. <u>COMMENT:</u> Hobe Runion stated that he like the presentation and discussion and is looking forward to the project.

**RESPONSE:** Thank you for the comment.

- **15.** <u>COMMENT:</u> Paul Van Lare stated that there is a missing driveway at 1802 Excelsior Rod between 110 and 115 that needs to be replaced.
   <u>RESPONSE:</u> The design will be revised to replace the driveway as requested.
- **16.** <u>COMMENT:</u> David and Vicki Jent stated that they would prefer an early acquisition of their property instead of waiting until later in the project.

**<u>RESPONSE</u>**: Right of Way will need to investigate further to determine the eligibility of an early acquisition.

**17.** <u>COMMENT:</u> Barbara Byrd stated that it is already difficult to pull in and out of her driveway, and this will just make it harder to get out. She expressed her concern over the number of near accidents she has observed daily.

**RESPONSE:** The proposed roadway is designed to accommodate a greater flow of traffic. The two- way left-turn lane will provide a separate space for vehicles turning left to slow down and wait for a gap in traffic with minimum disruption to through traffic.

# Appendix B – FARMLAND CONVERSION IMPACT RATING FORM

#### ARDOT Job 040762

U.S. DEPARTMEN	T OF AGRICULTURE
Natural Resource	s Conservation Service

#### FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

NRCS-CPA-106

(Rev. 1-91)

PART I (To be completed by Federal Agency) Job	040762	3. Date	of Land Evaluation	4. Sheet 1 o	4. Sheet 1 of					
1. Name of Project		5. Federal Agency Involved								
2. Type of Project		6. Coun	ty and State							
PART II (To be completed by NRCS)		1. Date Request Received by NRCS 2. Person Completing Form								
<ol> <li>Does the corridor contain prime, unique statewide or local (If no, the FPPA does not apply - Do not complete addition</li> </ol>	important farmland? nal parts of this form).	۱	YES NO		4. Acres	Irrigated Average	Farm Size			
5. Major Crop(s)	6. Farmable Land	in Goverr	nment Jurisdiction		7. Amoun	t of Farmland As D	efined in FPPA			
	Acres:		%		Acres	:	%			
8. Name Of Land Evaluation System Used	9. Name of Local	Site Asse	ssment System		10. Date l	and Evaluation Re	eturned by NRCS			
			Alternativ	ve Corr	dor For S	eament				
PART III (To be completed by Federal Agency)			Corridor A	Corr	idor B	Corridor C	Corridor D			
A. Total Acres To Be Converted Directly										
B Total Acres To Be Converted Indirectly. Or To Receive	Services									
C. Total Acres In Corridor										
PART IV (To be completed by NRCS) Land Evalua	tion Information									
A. Total Acres Prime And Unique Farmland										
B. Total Acres Statewide And Local Important Farmland										
C. Percentage Of Farmland in County Or Local Govt. U	nit To Be Converted									
D. Percentage Of Farmland in Govt. Jurisdiction With San	ne Or Higher Relative	e Value								
PART V (To be completed by NRCS) Land Evaluation In	formation Criterion R	Relative								
value of Farmland to Be Serviced or Converted (Scale	of 0 - 100 Points)									
PART VI (To be completed by Federal Agency) Corrid	dor M	aximum								
Assessment Criteria (These criteria are explained in 2	7 CFR 658.5(c))	Points								
1. Area in Nonurban Use		15								
2. Perimeter in Nonurban Use		10								
3. Percent Of Corridor Being Farmed		20								
4. Protection Provided By State And Local Governme	nt	20								
5. Size of Present Farm Unit Compared To Average		10								
6. Creation Of Nonfarmable Farmland		25								
7. Availablility Of Farm Support Services		5								
8. On-Farm Investments		20								
9. Effects Of Conversion On Farm Support Services		25								
10. Compatibility With Existing Agricultural Use		10								
TOTAL CORRIDOR ASSESSMENT POINTS		160								
PART VII (To be completed by Federal Agency)										
Relative Value Of Farmland (From Part V)		100								
Total Corridor Assessment (From Part VI above or a loc assessment)	cal site	160								
TOTAL POINTS (Total of above 2 lines)		260								
1. Corridor Selected:         2. Total Acres of Fa           Converted by Pro	rmlands to be 3. oject:	Date Of S	Selection:	4. Was	A Local Sit	e Assessment Use	d?			
					YES	NO				

5. Reason For Selection:

Signature of Rerson Completing this Part:

NOTE: Complete a form for each segment with more than one Alternate Corridor

DATE

# **SECTION 4(F)** DE MINIMIS IMPACT EVALUATION FOR PUBLIC PARKS, RECREATION LANDS, AND WILDLIFE AND WATERFOWL REFUGES

**ARDOT Job 040762** FAP NHPP-0065(63) Greenwood Bypass P.E. Sebastian County



Greenwood Walking Trail City of Greenwood Department of Parks and Recreation

June 2023

Federal Highway Administration Arkansas Department of Transportation

June 28, 2023 Date of Approval

Randal Luruy Randal Looney Environmental Coordinator Federal Highway Administration

### What is Section 4(f)?

Section 4(f) is part of a law that was passed to protect public parks, recreation areas, wildlife/waterfowl refuges, and important historic sites from being harmed by transportation projects.

### **Does Section 4(f) apply to the Greenwood Walking Trail?**

The Arkansas Department of Transportation (ARDOT) has proposed a project involving the Greenwood Walking Trail in the City of Greenwood (hereinafter "City"), Arkansas. The trail is city-owned and managed by the City's Parks and Recreation Department. An ARDOT-issued Special Permit currently allows the trail to use transportation right of way for a Highway 10 bridge trail underpass at Heartsill Creek. An easement agreement exists between the City and a private property owner for the section of the trail located south of the end of Main Street near the South Sebastian County Historical Sites area. Section 4(f) protections are applicable because the Greenwood Walking Trail is publicly accessible and managed and used for recreational purposes.

Certain types of Section 4(f) impacts can be recognized as "*de minimus*", which means relatively minor. The intent of this evaluation is to demonstrate that project impacts to the trail will be relatively minor and therefore meet the *de minimis* impact determination conditions shown in **Table 1**.

Table 1	
When Can <i>De Minimis</i> Impact Determinations Be Made For Section 4(f) Properties?	Does It Apply To This Project?
Did we specially design the project to protect the trail as much as possible? Did we use mitigation and enhancement where it was suitable?	Yes
Did the officials with authority have a chance to consider this information and agree that the project will not greatly harm the characteristics that make the trail important?	Yes
Did the public have an opportunity to review and comment on the effects of the project on the trail and the characteristics that make it important to them?	Yes

### What is the proposed project?

ARDOT, in conjunction with the Federal Highway Administration and the City of Greenwood (City), is proposing Highway (Hwy.) 10 improvements to increase roadway capacity and connectivity. The improvements include adding travel and turn lanes, providing sidewalks and a shared-use path, replacing the existing Hwy 10 bridges at Heartsill Creek and Vache Grasse Creek, and extending the south end of Main Street to connect with the proposed new location roadway section. The project would require allowing for a future trail replacement under the Hwy. 10 bridge at Heartsill Creek and installing a pedestrian crossing at the south end of Main Street.

### Why is the Greenwood Walking Trail important?

The Greenwood Walking Trail is used for recreational walking and bicycling. It currently provides a semi-circular route around downtown Greenwood. The City intends to construct additional trail sections to ultimately provide a complete trail loop around downtown Greenwood and a spur to Greenwood Lake. Trail features include:

- Asphalt-paved trail (see **Figure 1**)
- South Sebastian County Historical Society Sites (See Figures 2 and 3)
- Heartsill and Vache Grasse Creeks and undeveloped green space (see Figure 4)



Figure 1



Figure 2



Figure 3



Figure 4

### **Can we avoid the trail?**

There are no feasible and prudent alternatives to replacing the existing Hwy. 10 bridges and extending the south end of Main Street to connect with the new location section.

### What will the project do to the trail?

The existing trail is within existing ARDOT right of way at the Hwy. 10 bridge over Heartsill Creek. This section of the trail will be closed during construction activities and approximately 55 linear feet of trail surface will require reconnection upon construction completion. ArDOT will ensure conditions at this location will allow the City to reconnect the trail following construction completion. The extension of the south end of Main Street will bifurcate the existing trail at the project's new location section. This section of the trail will also be closed during construction activities and will require a crosswalk and pedestrian safety signage upon construction completion.



Figure 5

**Figure 5** shows the sections of the Greenwood Walking Trail impacted by the proposed project. The following features correspond to the numbered locations on the figure:

- 1. Intersection of the Main Street Extension and the trail.
- 2. Existing trail underpass.
- 3. Proposed bridge replacement with trail underpass accommodation.
- 4. Proposed new location bridge with trail underpass accommodation.

Impacts resulting from project construction are described below.

#### Adverse Impacts

- The walking trail in the vicinity of the Hwy. 10 replacement bridge at Heartsill Creek and the south end of Main Street would be temporarily closed during construction. Approximately 55 linear feet of trail at the Hwy. 10 replacement trail will be removed.
- Noise levels will temporarily increase during construction activities.

### Beneficial Impacts

- Widening and otherwise improving the roadway will increase vehicular safety.
- Providing sidewalks and a shared-use path will increase pedestrian and bicyclist safety.
- A crosswalk and pedestrian safety signage will be provided at the trail crossing at the south end of Main Street.
- Provisions for future bridge underpasses will allow for the Greenwood Walking Trail to expand and connect with Greenwood Lake in the future.

### What did we do to reduce harm to the trail?

Coordination efforts between ARDOT and City officials began in May 2022. These efforts included consultation with the former and current Greenwood Parks and Recreation Department Directors to discuss potential Section 4(f) impacts. The following measures were included in the proposed project to reduce harm to the park:

- Trail impacts were minimized to the extent practicable and will only occur at the Hwy. 10 bridge at Heartsill Creek and the Main Street extension locations.
- Site conditions at the Hwy. bridge at Heartsill creek will allow the City to reconnect the trail following bridge replacement.
- A crosswalk and safety signage will be provided to allow trail users to cross the Main Street extension.
- Trail amenities including the South Sebastian County Historical Society Sites buildings, monuments, and green spaces outside of the construction zones will remain accessible if possible.
- Coordination with City officials about construction timing and temporary trail closures during construction will be ongoing.
- ARDOT Environmental Division personnel will assist the City with any trail reconnection activities requiring U.S. Army Corps and/or Arkansas Division of Environmental Quality involvement.
- The dimensions of both the new location section bridge and the replacement bridge at Vache Grasse Creek will be sufficient to accommodate a trail underpass. This will allow the City to construct a future trail connecting the Greenwood Walking Trail with Greenwood Lake.

### How did we involve the public in this evaluation?

A Draft Section 4(f) Evaluation document was included in the Environmental Assessment (EA) prepared for the proposed project. A Location and Design Public Hearing for the EA was held on April 27, 2023. The EA was available on the ARDOT website during the Hearing's 30-day public review and comment period.

The only public comment regarding the Greenwood Walking Trail received was a request to ensure a future trail underpass at the new location bridge at Vache Grasse Creek can be accommodated. Following the public comment period, the City requested the existing bridge replacement at Vache Grasse Creek also be able to accommodate a future trail underpass.

### What is the decision?

This evaluation concludes that the proposed project would not adversely affect the protected features, qualities, or activities that qualify the Greenwood Walking Trail for protection under Section 4(f), thus qualifying for a *de minimis* impact determination. The City's concurrence statement is included in Appendix A.

### **APPENDIX A**

### **CONCURRENCE STATEMENT**

#### **City of Greenwood**

We concur with the assessment and the proposed minimization and mitigation of impacts to the Greenwood Walking Trail as detailed in the Section 4(f) Evaluation and Documentation of De Minimis Findings to Section 4(f) Property for Public Parks, Recreation Lands, and Wildlife and Waterfowl Refuges.

Signature 0-00 Title 23 Date

### NOISE ASSESSMENT REPORT SCREENING LEVEL ANALYSIS ARDOT JOB 040762 P.E. 040861 HWY. 10. – HWY. 96 (GREENWOOD BYPASS) (S) 040862 HWY. 71 – COKER ST. (WIDENING) (GREENWOOD) (S)

#### Fundamentals of Sound and Noise

Noise is defined as unwanted or undesirable sound. The three basic parameters of how noise affects people are summarized below.

*Intensity* is determined by the level of sound expressed in units of decibels (dB). A 3 dB change in sound level is barely perceptible to most people in a common outdoor setting. However, a 5 dB increase presents a noticeable change and a 10 dB sound level increase is perceived to be twice as loud. Outdoor conversation at normal levels at a distance of 3 feet becomes difficult when the sound level exceeds the mid-60 dBA range.

*Frequency* is related to the tone or pitch of the sound. The amplification or attenuation of different frequencies of sound to correspond to the way the human ear "hears" these frequencies is referred to as "A-weighting." The A-weighted sound level in decibels is expressed as dBA.

*Variation* with time occurs because most noise fluctuates from moment to moment. A single level called the equivalent sound level (Leq) is used to compensate for this fluctuation. The Leq is a steady sound level containing the same amount of sound energy as the actual time-varying sound evaluated over the same time period. The  $L_{eq}$  averages the louder and quieter moments, but gives more weight to the louder moments.

For highway noise assessment purposes, Leq is typically evaluated over the worst 1-hour period and written as Leq(h). The Leq(h) commonly describes sound levels at locations of outdoor human use and activity, and reflects the conditions that will typically produce the worst traffic noise (e.g., the highest traffic volumes traveling at the highest possible speeds).

#### Noise Impact and Abatement Criteria

Traffic noise impacts are determined by comparing design year Leq(h) values to: (1) a set of Noise Abatement Criteria (NAC) for different land use categories; and (2) existing Leq(h) values. A noise impact occurs when design year (future build) levels approach or exceed the NAC value or a substantial increase in noise occurs. A substantial increase is defined as 10 dBA or greater than existing noise levels. ARDOT JOB 040762 Screening Level Noise Analysis ARDOT Job 040762 Page 2 of 5

A *noise sensitive receptor* (receptor) is defined as a representative location of a noise sensitive area for various land uses. Most receptors associated with highway traffic noise analysis are categorized as NAC Activity Category B (residential) and C (e.g., recreational areas, schools, places of worship). Since the NAC threshold for Activity Categories B and C is 67 dBA, the approach level is 66 dBA.

Consideration of noise abatement measures is required when the NAC threshold is approached or exceeded, when a substantial increase is predicted, and/or when receptors are identified within the screening analysis threshold. Noise barriers (e.g., walls or berms) are the most common noise abatement measures.

#### Screening Level Noise Analysis

A screening level noise analysis (screening analysis) may be performed for projects that are unlikely to cause noise impacts and/or where noise abatement measures are likely to be unfeasible for acoustical or engineering reasons. Factors common to these types of projects include low traffic volumes, slower speeds, the presence of few or no receptors, and the need for roadway access points (e.g., driveways, intersections, Main Street scenarios, etc.).

Screening analysis results represent a worst-case scenario with higher sound levels than would be expected in detailed modeling, and may be used to determine the need for detailed analysis if noise impacts are likely and the placement of noise barriers is feasible. It may also be used for projects that lack receptors in order to assess impacts on undeveloped land.

The FHWA Traffic Noise Model Version 2.5 (TNM) software program is used to predict existing and future Leq(h) traffic noise levels. The TNM straight line model uses the existing year and design year traffic and roadway information. Receivers (discrete points modeled in the TNM program) are incrementally placed away from the roadway centerline to determine the distance to which impacts extend. The model assumes that the roadway and receivers were located at the same elevation with no intervening barriers such as topography or dense vegetation.

### **Project Evaluation and Screening Analysis Results**

Activity Category B and C receptors were identified along the proposed project corridor. A screening analysis was therefore considered the appropriate first step for assessing potential noise impacts resulting from the proposed project.

TNM modeling was completed using the existing year 2023 and design year 2043 (future build) traffic and roadway information. Receivers were extended from the centerlines of the proposed project to distances correlating to approximately 66 dBA for existing and future conditions to determine potential impacts. The tenth value was used for rounding the decibel levels (e.g., 65.7 dBA reported as 66 dBA). The model calculation tables and input data are attached. The predicted noise impact and screening analysis distances are shown on the attached figures and summarized below.

It should be noted that this noise assessment report provides TNM modeling results for both Jobs 040861 and 040862, which comprise Job 040762. Jobs 040861 and 040862 were modeled separately due to differences in the proposed roadway widths.

As shown on the attached figures, approximately 11 receptors were predicted to experience noise impacts within distances ranging from 55 to 65 feet under future build conditions. However, approximately six of these were predicted to currently be experiencing impacts under existing conditions. Approximately 24 receptors were predicted to experience noise levels increases between 63 and 65 dBA and therefore within the screening level threshold.

Noise level increases between existing and proposed conditions were predicted to be minor in accordance with the ARDOT noise policy ( $\geq$  1 to 2 dBA). No substantial increases ( $\geq$  10 dBA) were predicted. Noise mitigation would not be feasible due to the presence of driveways and intersections along the proposed route. A detailed noise analysis is therefore not necessary for this project.

### Planning Information for Local Officials

The ARDOT encourages local communities and developers to practice noise compatibility planning. As presented in **Table 1** and **Table 2**, noise level predictions for future build conditions were made at incremental distances. As previously described, Activity Category B and C exterior areas would be impacted within a distance of approximately 55 feet and 65 feet from the centerlines of the proposed project. These predictions do not represent noise levels at every location at a particular distance back from the roadway. Noise levels will vary with changes in terrain and other site conditions.

### Table 1. Noise Levels for Compatibility Planning

Distance (ft)*	Leq(h), dBA**
55	66
100	63
150	61
200	58
300	55
500	49

\* Perpendicular to Job 040861 centerline

\*\* Rounded to tenth value

#### Table 2. Noise Levels for Compatibility Planning

Distance (ft)*	Leq(h), dBA**
65	66
100	64
125	63
175	61
200	60
300	56
500	49

\* Perpendicular to centerline Job 040862 centerline

\*\* Rounded to tenth value

**Table 3** presents the NAC. This information is included to inform local officials and planners of anticipated noise levels so that future development will be compatible. In compliance with federal guidelines, a copy of this screening analysis will be transmitted to the City of Greenwood and the Frontier Metropolitan Planning Organization for land use planning purposes.

Activity Category	L <sub>eq(h)</sub> dBA	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B*	67	Exterior	Residential properties.
C*	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structure, radio stations, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structure, radio studios, recording studios, schools, and television studios.
E*	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D, or F.
F			Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G			Undeveloped lands that are not permitted.

\* Includes undeveloped lands permitted for this activity category.

ARDOT JOB 040762									Finding of N	o Significar	it Impac	xt I	<b>D</b> -6
RESULTS: SOUND LEVELS							Job 04086	1					
ARDOT							9 January	2023					
M.Pearson							TNM 2.5						
							Calculate	d with TNN	1 2.5				
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:		Job <mark>04</mark>	)86 <mark>1</mark>										
RUN:		EXISTI	NG										
BARRIER DESIGN:		INPUT	HEIGHTS					Average	pavement type	shall be use	d unless	5	
				3				a State hi	ghway agency	/ substantiate	es the us	se	
ATMOSPHERICS:		68 deg	F, 50% RH					of a diffe	rent type with	approval of F	HWA.		
Receiver													
Name	No.	#DUs	Existing	No Barrier					With Barrier				
			LAeg1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Redu	ction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calcu	lated
		1					Sub'l Inc					minu	s
		1						1			1	Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
25	1	1	0.0	68.8	3 66	68.8	3 10	Snd Lvl	68.8	0.0	)	8	-8.0
45	2	2 1	0.0	65.9	66	65.9	10	)	65.9	0.0	)	8	-8.0
75	3	3 1	0.0	63.4	1 66	63.4	¥ 10	)	63.4	0.0	)	8	-8.0
100	4	1	0.0	62.0	66	62.0	10	)	62.0	0.0	)	8	-8,0
125	5	5 1	0.0	60.8	3 66	60.8	3 10	) <del>,</del>	60.8	0.0	)	8	-8.0
150	6	6 1	0.0	59.3	66	59.3	3 10	)	59.3	0.0	)	8	-8.0
175	7	' 1	0.0	57.5	5 66	57.5	5 10	)	57,5	0.0	)	8	-8.0
200	9	) 1	0.0	56.0	66	56.0	) 10	)	56.0	0.0	)	8	-8.0
225	10	) 1	0.0	54.6	66	54.6	5 10		54.6	0.0	)	8	-8.0
250	11	1	0.0	53.5	5 66	53.5	5 10	)	53.5	0.0	)	8	-8,0
275	12	! 1	0.0	52.4	4 66	52.4	1 10	) <del></del>	52.4	0.0	)	8	-8.(
300	13	3 1	0.0	51.4	1 66	51.4	10	)	51.4	0.0	)	8	-8.0
325	14	1	0.0	50.6	66	50.6	5 10	) ()	50.6	0.0	)	8	-8.0
350	15	5 1	0.0	49.8	3 66	i 49.8	3 10	) ()	49.8	0.0	)	8	-8.0
400	16	6 1	0.0	48.3	66	48.3	3 10	)	48.3	0.0	)	8	-8.0
500	17	1	0.0	46.0	66	46.0	10	)	46.0	0.0	)	8	-8.0
Dwelling Units		# DUs	Noise Re	duction									
			Min	Avg	Max	1							
			dB	dB	dB	]							
All Selected		16	0.0	0.0	0.0	1							
All Impacted		1	0.0	0.0	0.0								
All that meet NR Goal		0	0.0	0.0	0.0	0							

ARDOT JOB 040762									Finding of N	o Significan	t Impact	D-7
RESULTS: SOUND LEVELS							Job 040861	1				
ARDOT							9 January	2023				
M.Pearson							TNM 2.5					
							Calculated	d with TNN	2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		Job <mark>040</mark>	0861									
RUN:		PROPC	SED									
BARRIER DESIGN:		INPUT	HEIGHTS					Average p	pavement type	e shall be use	d unless	
								a State hi	ghway agency	y substantiate	es the use	
ATMOSPHERICS:		68 deg	F, 50% RH					of a differ	ent type with	approval of F	HWA.	
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
55	1	1	0.0	66.2	66	66.2	10	Snd Lvl	66.2	0.0	Ę	-8.0
75	2	: 1	0.0	64.6	66	64.6	10	(70000)	64.6	0.0	۶ ۲	3 -8.0
100	3	1	0.0	<mark>63.1</mark>	66	63.1	10		63.1	0.0	) <b>8</b>	3 -8.0
125	4	. 1	0.0	62.0	66	62.0	10	1.00000	62.0	0.0	3	3 -8.0
150	5	1	0.0	61.0	66	61.0	10	( <del>317-13</del> )	61.0	0.0	3	3 -8.0
175	6	1	0.0	60.1	66	60.1	10		60.1	0.0	3	3 -8.0
200	7	1	0.0	59.3	66	59.3	10		59.3	0.0		-8.0
225	9	1	0.0	58.6	66	58.6	10		58.6	0.0		3 -8.0
250	10	1	0.0	57.5	66	57.5	10		57.5	0.0		3 -8.0
275	11	1	0.0	56.3	66	56.3	10		56.3	0.0	8	-8.0
300	12	: 1	0.0	55.2	66	55.2	10	( <del>1886)</del> )	55.2	0.0		3 -8.0
400	13	1	0.0	51.6	66	51.6	10	( <del>) () (</del>	51.6	0.0		3 -8.0
500	14	1	0.0	48.9	66	48.9	10		48.9	0.0	3	3 -8.0
Dwelling Units		# DUs	Noise Red	duction								
			Min	Avg	Max							
			dB	dB	dB	1						
All Selected		13	0.0	0.0	0.0							
All Impacted		1	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

ARDOT JOB 040762									Finding of N	lo Significar	nt Impac	t D-8
RESULTS: SOUND LEVELS							Job 04086	2				
ARDOT							2 Novemb	oer 2022				
M.Pearson							TNM 2.5					
							Calculate	d with TNN	1 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		Job 04	0862									
RUN:		EXISTI	NG									
BARRIER DESIGN:		INPUT	HEIGHTS					Average (	pavement type	e shall be use	d unless	
								a State hi	ghway agenc	y substantiate	es the us	e
ATMOSPHERICS:		68 deg	F, <b>50% RH</b>	l				of a diffe	rent type with	approval of F	HWA.	
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc	1	1			minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
25	1	1	0.0	69.4	66	69.4	1 10	Snd Lvl	69.4	0.0	1	8 -8.0
50	2	2 1	0.0	66.1	66	66.1	1 10	) Snd Lvl	66.1	0.0	)	8 -8.0
75	3	3 1	0.0	64.2	2 66	64.2	2 10	)	64.2	2 0.0	)	8 -8.0
100	4	۱ I	0.0	62.7	66	62.7	10	) *****	62.7	0.0	)	8 -8.0
125	5	5 1	0.0	60.5	5 66	60.5	5 10	)	60.5	5 O.C	)	8 -8.0
150	6	6 1	0.0	58.5	5 66	58.5	5 10		58.5	0.0		8 -8.0
175	7	' 1	0.0	56.8	8 66	56.8	3 10	)	56.8	B 0.0	)	8 -8.0
200	9	) 1	0.0	55.3	66	55.3	3 10	)	55.3	0.0		8 -8 0
225	10	) 1	0.0	54.1	66	5 54.1	1 10		54.1	0.0		8 -8.0
250	11	1	0.0	52.9	9 66	52.9	10	)	52.9	0.0		8 -8.0
275	12	2 1	0.0	51.9	66	5 51.9	9 10		51.9	0.0		8 -8.0
300	13	3 1	0.0	51.0	66	5 51.0	10		51.0	0.0		8 -8.0
325	14	- 1	0.0	50.2	2 66	5 50.2	2 10		50.2	0.0		8 -8.
350	15	5 1	0.0	49.4	66	49.4			49.4			0 -0.0
400	16	5 1	0.0	48.7	66	48,			48,1	0.0		0 -0,1
500	1/	1	0.0	45.9	6	45.8			45,8	0.0	1	0 -0,
Dwelling Units		# DUs	Noise Re	duction								
			Min	Avg	Max							
			dB	dB	dB	=						
All Selected		16	0.0	0.0	0.0							
All Impacted		2	2 0.0	0.0	0.0	0						
All that meet NR Goal		C	0.0	0.0	0.0							

ARDOT JO	DB 040762
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RESULTS: SOUND LEVELS							Job 040862	2				
ARDOT							10 Januar	v 2023				
M.Pearson							TNM 2.5	-				
							Calculate	d with TNN	1 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		Job 04	0862									
RUN:		PROPC	SED									
BARRIER DESIGN:		INPUT	HEIGHTS					Average p	pavement type	shall be use	d unless	
								a State hi	ghway agency	/ substantiate	es the use	
ATMOSPHERICS:		68 deg	F, 50% RH					of a differ	ent type with	approval of F	HWA.	
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc		3			minus
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
				UDA	UDA				UDA			
50	1	1	0.0	67.3	66	67.3	10	Sha LVI	67.3	0.0		8 -8.0
65	2	1	0.0	66.0	66	66.0	10	Sha LVI	66.0	0.0		8 -8.0
100	3	1	0.0	63.8	6 66	63.8	10		63.8	0.0		o -o.u
125	4	1	0.0	62.6	66	62.6	10		62.6	0.0		8 -0.0
150	5	1	0.0	61.6		01.0	10		61.0	0.0		o -0.0
1/5	6		0.0	60.7	00	50.7 50.7	10		50.7	0.0		o -0.0
200	1	1	0.0	59.9		59.5	10	0908	59.9	0.0		
225	9	1	0.0	59.2	60	59.2	10		59.2	0.0		o -o.u
300	10	1	0.0	52.0		52 0	10		53.0	0.0		8 _8 (
350	10	1	0.0	50.8		50.5	10	154402	52.3	0.0		8 _8 (
400	12	1	0.0	JZ.Z	66	32.2	10		19 4	0.0		8 -8(
500	13		0.0	45.4		45.4		l	-3	0.0	1	0
Dwelling Units		# DUs	Noise Red	duction	Max							
			WIIN dB	AVG	dB							
			UB		UD							
All Selected		12	0.0	0.0	0.0							
All Impacted		2	0,0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

#### NOISE DATA WORKSHEET

Job No: 040861												
Job Name: Hwy. 10-Hwy	. 96 (Greer	าwood Bypa	ass)									
Roadway Reference:	Hwy. 10_9	6			]							
County: Arkansas		]										
Design Year:	2043	]										
Year(s) To Be Modeled: [	2023	2043	]									
Roadway Cross-Sections: 2 12' lanes 2 5' shoulder			total wid	th '= 34	]	Note:	DHV = (Al	DT)(K)				
2023 EXISTING				SIT	E 1	DDHV = (ADT)(K K - Percent of AD			ADT)(K)(D) t of ADT occ	ט) occuring in design hour		
							J		D - Directio	onal Distribut	tion	
Operating Speed: 45							Kfactor	10%				
Traffic Data:			YEAR	ADT	%TRUCK	DHV	CARS	МТ	НТ	CARS/2	MT/2	HT/2
								10%	90%			
							0	0	0	0	0	0
			2023	5,500	4%	550	528	2	20	264	1	10

#### NOISE DATA WORKSHEET

Job No: 040861											
Job Name: Hwy. 10-Hwy. 96 (Gre	enwood Byp	ass)									
Roadway Reference: Hwy. 10	_96			]							
County: Arkansas											
Design Year: 2043											
Year(s) To Be Modeled: 2023	2043										
Roadway Cross-Sections:				total wid	th '= 58	]	Note:	DHV = (Al DDHV = (J	DT)(K) ADT)(K)(D)		
	PROPOSE	PROPOSED SITE 1					K - Percent of ADT occuring in design hour				
Operating Speed:	45					Kfactor	10%	D - Directio	onal Distribut	lion	
Traffic Data:		YEAR	ADT	%TRUCK	DHV	CARS	МТ	HT	CARS/2	MT/2	HT/2
						0	10%	90%	-		
		2042	7 200	40/	700	0	0	0	0	0	12
		2043	7,200	4 70	120	091	3	20	340	I	13

#### NOISE DATA WORKSHEET

Job No: 040862											
Job Name: Hwy. 71-Coker St. (Widening) (Greenwood)											
Roadway Reference: Hwy. 10				]							
County: Arkansas	]										
Design Year: 2043	]										
Year(s) To Be Modeled: 2023	2043	]									
Roadway Cross-Sections:				total wid	lth '= 58	]	Note:	DHV = (A	DT)(K)		
	2043	PROPOSE	D			1		DDHV = ( K - Percen	ADT)(K)(D) it of ADT occ	uring in de	sign hour
						-		D - Directio	onal Distribut	tion	-
Operating Speed:		45				Kfactor	9%				
Traffic Data:		YEAR	ADT	%TRUCK	DHV	CARS	МТ	HT	CARS/2	MT/2	HT/2
							10%	90%			
						0	0	0	0	0	0
		2043	10,000	3%	900	873	3	24	437	1	12











ARDOT JOB 040762



Finding of No Significant Impact

## United States Department of the Interior

#### FISH AND WILDLIFE SERVICE

Arkansas Ecological Service Field Office 110 South Amity Road, Suite 300 Conway, Arkansas 72032

May 31, 2023

Consultation Code: 2022-0061536

Mr. John Fleming c/o Matt Schrum Arkansas Department of Transportation 10324 Interstate 30 Little Rock, Arkansas 72209

Dear Mr. Fleming:

The U.S. Fish and Wildlife Service (Service) has reviewed your request, assessment, and determinations for Arkansas Department of Transportation (ARDOT) Job 040762 Greenwood Bypass P.E. (Jobs 040861 and 040862), Sebastian County, Arkansas. We received your request on May 26, 2023.

ARDOT made the following assessment and determination:

ARDOT proposes to construct a bypass on new location around downtown Greenwood, Arkansas between Hwys. 96 and 10. The bypass will be 5 lanes wide, with shoulders and clear zones varying between 38-58' wide. The bypass will include construction of 3 bridges on new location and replacement of 2 existing bridges along Hwy. 10.

The official species list obtained from the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation identified the following endangered and threatened species as potentially occurring within the project boundaries; the endangered Indiana Bat (*Myotis sodalis*), the endangered Northern Long-eared Bat (*Myotis septentrionalis*), the proposed endangered Tricolored Bat (*Perimyotis subflavus*), the threatened Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*), the threatened Piping Plover (Charadrius melodus), the threatened Red Knot (*Calidris canutus rufa*), the proposed threatened Alligator Snapping Turtle (*Macrochelys temmicnkii*), the threatened American Burying Beetle (*Nicrophorus americanus*), and the candidate Monarch Butterfly (*Danaus plexippus*).

The "Arkansas Field Office Arkansas Multi-Species Determination Key", "FHWA, FRA, FTA Programmatic Consultation for Transportation Projects affecting NLEB or Indiana Bat", "Northern Long-eared Bat Rangewide Determination Key", and "American Burying Beetle Consultation and 4(d) Rule Consistency" determination keys were evaluated for this project via IPaC. See the attached USFWS MA Verification and Concurrence Letters. ILDLIFE

#### Mr. John Fleming

"May affect, not likely to adversely to effect" (NLAA) determinations were given for Northern Long-eared Bat, Eastern Black Rail, Piping Plover, and Red Knot.

ARDOT contests the NLAA determinations for Piping Plover and Red Knot as there is no large river or lake shoreline or mud/sand flats in the project area. We propose a "no effect" determinations for these two species.

The project was found to be outside of the scope of the "FHWA, FRA, FTA Programmatic Consultation for Transportation Projects affecting NLEB or Indiana Bat" due to the removal of suitable habitat beyond 300' from existing road. The project would remove approximately 12.59 acres of suitable Indiana Bat roosting and foraging habitat, including 1.94 acres 0-100' from existing road, 2.67 acres 100-300' from existing road, and 7.98 acres >300' from existing road. The nearest AR occurrence record (approximately 34 Miles NE) is from a roost tree in the Boston Mountains Ranger District – Ozark NF (ANHC 2021). The November 2023, letting date allows for an inactive season clearing restriction, which will be placed on this job. Special Provisions included on the job contract will include Off-site Restraining Conditions for Indiana & Northern Long-eared Bats, Special Clearing, and Water Pollution Control. Due to the timing of clearing during the inactive season, the distance to known occurrence records, and the implementation of BMPs to reduce impacts to bats, ARDOT proposes a NLAA determination for Indiana Bat.

ARDOT has determined that this project "may affect, but is not likely to adversely affect" the Alligator Snapping Turtle, as there is perennial stream and wetland habitat in the project area. This project will not jeopardize the continued existence of the Alligator Snapping Turtle and Tricolored Bat.

The American Burying Beetle Final 4(d) Rule applies to the project's activities that have the potential to affect American Burying Beetles. The Final 4(d) Rule exempts the incidental take of American Burying Beetles from take prohibitions in the Endangered Species Act. The exemptions apply as long as the activities do not occur on certain conservation lands in the Southern Plains Analysis Areas. Within Arkansas, these conservation lands are entirely within the existing boundaries of Fort Chaffee. This project occurs outside of the existing boundaries of Fort Chaffee; therefore, the project can proceed without restrictions.

The Monarch Butterfly is a candidate species and as such, is not federally protected under the Endangered Species Act. However, the USFWS recommends agencies implement conservation measures for candidate species in action areas, as these are species, by definition, that may warrant future protection under the Act. ARDOT will plant native wildflowers after construction as a conservation measure. This project will not jeopardize the continued existence of the Monarch Butterfly. 2
This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on May 26, 2023, for this project. Based upon your IPaC submission and a standing analysis completed by the Service, your project has reached the determination of "may affect, not likely to adversely affect" the Northern Long-eared Bat.

As stated in the IPaC Consistency Letter, the Service concurs with the "no effect", "not likely to adversely affect" and supplemental determination(s) for the listed species identified. No further consultation for this project is required for these species.

The verification letter confirms you may rely on effect determinations provided in the Arkansas Determination Key for project review and guidance for federally listed species to satisfy agency consultation requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.; ESA)."

The American Burying Beetle Final 4(d) Rule applies to the project's activities that have the potential to affect American Burying Beetles. The Final 4(d) Rule exempts the incidental take of American Burying Beetles from take prohibitions in the ESA. The exemptions apply as long as the activities do not occur on certain conservation lands in the Southern Plans Analysis Areas. Within Arkansas, these conservation lands are entirely within the existing boundaries of Fort Chaffee. This project occurs outside of the existing boundaries of Fort Chaffee; therefore, the project can proceed without restrictions.

Furthermore, due to the location of the area being affected having limited suitable, an inactive season clearing restriction, the distance to known species locations, the lack of caves and other karst features in or near the project area, the low potential for water quality impacts, and the implementation of BMPs, the Service concurs with your determination of "may affect, but is not likely to adversely affect" for the Indiana Bat.

The Service has no additional comments or concerns and agrees with the assessment, determinations, and concurrences made by ARDOT and through the Northern Long-eared Bat Determination Key in addition to the "no effect" and non-jeopardy determinations for all other listed and proposed species identified. In addition, the Service concurs with the supplemental determinations of "may affect, but is not likely to adversely affect" for Piping Plover and Red Knot.

For further assistance or if you have any questions, please contact Lindsey Lewis at (501) 513-4489 or lindsey\_lewis@fws.gov.

Sincerely, Me Tol

Melvin L. Tobin Field Supervisor

3

cc: Project File Read File

Filename: https://doimspp-

my.sharepoint.com/personal/lindsey\_lewis\_fws\_gov/Documents/Documents/PROJECTS/FY2023/ARDO T/ARDOT Job 040762 Greenwood Bypass P.E. (Jobs 040861 and 040862)/20230530\_Ltr\_ARDOT Job 040762\_Concurrence\_LCL.docx

4



## United States Department of the Interior

FISH AND WILDLIFE SERVICE Arkansas Ecological Services Field Office 110 South Amity Suite 300 Conway, AR 72032-8975 Phone: (501) 513-4470 Fax: (501) 513-4480



In Reply Refer To: Project Code: 2022-0014289 Project Name: 040861 - Hwy. 10 - Hwy. 96 (Greenwood Bypass) (S) May 26, 2023

## Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

#### http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

**Migratory Birds**: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/ executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office. ARDOT JOB 040762 05/26/2023

#### Attachment(s):

Official Species List

## **OFFICIAL SPECIES LIST**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

#### **Arkansas Ecological Services Field Office**

110 South Amity Suite 300 Conway, AR 72032-8975 (501) 513-4470

#### **PROJECT SUMMARY**

Project Code:	2022-0014289
Project Name:	040861 - Hwy. 10 - Hwy. 96 (Greenwood Bypass) (S)
Project Type:	Road/Hwy - New Construction
Project Description:	This project is the eastern portion of a bypass to be built around the city of
	Greenwood AR, along Highway, between Coker Street and the current
	intersection with Hwy. 96.

Project Location:

The approximate location of the project can be viewed in Google Maps: <u>https://www.google.com/maps/@35.2091475,-94.25579493563194,14z</u>



Counties: Sebastian County, Arkansas

#### **ENDANGERED SPECIES ACT SPECIES**

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

#### MAMMALS

NAME	STATUS
Indiana Bat Myotis sodalis	Endangered
There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.	
Species profile: <u>https://ecos.fws.gov/ecp/species/5949</u>	
Northern Long-eared Bat <i>Myotis septentrionalis</i>	Endangered
No critical habitat has been designated for this species.	
Species profile: <u>https://ecos.fws.gov/ecp/species/9045</u>	
Tricolored Bat <i>Perimyotis subflavus</i>	Proposed
No critical habitat has been designated for this species.	Endangered
Species profile: https://ecos.fws.gov/ecp/species/10515	0

#### **BIRDS**

NAME	STATUS
Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/10477</u>	Threatened
<ul> <li>Piping Plover Charadrius melodus</li> <li>Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.</li> <li>There is final critical habitat for this species. Your location does not overlap the critical habitat.</li> <li>Species profile: <a href="https://ecos.fws.gov/ecp/species/6039">https://ecos.fws.gov/ecp/species/6039</a></li> </ul>	Threatened
Red Knot <i>Calidris canutus rufa</i> There is <b>proposed</b> critical habitat for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/1864</u>	Threatened
REPTILES NAME	STATUS
Alligator Snapping Turtle Macrochelys temminckii No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	Proposed Threatened
INSECTS NAME	STATUS
American Burying Beetle <i>Nicrophorus americanus</i> Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/66</u>	Threatened
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/9743</u>	Candidate
CRITICAL HABITATS	

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

#### **IPAC USER CONTACT INFORMATION**

- Agency:Arkansas Department of TransportationName:Matthew SchrumAddress:10324 I30City:Little RockState:ARZip:72209Emailmatthew.schrum@ardot.gov
- Phone: 5015692083



## United States Department of the Interior

FISH AND WILDLIFE SERVICE Arkansas Ecological Services Field Office 110 South Amity Suite 300 Conway, AR 72032-8975 Phone: (501) 513-4470 Fax: (501) 513-4480



In Reply Refer To: Project Code: 2022-0019434 Project Name: 040862 - Hwy. 71-Coker St. (Widening) (Greenwood) (S) May 26, 2023

## Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

#### http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

**Migratory Birds**: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/ executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office. ARDOT JOB 040762 05/26/2023

#### Attachment(s):

Official Species List

## **OFFICIAL SPECIES LIST**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

#### **Arkansas Ecological Services Field Office**

110 South Amity Suite 300 Conway, AR 72032-8975 (501) 513-4470

#### **PROJECT SUMMARY**

Project Code:	2022-0019434
Project Name:	040862 - Hwy. 71-Coker St. (Widening) (Greenwood) (S)
Project Type:	Road/Hwy - New Construction
Project Description:	This project will be the construction of the western part of a bypass
	around the city of Greenwood AR, along state highway 10, from Hwy. 71
	to Coker St. in Greenwood.

#### Project Location:

The approximate location of the project can be viewed in Google Maps: <u>https://www.google.com/maps/@35.2053049,-94.26783033709793,14z</u>



Counties: Sebastian County, Arkansas

#### **ENDANGERED SPECIES ACT SPECIES**

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

#### MAMMALS

NAME	STATUS
Indiana Bat Myotis sodalis	Endangered
There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat.	
Species profile: <u>https://ecos.fws.gov/ecp/species/5949</u>	
Northern Long-eared Bat <i>Myotis septentrionalis</i>	Endangered
No critical habitat has been designated for this species.	
Species profile: <u>https://ecos.fws.gov/ecp/species/9045</u>	
Tricolored Bat <i>Perimyotis subflavus</i>	Proposed
No critical habitat has been designated for this species.	Endangered
Species profile: https://ecos.fws.gov/ecp/species/10515	0

#### **BIRDS**

NAME	STATUS
Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/10477</u>	Threatened
<ul> <li>Piping Plover Charadrius melodus</li> <li>Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.</li> <li>There is final critical habitat for this species. Your location does not overlap the critical habitat.</li> <li>Species profile: <a href="https://ecos.fws.gov/ecp/species/6039">https://ecos.fws.gov/ecp/species/6039</a></li> </ul>	Threatened
Red Knot <i>Calidris canutus rufa</i> There is <b>proposed</b> critical habitat for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/1864</u>	Threatened
REPTILES	STATUS
Alligator Snapping Turtle <i>Macrochelys temminckii</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/4658</u>	Proposed Threatened
INSECTS NAME	STATUS
American Burying Beetle <i>Nicrophorus americanus</i> Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/66</u>	Threatened
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/9743</u>	Candidate
CRITICAL HABITATS	

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

#### **IPAC USER CONTACT INFORMATION**

Agency:Arkansas Department of TransportationName:Matthew SchrumAddress:10324 I30City:Little RockState:ARZip:72209Emailmatthew.schrum@ardot.govPhone:5015692083

#### LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration

ARDOT JOB 040762



Finding of No Significant Impact

## United States Department of the Interior

#### FISH AND WILDLIFE SERVICE

Arkansas Ecological Service Field Office 110 South Amity Road, Suite 300 Conway, Arkansas 72032

June 21, 2023

Consultation Code: 2022-0061536

Mr. John Fleming c/o Matt Schrum Arkansas Department of Transportation 10324 Interstate 30 Little Rock, Arkansas 72209

Dear Mr. Fleming:

The U.S. Fish and Wildlife Service (Service) has reviewed your request, assessment, and determinations for Arkansas Department of Transportation (ARDOT) Job 040762 Greenwood Bypass P.E. (Jobs 040861 and 040862), Sebastian County, Arkansas. We received your request on June 15, 2023.

ARDOT made the following assessment and determination:

ARDOT proposes to construct a bypass on new location around downtown Greenwood, Arkansas between Hwys. 96 and 10. The bypass will be 5 lanes wide, with shoulders and clear zones varying between 38-58' wide. The bypass will include construction of 3 bridges on new location and replacement of 2 existing bridges along Hwy. 10.

The official species list obtained from the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation System identified the following endangered and threatened species as potentially occurring within the project boundaries; the endangered Indiana Bat (*Myotis sodalis*), the endangered Northern Long-eared Bat (*Myotis septentrionalis*), the proposed endangered Tricolored Bat (*Perimyotis subflavus*), the threatened Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*), the threatened Piping Plover (Charadrius melodus), the threatened Red Knot (*Calidris canutus rufa*), the proposed threatened Alligator Snapping Turtle (*Macrochelys temmicnkii*), the threatened American Burying Beetle (*Nicrophorus americanus*), and the candidate Monarch Butterfly (*Danaus plexippus*).

The "Arkansas Field Office Arkansas Multi-Species Determination Key", "FHWA, FRA, FTA Programmatic Consultation for Transportation Projects affecting NLEB or Indiana Bat", "Northern Long-eared Bat Rangewide Determination Key", and "American Burying Beetle Consultation and 4(d) Rule Consistency" determination keys were evaluated for this project via IPaC. See the attached USFWS MA Verification and Concurrence Letters.

"May affect, not likely to adversely to effect" (NLAA) determinations were given for Northern Long-eared Bat, Eastern Black Rail, Piping Plover, and Red Knot.

ARDOT contests the NLAA determinations for Piping Plover and Red Knot as there is no large river or lake shoreline or mud/sand flats in the project area. We propose a "no effect" determinations for these two species.

The project was found to be outside of the scope of the "FHWA, FRA, FTA Programmatic Consultation for Transportation Projects affecting NLEB or Indiana Bat" due to the removal of suitable habitat beyond 300' from existing road. The project would remove approximately 12.59 acres of suitable Indiana Bat roosting and foraging habitat, including 1.94 acres 0-100' from existing road, 2.67 acres 100-300' from existing road, and 7.98 acres >300' from existing road. The nearest Arkansas occurrence record (approximately 34 Miles NE) is from a roost tree in the Boston Mountains Ranger District – Ozark NF (ANHC 2021). Special Provisions included on the job contract will include Off-site Restraining Conditions for Indiana & Northern Long-eared Bats, Special Clearing, and Water Pollution Control. Due to the timing of clearing during the inactive season, the distance to known occurrence records, and the implementation of BMPs to reduce impacts to bats, ARDOT proposes a NLAA determination for Indiana Bat

Supplemental: Following the negative acoustic survey results, we would like to remove the winter clearing restriction from the project. Due to the removal of habitat, we have determined that the project "may affect but not likely to adversely affect." (Indiana Bat and Northern Long-eared Bat) We ask for your concurrence in our determination.

ARDOT has determined that this project "may affect, but is not likely to adversely affect" the Alligator Snapping Turtle, as there is perennial stream and wetland habitat in the project area. This project will not jeopardize the continued existence of the Alligator Snapping Turtle and Tricolored Bat.

The American Burying Beetle Final 4(d) Rule applies to the project's activities that have the potential to affect American Burying Beetles. The Final 4(d) Rule exempts the incidental take of American Burying Beetles from take prohibitions in the Endangered Species Act. The exemptions apply as long as the activities do not occur on certain conservation lands in the Southern Plains Analysis Areas. Within Arkansas, these conservation lands are entirely within the existing boundaries of Fort Chaffee. This project occurs outside of the existing boundaries of Fort Chaffee; therefore, the project can proceed without restrictions.

The Monarch Butterfly is a candidate species and as such, is not federally protected under the Endangered Species Act. However, the USFWS recommends agencies implement conservation measures for candidate species in action areas, 2

as these are species, by definition, that may warrant future protection under the Act. ARDOT will plant native wildflowers after construction as a conservation measure. This project will not jeopardize the continued existence of the Monarch Butterfly.

This letter records your determination using the Information for Planning and Consultation (IPaC) System provided to the U.S. Fish and Wildlife Service (Service) on May 26, 2023, for this project. Based upon your IPaC submission and a standing analysis completed by the Service, your project has reached the determination of "may affect, not likely to adversely affect" the Northern Long-eared Bat.

As stated in the IPaC Consistency Letter, the Service concurs with the "no effect", "not likely to adversely affect" and supplemental determination(s) for the listed species identified. No further consultation for this project is required for these species.

The verification letter confirms you may rely on effect determinations provided in the Arkansas Determination Key for project review and guidance for federally listed species to satisfy agency consultation requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.; ESA)."

The American Burying Beetle Final 4(d) Rule applies to the project's activities that have the potential to affect American Burying Beetles. The Final 4(d) Rule exempts the incidental take of American Burying Beetles from take prohibitions in the ESA. The exemptions apply as long as the activities do not occur on certain conservation lands in the Southern Plans Analysis Areas. Within Arkansas, these conservation lands are entirely within the existing boundaries of Fort Chaffee. This project occurs outside of the existing boundaries of Fort Chaffee; therefore, the project can proceed without restrictions.

Furthermore, due to the location of the area being affected having limited suitable, negative survey results, the distance to known species locations, the lack of caves and other karst features in or near the project area, the low potential for water quality impacts, and the implementation of best management practices (BMPs), the Service concurs with your determination of "may affect, but is not likely to adversely affect" for the Indiana Bat.

The Service has no additional comments or concerns and agrees with the assessment, determinations, and concurrences made by ARDOT and through the Northern Long-eared Bat Determination Key in addition to the "no effect" and non-jeopardy determinations for all other

3

listed and proposed species identified. In addition, the Service concurs with the supplemental determinations of "may affect, but is not likely to adversely affect" for Piping Plover and Red Knot.

For further assistance or if you have any questions, please contact Lindsey Lewis at (501) 513-4489 or lindsey\_lewis@fws.gov.

Sincerely,

Melvin L. Tobin Field Supervisor

cc: Project File Read File

Filename: https://doimspp-

my.sharepoint.com/personal/lindsey\_lewis\_fws\_gov/Documents/Documents/PROJECTS/FY2023/ARDO T/ARDOT Job 040762 Greenwood Bypass P.E. (Jobs 040861 and 040862)/20230530\_Ltr\_ARDOT Job 040762\_Concurrence\_LCL.docx

## Appendix F – SHPO AND TRIBAL HPO COORDINATION





Asa Hutchinson Governor Stacy Hurst Secretary

November 15, 2022

Mr. John Fleming Division Head Environmental Division Arkansas Department of Transportation P.O. Box 2261 Little Rock, AR 72203-2261

RE: Sebastian County: Greenwood Section 106 Review: FHwA Proposed Undertaking: Hwy. 10 – Hwy. 96 (Greenwood Bypass) (S) Route 10, Section 0 ARDOT Job Number: 040861 AHPP Tracking Number: 109693.01

Dear Mr. Fleming:

The staff of the Arkansas Historic Preservation Program (AHPP) reviewed the environmental assessment for the above referenced undertaking in Section 12, Township 6 North, Range 31 West in Sebastian County, Arkansas. The proposed undertaking entails the widening of 0.168 miles of Hwy. 10 between S. Fowler St. and Coker St., the replacement of ARDOT Bridges A0424 and A0425, and building 0.93 miles of a five-lane bypass with a center turn lane.

An architectural resources survey recorded nineteen properties along the project area. There is one known historic structure (SB0400) listed on the National Register of Historic Places (NRHP) near the project area. A total of 206 shovel tests were excavated within the area of potential effect (APE), all of which were negative for cultural materials.

Based on the provided information, the AHPP concurs that there will be no adverse effect to historic properties pursuant to 36 CFR § 800.5(b)(1) as a result of this undertaking.

Tribes that have expressed an interest in the area include the Caddo Nation, the Cherokee Nation, the Chickasaw Nation, the Choctaw Nation of Oklahoma, the Muscogee (Creek) Nation, the Osage Nation, the Quapaw Nation, and the Shawnee Tribe. We recommend consultation in accordance with 36 CFR § 800.2(c)(2).

Thank you for the opportunity to review this undertaking. Please refer to the AHPP Tracking Number listed above in all correspondence. If you have any questions, call Kathryn Bryles at 501-324-9784 or email kathryn.bryles@arkansas.gov.

Sincerely, Digitally signed by Kathryr Kathryn Bryles Date: 2022.11.15 15:06:34 06'00 for Scott Kaufman Director, AHPP

cc: Dr. Melissa Zabecki, Arkansas Archeological Survey Mr. Randal Looney, Federal Highway Administration

> Arkansas Historic Preservation Program 1100 North Street • Little Rock, AR 72201 • 501.324.9150 ArkansasPreservation.com





Asa Hutchinson Governor Stacy Hurst Secretary

April 7, 2022

Mr. John Fleming Division Head Environmental Division Arkansas Department of Transportation P.O. Box 2261 Little Rock, AR 72203-2261

RE: Sebastian County: General Section 106 Review: FHwA Proposed Undertaking: Hwy. 71 – Coker St. (Widening) (Greenwood) (S) Route 10, Section 0 ARDOT Job Number: 040862 AHPP Tracking Number: 109624

Dear Mr. Fleming:

The staff of the Arkansas Historic Preservation Program (AHPP) reviewed the project identification form for the above referenced undertaking in Sebastian County, Arkansas. The proposed undertaking entails the widening of Highway 10 t five lanes. The total proposed right-of-way surveyed was 14.2 acres and the total TCE surveyed was 2.5 acres.

No archeological sites are recorded in or near the project location. A total of 137 shovel tests were excavated within the APE, all of which were negative for cultural materials.

Based on the provided information, the AHPP concurs with the finding of **no historic properties affected pursuant to 36 CFR § 800.4(d)(1)** for the proposed undertaking and that no further archeological work is needed.

Tribes that have expressed an interest in the area include the Caddo Nation, the Cherokee Nation, the Chickasaw Nation, the Choctaw Nation of Oklahoma, the Muscogee (Creek) Nation, the Osage Nation, the Quapaw Nation, and the Shawnee Tribe. We recommend consultation in accordance with 36 CFR § 800.2(c)(2).

Thank you for the opportunity to review this undertaking. Please refer to the AHPP Tracking Number listed above in all correspondence. If you have any questions, call Kathryn Bryles at 501-324-9784 or email kathryn.bryles@arkansas.gov.

Sincerely,

Kathryn Bryles Digitally signed by Kathryn Bryles Date: 2022.04.07 13:11:35 -05'00'

*for* Scott Kaufman Director, AHPP

cc: Dr. Melissa Zabecki, Arkansas Archeological Survey

ARDOT Job 040762 QUAPAW NAInding of No Significant Impact

F-3

P.O. Box 765 Quapaw, OK 74363-0765 (918) 542-1853 FAX (918) 542-4694

October 13, 2021

ATTN: Randal Looney 700 West Capitol Ave Suite 3130 Little Rock, AR 72201

Re: ARDOT Job 040861, plans to construct a 0.93-mile bypass on new location, in Greenwood, Sebastian County, AR.

Dear Mr. Looney,

The Quapaw Tribe of Oklahoma Preservation Office has received notification of the proposed ARDOT Job 040861, plans to construct a 0.93-mile bypass on new location, in Greenwood, Sebastian County, AR.

In accordance with the National Historic Preservation Act, (NHPA)[U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d)(6)(A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969.)

The Quapaw Tribe has a vital interest in protecting its historic and ancestral cultural resources. The Quapaw Tribe concurs with the appropriate federal agency recommendations that a cultural resources survey should be conducted. The Quapaw Tribe looks forward to receiving the cultural resources survey report for the proposed project.

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Quapaw Tribe on this matter.

Sincerely, Everett Bars

-Everett Bandy Tribal Historic Preservation Officer/THPO Director Quapaw Nation P.O. Box 765 Quapaw, OK 74363 (w) 918-238-3100 (f) 918-674-2456

#### Brown, Caitlin M.

From:	Boykin, Kristina
Sent:	Wednesday, November 3, 2021 2:46 PM
То:	Brown, Caitlin M.
Subject:	FW: ARDOT Job 040861 Hwy. 10 - Hwy. 96 (Widening) (Greenwood Bybass) (S) Sebastian County, Arkansas HDA-AR

From: Looney, Randal (FHWA) <Randal.Looney@dot.gov> Sent: Wednesday, November 3, 2021 2:28 PM

**To:** Boykin, Kristina <Kristina.Boykin@ardot.gov>

Subject: FW: ARDOT Job 040861 Hwy. 10 - Hwy. 96 (Widening) (Greenwood Bybass) (S) Sebastian County, Arkansas HDA-AR

**CAUTION:** This email originated from outside of ARDOT. Do not click links or open attachments unless you recognize the sender and know the content is safe.

From: Madison D. Currie <<u>mcurrie@choctawnation.com</u>> Sent: Friday, October 22, 2021 12:40 PM To: Looney, Randal (FHWA) <<u>Randal.Looney@dot.gov</u>>

To: Looney, Randai (FHWA) <<u>Randai Looney@dot.gov</u>

Cc: Lindsey Bilyeu <<u>lbilyeu@choctawnation.com</u>>

Subject: ARDOT Job 040861 Hwy. 10 - Hwy. 96 (Widening) (Greenwood Bybass) (S) Sebastian County, Arkansas HDA-AR

**CAUTION:** This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Halito Mr. Looney,

The Choctaw Nation of Oklahoma thanks you for the correspondence regarding the above referenced project. Sebastian County, Arkansas lies within our area of historic interest. The Choctaw Nation Historic Preservation Department requests, an aerial map of the site and a map of cultural resources within one mile.

If you have any questions, please contact me.

Yakoke,

Maddie Danielle Currie Section 106 Reviewer Historic Preservation Department Choctaw Nation of Oklahoma P.O. Box 1210 Durant, OK 74702 Office: 580-642-8467 Cell: 580-740-9537 From: Looney, Randal (FHWA) <<u>Randal.Looney@dot.gov</u>>
Sent: Monday, November 22, 2021 7:14:23 AM
To: Boykin, Kristina <<u>Kristina.Boykin@ardot.gov</u>>
Subject: FW: Hwy 10 - Hwy 96 (Greenwood Bypass) Sebastian County, Arkansas - ARDOT Job 040861

From: Jonathan Rohrer <<u>noreply@jotform.com</u>>
Sent: Friday, November 19, 2021 5:56 PM
To: Looney, Randal (FHWA) <<u>Randal.Looney@dot.gov</u>>
Subject: Hwy 10 - Hwy 96 (Greenwood Bypass) Sebastian County, Arkansas - ARDOT Job 040861

**CAUTION:** This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Randal

Thank you for your request for consultation, received on 09-23-2021. The Caddo Nation appreciates your willingness to conduct proper consultation, pursuant to Section 106 of the National Historic Preservation Act.

Upon review of the project and location I have determined that it does not affect known cultural, traditional or sacred sites of interest to the Caddo Nation. As such, the Caddo Nation has no objection to the project at this time. However, in the event that an inadvertent discovery of potentially relevant cultural sites, funerary objects, or human remains occurs, we request that the project be immediately halted and the proper authorities be contacted. Additionally, The Caddo Nation would need to be notified of an inadvertent discovery with 24 hours.

Should you have any question or concerns regarding this response please feel free to contact our office.

Best regards,

Jonathan

Jonathan M. Rohrer Tribal Historic Preservation Officer

Caddo Nation P.O. Box 487 Binger, OK 73009 t: (405)656-0970 Ext. 2070 e: jrohrer@mycaddonation.com

www.mycaddonation.com



f



# Osage Nation Historic Preservation Office

Date: October 29, 2021

File: 2122-3987AR-10

RE: AHTD, ARDOT, 040862, Hwy. 10 - Hwy. 96 (Greenwood Bypass) (S), Sebastian County, Arkansas

Arkansas Division, FHWA Randal Looney 700 West Capitol Ave., Suite 3130 Little Rock, AR 72201

Dear Mr. Looney,

The Osage Nation has received notification and accompanying information for the proposed project listed as AHTD, ARDOT, 040862, Hwy. 10 - Hwy. 96 (Greenwood Bypass) (S), Sebastian County, Arkansas. The Osage Nation Historic Preservation Office requests a copy of the cultural resource survey report for review and comment.

In accordance with the National Historic Preservation Act, (NHPA) [54 U.S.C. § 300101 et seq.] 1966, undertakings subject to the review process are referred to in 54 U.S.C. § 302706 (a), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. The Osage Nation anticipates reviewing and commenting on the survey report for the proposed AHTD, ARDOT, 040862, Hwy. 10 - Hwy. 96 (Greenwood Bypass) (S), Sebastian County, Arkansas.

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

Deseray Helton

Archaeologist





## Osage Nation Historic Preservation Office 4ΛζΛζα Κοςη Κηραλ

Date: April 24, 2023

File: 2223-1275AR-10

#### RE: AHTD, ARDOT, 040861, Hwy. 10 - Hwy. 96 (Greenwood Bypass) (S), Sebastian County, Arkansas

Federal Highway Administration Arkansas Division, FHWA Randal Looney 700 West Capitol Ave., Suite 3130 Little Rock, AR 72201

#### Sent via email

Dear Mr. Looney,

The Osage Nation Historic Preservation Office has reviewed your submission and concurs that the project listed as AHTD, ARDOT, 040861, Hwy. 10 - Hwy. 96 (Greenwood Bypass) (S), Sebastian County, Arkansas **most likely will not adversely affect any sacred properties and/or properties of cultural significance to the Osage Nation.** For direct effects, the finding of this NHPA Section 106 review is a determination of "**No Adverse Effect**" as the proposed project will not alter or diminish the integrity of the NRHP eligible Property 35, the proposed project will not impact SB0400 and no evidence of 3SB1186 was found within the new proposed project boundaries.

In accordance with the National Historic Preservation Act, (NHPA) [54 U.S.C. § 300101 et seq.] 1966, undertakings subject to the review process are referred to in 54 U.S.C. § 302706 (a), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969). The Osage Nation concurs that the Federal Highway Administration fulfilled NHPA compliance by consulting with the Osage Nation Historic Preservation Office in regard to the proposed AHTD, ARDOT, 040861, Hwy. 10 - Hwy. 96 (Greenwood Bypass) (S), Sebastian County, Arkansas.

The Osage Nation has vital interests in protecting its historic and ancestral cultural resources. We do not anticipate that this project will adversely impact any cultural resources or human remains protected under the NHPA, NEPA, the Native American Graves Protection and Repatriation Act, or Osage law within the surveyed portion of the project. If, however, artifacts or human remains are discovered during project construction, we ask that work cease immediately and the Osage Nation Historic Preservation Office be contacted.

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

Andrea A. Hunter, Ph.D.	Deseray Helton
Director, Tribal Historic Preservation Officer	Archaeologist

cc: Kristina Boykin, Section Head - Cultural Resources, Arkansas Department of Transportation

1

ARDOT Job 040762

## QUAPAW NATION

F-8

P.O. Box 765 Quapaw, OK 74363-0765 (918) 542-1853 FAX (918) 542-4694

October 13, 2021

ATTN: Randal Looney 700 West Capitol Ave Suite 3130 Little Rock, AR 72201

Re: ARDOT Job 040862, plans to widen 1.678 miles of Hwy. 10 from Hwy. 71 to west of Coker St. in Greenwood, Sebastian County, AR.

Dear Mr. Looney,

The Quapaw Tribe of Oklahoma Preservation Office has received notification of the proposed ARDOT Job 040862, plans to widen 1.678 miles of Hwy. 10 from Hwy. 71 to west of Coker St. in Greenwood, Sebastian County, AR.

In accordance with the National Historic Preservation Act, (NHPA)[U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d)(6)(A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969.)

The Quapaw Tribe has a vital interest in protecting its historic and ancestral cultural resources. The Quapaw Tribe concurs with the appropriate federal agency recommendations that a cultural resources survey should be conducted. The Quapaw Tribe looks forward to receiving the cultural resources survey report for the proposed project.

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Quapaw Tribe on this matter.

Sincerely,

verott Band

-Everett Bandy Tribal Historic Preservation Officer/THPO Director Quapaw Nation P.O. Box 765 Quapaw, OK 74363 (w) 918-238-3100 (f) 918-674-2456

#### Brown, Caitlin M.

From:	Boykin, Kristina
Sent:	Wednesday, November 3, 2021 2:46 PM
To:	Brown, Caitlin M.
Subject:	FW: ARDOT Job 040862 Hwy. 71 - Coker St. (Widening) (Greenwood) (S) Sebastian County, Arkansas
	HDA-AR

From: Looney, Randal (FHWA) <Randal.Looney@dot.gov>
Sent: Wednesday, November 3, 2021 2:28 PM
To: Boykin, Kristina <Kristina.Boykin@ardot.gov>
Subject: FW: ARDOT Job 040862 Hwy. 71 - Coker St. (Widening) (Greenwood) (S) Sebastian County, Arkansas HDA-AR

**CAUTION:** This email originated from outside of ARDOT. Do not click links or open attachments unless you recognize the sender and know the content is safe.

From: Madison D. Currie <<u>mcurrie@choctawnation.com</u>>
Sent: Friday, October 22, 2021 12:37 PM
To: Looney, Randal (FHWA) <<u>Randal.Looney@dot.gov</u>>
Cc: Lindsey Bilyeu <<u>lbilyeu@choctawnation.com</u>>
Subject: ARDOT Job 040862 Hwy. 71 - Coker St. (Widening) (Greenwood) (S) Sebastian County, Arkansas HDA-AR

**CAUTION:** This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Halito Randal Looney,

The Choctaw Nation of Oklahoma thanks you for the correspondence regarding the above referenced project. This part of Sebastian County, Arkansas lies outside of our area of historic interest. The Choctaw Nation Historic Preservation Department respectfully defers to the other Tribes that have been contacted.

If you have any questions, please contact me.

Yakoke,

Maddie Danielle Currie Section 106 Reviewer Historic Preservation Department Choctaw Nation of Oklahoma P.O. Box 1210 Durant, OK 74702 Office: 580-642-8467 Cell: 580-740-9537 From: Looney, Randal (FHWA) <<u>Randal.Looney@dot.gov</u>>
Sent: Monday, November 22, 2021 7:14:10 AM
To: Boykin, Kristina <<u>Kristina.Boykin@ardot.gov</u>>
Subject: FW: Hwy 71 - Coker St. (Widening) (Greenwood) Sebastian County, Arkansas - ARDOT Job
040862

From: Jonathan Rohrer <<u>noreply@jotform.com</u>>
Sent: Friday, November 19, 2021 5:54 PM
To: Looney, Randal (FHWA) <<u>Randal.Looney@dot.gov</u>>
Subject: Hwy 71 - Coker St. (Widening) (Greenwood) Sebastian County, Arkansas - ARDOT Job 040862

**CAUTION:** This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Randal

Thank you for your request for consultation, received on 09-23-2021. The Caddo Nation appreciates your willingness to conduct proper consultation, pursuant to Section 106 of the National Historic Preservation Act.

Upon review of the project and location I have determined that it does not affect known cultural, traditional or sacred sites of interest to the Caddo Nation. As such, the Caddo Nation has no objection to the project at this time. However, in the event that an inadvertent discovery of potentially relevant cultural sites, funerary objects, or human remains occurs, we request that the project be immediately halted and the proper authorities be contacted. Additionally, The Caddo Nation would need to be notified of an inadvertent discovery with 24 hours.

Should you have any question or concerns regarding this response please feel free to contact our office.

Best regards,

Jonathan

Jonathan M. Rohrer Tribal Historic Preservation Officer

Caddo Nation P.O. Box 487 Binger, OK 73009 t: (405)656-0970 Ext. 2070 e: jrohrer@mycaddonation.com

www.mycaddonation.com



F-11

P.O. Box 765 Quapaw, OK 74363-0765 (918) 542-1853 FAX (918) 542-4694

May 18, 2022

ATTN: Randal Looney 700 West Capitol Ave Suite 3130 Little Rock, AR 72201

Re: (ARDOT Job 040862) Widening 1.678 miles of Hwy 10 from two to five lanes with a center turn lane and curb and gutter with sidewalks, between Hwy. 71 and Coker St. in Sebastian County, AR.

To whom it may concern,

The Quapaw Nation Historic Preservation Office has received and reviewed the information provided for the proposed (ARDOT Job 040862) widening 1.678 miles of Hwy 10 from two to five lanes with a center turn lane and curb and gutter with sidewalks, between Hwy. 71 and Coker St. in Sebastian County, AR. This office concurs with the SHPO's findings that this project is not likely to adversely affect properties of cultural or sacred significance to the Quapaw Nation.

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d) (6) (A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Quapaw Nation has vital interests in protecting its historic and ancestral cultural resources. We do not anticipate that this project will adversely impact any cultural resources or human remains protected under the NHPA, NEPA, or the Native American Graves Protection and Repatriation Act. If, however, artifacts or human remains are discovered during project construction, we ask that work cease immediately and that you contact the Quapaw Nation Historic Preservation Office.

Should you have any questions or need any additional information, please feel free to contact me at the number listed below. Thank you for consulting with the Quapaw Nation on this matter.

Sincerely,

Everett Bans

Tribal Historic Preservation Office Quapaw Nation P.O. Box 765 Quapaw, OK 74363 (w) 918-238-3100



# Osage Nation Historic Preservation Office

Date: October 29, 2021

File: 2122-3986AR-10

RE: AHTD, ARDOT, 040862, Hwy. 71 - Coker St. (Widening) (Greenwood) (S), Sebastian County, Arkansas

Arkansas Division, FHWA Randal Looney 700 West Capitol Ave., Suite 3130 Little Rock, AR 72201

Dear Mr. Looney,

The Osage Nation has received notification and accompanying information for the proposed project listed as AHTD, ARDOT, 040862, Hwy. 71 - Coker St. (Widening) (Greenwood) (S), Sebastian County, Arkansas. The Osage Nation Historic Preservation Office requests a copy of the cultural resource survey report for review and comment.

In accordance with the National Historic Preservation Act, (NHPA) [54 U.S.C. § 300101 et seq.] 1966, undertakings subject to the review process are referred to in 54 U.S.C. § 302706 (a), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. The Osage Nation anticipates reviewing and commenting on the survey report for the proposed AHTD, ARDOT, 040862, Hwy. 71 - Coker St. (Widening) (Greenwood) (S), Sebastian County, Arkansas.

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

Deseray Helton

Archaeologist





## Osage Nation Historic Preservation Office 4ΛζΛζα Κοςη Κηραλ

Date: April 25, 2023

File: 2223-1274AR-10

## RE: AHTD, ARDOT, 040862, Hwy. 71 - Coker St. (Widening) (Greenwood) (S), Sebastian County, Arkansas

Federal Highway Administration Arkansas Division, FHWA Randal Looney 700 West Capitol Ave., Suite 3130 Little Rock, AR 72201

#### Sent via email

The Osage Nation Historic Preservation Office has evaluated your submission regarding the proposed AHTD, ARDOT, 040862, Hwy. 71 - Coker St. (Widening) (Greenwood) (S), Sebastian County, Arkansas and determined that the proposed project most likely will not adversely affect any sacred properties and/or properties of cultural significance to the Osage Nation. For direct effect, the finding of this NHPA Section 106 review is a determination of "No Properties" eligible or potentially eligible for the National Register of Historic Places.

In accordance with the National Historic Preservation Act, (NHPA) [54 U.S.C. § 300101 et seq.] 1966, undertakings subject to the review process are referred to in 54 U.S.C. § 302706 (a), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969). The Osage Nation concurs that the Federal Highway Administration fulfilled NHPA compliance by consulting with the Osage Nation Historic Preservation Office in regard to the proposed project referenced as AHTD, ARDOT, 040862, Hwy. 71 - Coker St. (Widening) (Greenwood) (S), Sebastian County, Arkansas.

The Osage Nation has vital interests in protecting its historic and ancestral cultural resources. We do not anticipate that this project will adversely impact any cultural resources or human remains protected under the NHPA, NEPA, the Native American Graves Protection and Repatriation Act, or Osage law. **If, however, artifacts or human remains are discovered during project construction, we ask that work cease immediately and the Osage Nation Historic Preservation Office be contacted.** 

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

Andrea A. Hunter, Ph.D.DeDirector, Tribal Historic Preservation OfficerAr

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cc: Kristina Boykin, Section Head - Cultural Resources, Arkansas Department of Transportation