



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
501 West Felix Street, Suite 1105
Fort Worth, Texas 76115

August 2, 2023

In Reply Refer To:
2023-0026435

Brandon W. Mobley
Chief, Regulatory Division
U.S. Army Corps of Engineers
Fort Worth District
P.O. Box 17300
Fort Worth, Texas 76102-0300
Attn: Eric Dephouse and Jennifer Walker

Subject: Biological opinion for Project Number SWF-2023-00215, Warrior Pipeline Project, and its effects on the federally endangered golden-cheeked warbler (*Setophaga chrysoparia*) in Eastland, Erath, Hood, Johnson, and Somervell Counties, Texas

Dear Mr. Mobley:

This document transmits our biological opinion of the effects of issuance of a Nationwide Permit #12 under Section 404 of the Clean Water Act (CWA) for the construction and operation of Warrior Pipeline LLC's (a subsidiary of Energy Transfer Partners) proposed Warrior Pipeline Project (Project) on the golden-cheeked warbler (*Setophaga chrysoparia*, GCWA), pursuant to section 7(a)(2) of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. §1531 *et seq.*). The Corps has determined that there would be no effect to the endangered Texas poppy-mallow (*Callirhoe scabriuscula*), and therefore it is not included in this biological opinion. The Corps has likewise determined that the proposed action would have no effect or is unlikely to jeopardize the continued existence of the proposed endangered tricolored bat (*Perimyotis subflavus*), Texas fatmucket (*Lampsilis bracteate*), and Texas pimpleback (*Cyclonaias petrina*), and proposed threatened alligator snapping turtle (*Macrochelys temminckii*), and Texas fawnsfoot (*Truncilla macrodon*), thus conference under section 7 is not necessary. Your request for formal consultation on USACE Project SWF-2023-00215 was received on February 10, 2023.

This biological opinion is based on information provided in the January 2023 biological assessment (BA) and subsequent revisions, as well as video conferences and emails with the U.S. Army Corps of Engineers (USACE), Austin Ecological Services Field Office (ESFO), Warrior Pipeline LLC, Perennial Environmental Services, and other sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, construction activities and their effects, or on other subjects considered in

this opinion. A complete administrative record of this consultation is on file at the Arlington ESFO.

1.0 CONSULTATION HISTORY

May 11, 2022	Preliminary project coordination video conference meeting between the Service's Austin and Arlington ESFOs, USACE, Warrior Pipeline LLC to present project scope and discuss listed species in the project vicinity.
December 12, 2022	The Service met by video conference with the USACE, Warrior Pipeline LLC, and Perennial Environmental Services to discuss the project details and confirm that the Arlington ESFO would handle the consultation.
February 10, 2023	The Service received the USACE BA prepared by Perennial Environmental Services and a request for initiation of formal consultation regarding potential effects to the GCWA.
March 1, 2023	The Service emailed a signed letter accepting formal consultation acknowledging February 10, 2023 commencement.
June 21, 2023	The Service requests 45-day extension to complete consultation to ensure consistency between multiple ongoing pipeline projects under Corps jurisdiction. Extends timeline for final BO to August 9, 2023.
July 17, 2023	Service submitted draft biological opinion to the USACE for review and comment.
August 2, 2023	Service received comments from USACE and incorporated into final BO.

BIOLOGICAL OPINION

2.0 DESCRIPTION OF THE PROPOSED ACTION

As defined in the Act's section 7 implementing regulations (50 CFR 402.02), "action" means "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas."

Section 404 of the Clean Water Act (CWA) (33 U.S.C. § 1251 *et seq.*; Federal Water Pollution Control Act Amendments of 1972), through the USACE and U.S. Environmental Protection Agency, regulates the discharge of dredged or fill material into the Waters of the United States (WOTUS), including wetlands. The USACE has notified the Service that their applicant, Warrior Pipeline LLC, will be seeking § 404 authorization for portions of the Warrior Pipeline Project that affect WOTUS. Section 7 of the Act requires that all Federal agencies consult with

the Service to ensure that the actions authorized, funded, or carried out by such agencies do not jeopardize the continued existence of any threatened or endangered species, or adversely modify or destroy designated critical habitat of such species. The USACE is the lead Federal agency associated with this formal consultation.

The Service memorandum dated November 03, 2017, discusses an agreement in principle between the Service and the USACE regarding “small federal handle” projects. The small federal handle approach for conducting section 7 consultations applies to projects in which the USACE is considering permitting an action where their involvement is limited to making a permitting decision for a small component of a larger project. The Service’s letter to the USACE dated May 22, 2017, and its enclosure, “Process for Section 7 Consultation in Small Federal Handle Situations” provide guidance for small federal handle projects (Appendix A). The letter outlines the agreement in principle that may apply to situations where both of the following conditions are met:

1. Where there is a legitimate Federal nexus to the larger project, via activities subject to Clean Water Act or Rivers and Harbors Act of 1899 jurisdiction, that cannot be avoided (i.e., but for the Federal permit, the larger action could not occur).
2. Where the effects considered within the biological assessment and biological opinion are all appropriately within the scope of a section 7 consultation (i.e., the direct and indirect effects of the Federal action on the species or designated critical habitat, together with the effects of other activities that are interrelated or interdependent¹ with that action and including consideration of cumulative effects).

The project, as proposed, satisfies conditions 1 and 2 as outlined in the “Process for Section 7 Consultation in Small Federal Handle Situations” guidance. Therefore, in accordance with the agreement in principle between the Service and the USACE, the Service considers project SWF-2023-00215 a “small federal handle” project for the purposes of this consultation. The following is a summary of the proposed action; a detailed description can be found in USACE’s BA for the proposed Project (Perennial Environmental Services 2023). The Federal action is the USACE issuance of a Section 404 permit.

2.1 Construction

Warrior Pipeline LLC plans to construct 328 miles of 36-inch natural gas pipeline from the Midland Basin in west Texas to the Fort Worth area. The project would provide an outlet for the oversupply of natural gas in west Texas as well as new source of supply for the growing demand of natural gas in the Dallas/Fort Worth Metroplex. According to Warrior Pipeline LLC, the ~1.5 billion cubic feet per day project would also reduce gas flaring in west Texas while also reducing

¹ Guidance for “small federal handle” projects predates the most recent regulation for the Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 *et seq.* §402.02, which no longer uses ‘interrelated or interdependent’ terminology.

the constraints around oil drilling programs required to provide energy to Energy Transfer Partners refinery fleet along the Gulf Coast.

Construction of the project is anticipated to begin in November 2023 and would extend through November 2024. In areas of suitable habitat for listed species, seasonal clearing activities may occur during the non-breeding season when species are not present. Otherwise, activities would proceed in a continuous and uninterrupted manner until Project completion. This schedule includes all phases of construction from initial mobilization through cleanup, restoration, and revegetation.

2.1.1 Pipeline Facilities

Workspace Descriptions

Construction of the 36-inch pipeline would require a typical construction right-of-way (ROW) width of 125 feet where traditional open-cut construction methodologies are utilized. The construction ROW would be split into a 90-foot working side and a 35-foot spoil side as depicted in Figure 2.1.

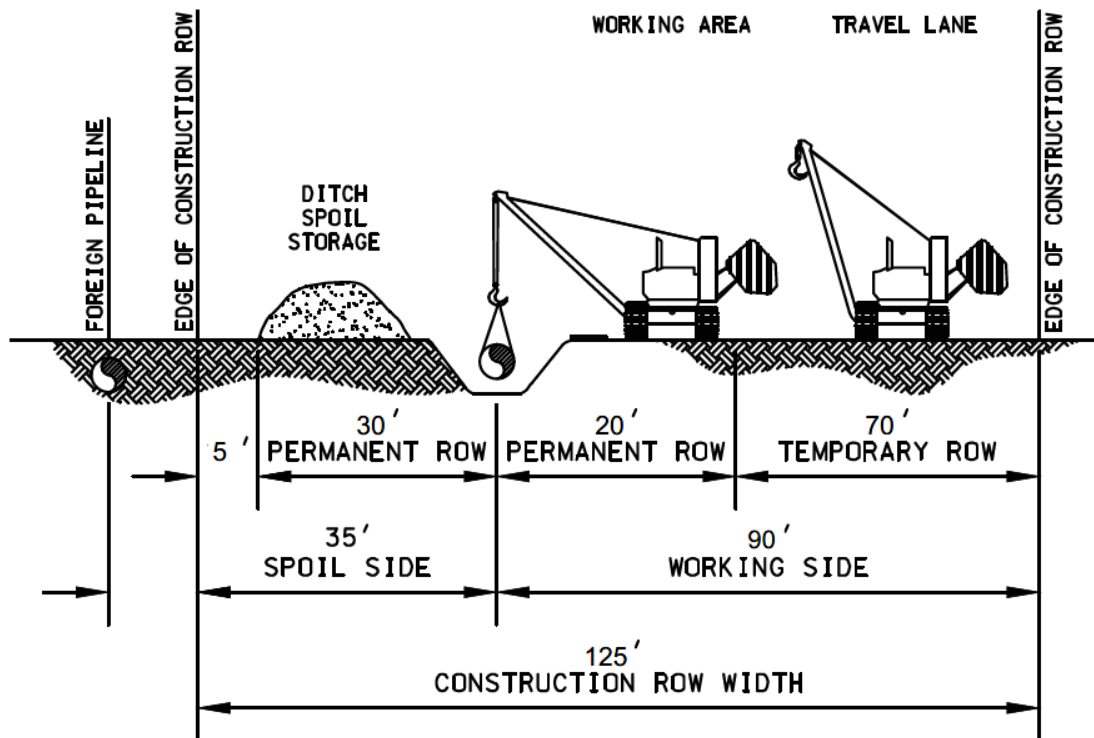


Figure 2.1. Typical Project Construction Corridor

Following construction, a 50-foot-wide permanent easement would be retained. Access to the Project would mostly be gained utilizing existing ROWs and public/private roadways where they intersect the Project.

Additional Temporary Workspace

Where necessary, Warrior would utilize additional temporary workspace (ATWS). In general, ATWS areas would range between 50 to 100 feet in width and various lengths. They are typically required to facilitate specialized construction procedures such as railroad, road, wetland, waterbody, and foreign utility line crossings; areas where topsoil segregation is required; tie-ins with existing pipeline facilities; areas with steep side slopes; and pipeline crossovers. All ATWS would be allowed to revert to pre-existing conditions following construction activities.

Access Roads

Construction of the proposed Project would use existing public and private access roads, newly cleared permanent and temporary ROW, and previously cleared ROW to the greatest extent possible for temporary access to the construction ROW. In general, existing roads would be used with no improvements (i.e., vegetation clearing, tree cutting, fill/grade, widening, etc.) and would be restored to pre-construction conditions as necessary. If existing roads are unsafe for pipeline construction traffic, minor grading and/or filling of the existing road may be necessary to facilitate safe construction conditions. Warrior would attempt to utilize access roads outside the boundaries of potential habitat for listed species to the greatest extent possible. No access roads would be widened within potential habitat for listed species and clearing of vegetation in these areas would be restricted to the removal of limbs that extend within and obstruct views of the roadway.

2.1.2 Aboveground Facilities

Aboveground facilities for the Project would consist of 3 compressor stations, 17 mainline valves (MLVs), 3 metering and regulation (M&R) stations, and a launcher/receiver site. Each facility would be seated in an upland area beyond the USACE Action Areas and not located outside of the proposed maintained permanent easement within areas of potential habitat for listed species (USACE Action Areas and Applicant Action Areas are defined and discussed in Section 3.0).

2.2 Construction procedures

Warrior would conduct construction activities in accordance with applicable laws and regulations, as well as the specific requirements of applicable permits. The Project would be constructed via a combination of conventional and specialized construction procedures as described below.

2.2.1 Clearing and Grading

Prior to the start of construction, land surveys would be conducted, and the pipeline centerline and the boundaries of the construction workspace would be marked with stakes. Existing utility lines, other sensitive resources, and areas to be avoided during construction as identified in landowner easement agreements or by federal/state/local agencies, would be located and marked to prevent impacts during construction of the Project pipeline. After completion of the surveys and staking, large obstacles, such as trees, rocks, brush, and logs, would be removed from the ROW and ATWS areas. Timber and other vegetative debris may be chipped into mulch for use as erosion control or otherwise burned or disposed of in accordance with applicable regulations and landowner requirements.

The entire width of the construction work area, including the construction ROW and ATWS, would be stripped of topsoil and rough graded as necessary to allow for the safe passage of equipment and to prepare the work surface for pipeline installation activities. Typically, the grading of the construction work areas would be completed with bulldozers and excavators. Where needed for erosion control, Best Management Practices (BMPs) would be implemented along the construction ROW and would be properly maintained throughout construction. BMPs would remain in place until permanent erosion controls are installed, when restoration is complete, or revegetation is successful.

2.2.2 Pipe Stringing, Bending and Welding

Pipe would typically be transported by truck from the mill or contractor/pipe yards to the ROW. Sections (joints) of straight steel pipe would be placed in a single, continuous line (termed stringing) within the construction ROW along and adjacent to the trench line. Certain areas, including all wetland and waterbody crossings, areas where bends are required, width restricted areas, and others, may require multiple joints of pipe to be strung together to create drag sections and crossing sections.

Pipe joints would typically be aligned, welded together into a long segment, and placed on temporary supports (known as “skids”) at the edge of the ditch. The pipe would be welded into long strings to minimize the number of welds that have to be made in the ditch (tie-in welds). Gaps in the welding process (or pipe strings) may be left at waterbody/wetland crossings, road crossings, and other locations where access across the construction work area needs to be maintained and tie-ins are anticipated.

2.2.3 Ditch Excavation

Following completion of welding, ditch excavation would be completed using backhoe excavators or automated ditching machines, and excavated materials would be stockpiled along the ROW. The Project pipeline would be buried below the ground surface to a depth meeting or exceeding the U.S. Department of Transportation (USDOT) standards presented in 49 CFR §

195.248. In standard conditions, the ditch would be excavated to a sufficient depth to allow a minimum of 30 inches of cover between the top of the pipe and the final land surface after backfilling. The width of the ditch to be excavated will vary depending on soil type and terrain and can vary from 5 feet to 10 feet. On steep slopes, trench breakers (i.e., barriers to subsurface water flow placed in the ditch) would typically be used to create segments within the open ditch to reduce erosion and allow access across the ditch. trench breakers typically consist of unexcavated ditch segments or excavated ditches temporarily filled with sandbags or polyurethane foam placed across the ditch. Where the Project pipelines cross roads, railroads, highways, ditches, creeks, canals, rivers, etc., cover in excess of normal depth may be required and would be in accordance with stated crossing conditions, government and regulating authority's requirements, and prudent pipeline design approaches.

2.2.4 Coating

After welding is completed, a coating crew would coat the area around the weld (also known as field joint coating). The entire coated pipelines would be visually inspected for faults, scratches, or other defects and then electronically inspected for faults or areas where the coating is thinner than the coating thickness specification. If damage to the coating is discovered, the coating would be repaired before the pipe is lowered into the ditch.

2.2.5 Lowering-in

Prior to lowering the pipeline into the excavated ditch, the work area is visually inspected to verify that the pipe and ditch configurations are compatible, all debris or foreign material has been removed, and no significant water remains in the ditch. If significant water, either from groundwater seepage or precipitation, is present, the ditch would typically be dewatered. During ditch dewatering, water would be pumped from the ditch into a filter bag or straw bale structure, or equivalent to manage erosion and sedimentation at the discharge location. The rate of flow from the pump would be regulated, and energy dissipation devices would be used as necessary to prevent erosion from runoff and to prevent the flow of heavily silt-laden water directly into adjacent waterbodies. Dewatering would be conducted in accordance with applicable Federal, state, and local regulations.

After inspection, when removal of debris and foreign material and dewatering is complete, the pipeline would be lowered into the ditch by appropriately spaced sideboom tractors working in unison to avoid buckling of the pipe.

2.2.6 Backfilling

After the pipeline is lowered into its respective ditch and adequately protected, buoyancy control devices would be installed as required. Saddle bags and/or weights would be used on the pipelines to prevent the pipelines from floating out of the ground, where necessary. Previously excavated subsoil would then be placed on and around the pipe in the ditch using bladed

equipment or excavators. The areas directly over the ditch would be slightly crowned to accommodate soil settlement.

2.2.7 Horizontal Directional Drilling

Horizontal directional drills (HDD) are a construction method that allows a pipeline to be installed between two points by drilling beneath rather than ditching through. The length of pipeline that can be installed by HDD depends on underlying soil conditions, pipe diameter, as well as available technology and equipment size. HDDs involve drilling a pilot hole along a prescribed path and then enlarging that hole using reaming and drilling/cutting tools to achieve a hole large enough to accommodate the pipe. The cutting and reaming tools are attached to the drill string and drawn back to the drilling rig, thus progressively enlarging the pilot hole with each pass. During this process, drilling fluid consisting mainly of bentonite clay and water is maintained in drilling pits within the construction work area and is continuously pumped into the hole to remove cuttings and maintain the integrity of the hole between the HDD entry and exit points.

Once the hole has been sufficiently enlarged (reamed), a prefabricated segment of pipe would be attached behind the reaming tool on one side of the crossing and pulled back through the drill hole to the drill rig, completing the crossing. Generally, no clearing between HDD entry and exit locations would occur unless travel lanes are required due to a lack of access from public and private roadways. In these instances, typically no more than the width of the permanent easement (50 feet) would be cleared.

When HDD methods are utilized, the pipeline would typically be installed at a depth of 25 to 50 feet, or deeper, beneath the feature being crossed. Additional pipeline protective measures would include an abrasion resistant overcoat, which is applied on top of the fusion-bonded epoxy on the pipe to be installed via HDD or bore, to further protect pipeline integrity by adding a reinforced coating layer to protect against physical encounters in the subsurface trenchless installation. When utilizing HDD, ATWS would be required to facilitate HDD equipment and activities at the entry and exit holes of the HDD.

2.2.8 Bore

The conventional bore method would be used for crossings beneath various public roadways, railroad crossings, etc. To complete a conventional bore, a pit on either side of the road or waterbody would be excavated to provide a working area for the equipment. A boring machine would be lowered into one pit, and a horizontal hole would be bored to a diameter slightly larger than the diameter of the pipe at the depth of pipeline installation. The pipeline section would then be pushed through the bore to the opposite pit. If additional pipeline sections are required to span the length of the bore, they would be welded to the first section of the pipeline in the bore pit prior to being pushed through.

2.3 Operation and maintenance

Once complete, the Project would be placed into service and operated by appropriately trained and qualified Warrior personnel. All operational and maintenance activities would be conducted in accordance with the USACE regulatory permit conditions, USDOT Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations, and Warrior's operating policies and procedures. Periodic clearing of woody vegetation over the 50-foot-wide permanent easement would occur as necessary and would be scheduled to occur outside of the GCWA breeding and nesting season (March 1 through August 31) within areas mapped as habitat.

3.0 ACTION AREA

Section 7 of the Act requires the Service to analyze the effects of the agency action where that action "may affect" listed species or designated critical habitat. The action area is defined at (50 CFR 402.02) as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." While the BA analyzed the potential effects to listed species within USACE jurisdictional areas, the Action Area contemplated by the Service, and under review in the BA, includes areas that would be physically affected by construction of the entirety of the Project (e.g., construction ROW, operation easement, ATWS, temporary access roads, aboveground facilities). These differing action areas are described below as the USACE Action Area and the Applicant Action Area (as per small Federal handle guidance Appendix A). An overall project overview map depicting the Action Areas is included later in Figure 4.1.

3.1 USACE Action Area

The USACE Action area for the Project would consist of the entire extent of each WOTUS impacted by construction activities along the entire 328 mile project, but including an additional a 300-foot buffer down the construction ROW and along both sides of the limits of construction within the range of the GCWA. A typical extent of a USACE Action Area is depicted in Figure 3.1.

Note that all wetland and waterbodies proposed to be crossed via HDD were not assessed as USACE Action Areas since it is anticipated that that no regulated impacts would occur within these features. The single exception would be the Wolf Creek HDD crossing at MP 263.1 due to the requirement of temporary bridge construction to facilitate access.

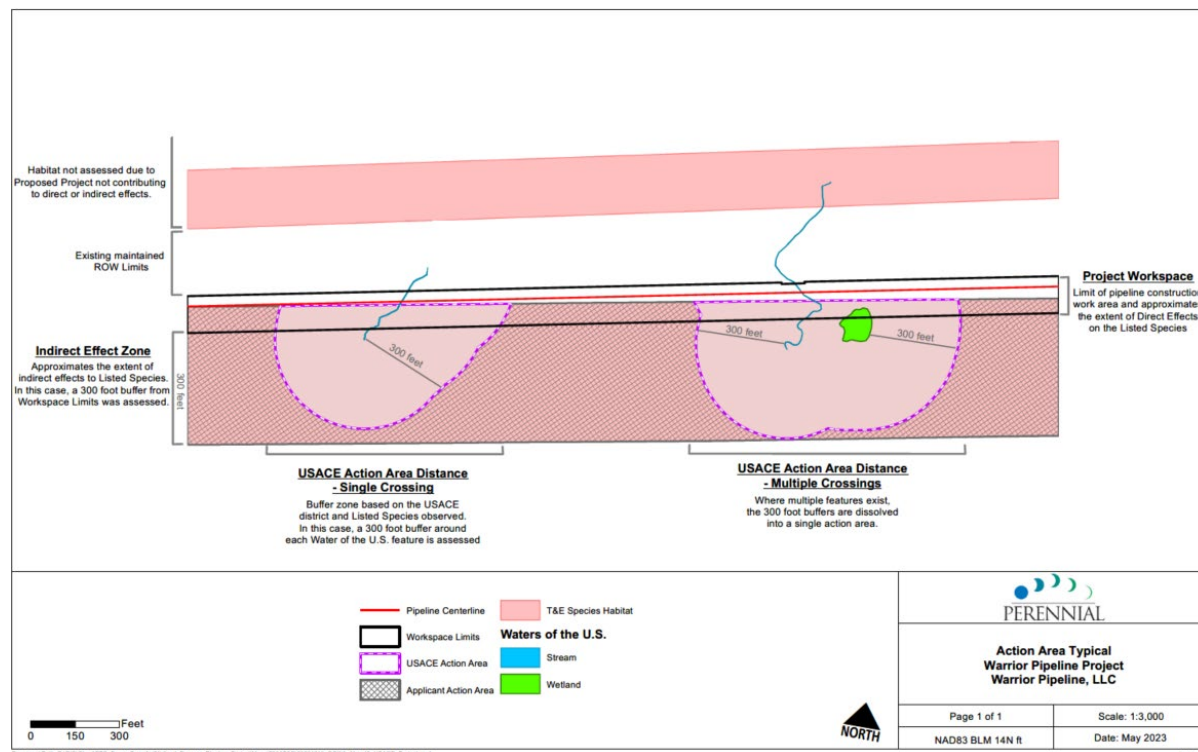


Figure 3.1. Typical Extent of a USACE Action and Applicant Areas

3.2 Applicant Action Area

The Applicant Action Area would include all upland portions of the Project within the range of the GCWA that are reasonably likely to be directly or indirectly affected by construction activities that are not under USACE regulation or responsibility. This would include disturbed areas located within the construction ROW (direct impact) and a 300' buffer zone along both sides of the limits of construction (indirect impact). All potential threatened and endangered (T&E) species habitat falling outside of the USACE Action Area would be considered part of the Applicant Action Area. GCWA habitat not directly impacted, but within the 300' buffer would be indirectly affected, but those effects would be minimized because construction in these areas would be scheduled outside of the breeding season (see Conservation Measures #3 and 4 below) when birds are not present. Areas in which HDD is utilized require the clearing of vegetation and maintenance of the ROW per Federal regulation. The use of HDD removes the USACE's responsibilities under section 404 of the CWA and section 7 of the Act. Therefore, such areas containing GCWA habitat will be considered part of the Applicant Action Area. The total size of the Applicant Action Area across the entire extent of the Project is 270.57 acres.

3.3 Conservation Measures

To minimize the potential for direct mortality and harassment of GCWA during the species nesting season, Warrior Pipeline LLC would implement the following conservation measures to

avoid, minimize, and mitigate potential adverse effects from construction, operation, and maintenance of the Project:

- 1) To the extent possible, proposed pipeline construction procedures would utilize an existing ROW to minimize the amount of potential habitat cleared and reduce the amount of habitat removal and effects of habitat fragmentation.
- 2) With exception of the Tolar M&R Station at MP 273.7, proposed compressor and M&R stations would be seated a minimum of 300 feet beyond potential habitat for listed species to minimize direct or indirect effects during construction and operation of the Project.
- 3) All clearing of woody vegetation for construction of the pipeline within areas mapped as GCWA habitat would be conducted between September 1 and February 28 to avoid the GCWA breeding and nesting season (March 1 through August 31). Additionally, construction activities located adjacent to GCWA habitat (within 300 feet) would be performed outside of the breeding and nesting season (March 1 through August 31).
- 4) In the event construction activities would need to occur within areas mapped as GCWA habitat during the breeding season between March 1 and August 31, permitted GCWA biologists would be onsite to monitor in areas planned for active construction. Monitoring will follow the Service's survey protocol (<https://www.fws.gov/media/gcwa-survey-requirements>). In the event the habitat is determined to be occupied by GCWA, construction activities would not be allowed to commence in the immediate vicinity (within 300') of the positive identification until the end of the breeding season to prevent direct or indirect effects to the species.
- 5) Routine clearing of woody vegetation from the pipeline permanent ROW would be part of on-going pipeline maintenance activities. This work would not be performed in areas where adjacent GCWA habitat exists during the primary breeding and nesting season (March 1 through July 31).
- 6) Warrior would provide all necessary contractor environmental training regarding conservation and management practices that must be adhered to in order to ensure conservation measures are implemented and impacts to GCWA are avoided or minimized to the greatest extent possible.
- 7) GCWA proposed compensation – Warrior is proposing to compensate for unavoidable impacts to GCWA habitat during construction of the Project utilizing ratios consistent with Service practice. Direct impacts would be mitigated for using a 2:1 (the ratio generally used for medium quality habitat) and 0.5:1 for indirect impacts. Mitigation specifics addressing the USACE and Applicant Action Areas are addressed in the Effects of the Action (Section 7.0) of this opinion.

4.0 STATUS OF THE SPECIES AND CRITICAL HABITAT

The BA utilized the Service’s Information for Planning and Consultation System (IPaC) System and identified a total of thirteen federally listed, candidate, or species proposed for listing potentially present within the Project area. Two of the 13 species, the piping plover (*Charadrius melodus*) and red knot (*Calidris canutus rufa*) only need to be considered for wind energy projects. Additionally, the conditional area for both the sharpnose shiner (*Notropis oxyrhynchus*) and smalleye shiner (*Notropis buccula*), which only needs to be considered for reservoir projects and in-channel projects (interbasin transfers, water diversions, small impoundments, etc.) that may reduce flows of major tributaries eventually flowing into occupied habitat, or commercial/industrial well field projects (per IPaC). Therefore, these species are not further discussed.

The applicable list of federally listed species that are known to occur, or have been documented within the Action Areas are presented in Table 4.1. No critical habitat has been designated within the USACE or Applicant Action Areas. Table 4.1 summarizes key information regarding the federally listed species with potential to occur within both Action Areas. Each species is further discussed in Section 4.1.

Table 4.1. Overview of federally listed species and critical habitats potentially present within the action areas

Common Name <i>Scientific Name</i>	Listing Status	Critical Habitat in Project Area	Range and Distribution	Seasonality and Habitat Association	Suitable Habitat Within the Project Site
Golden-cheeked Warbler (<i>Setophaga chrysoparia</i>)	E	No	Summer: Central Texas in the Edwards Plateau, Lampasas Cut-Plain, and Llano Uplift regions	Found in Texas March-August in mixed Ashe juniper-oak stands.	Yes
Whooping Crane (<i>Grus americana</i>)	E	No	Florida, Louisiana, wintering population in Texas, and a summer population in Wisconsin	Use agricultural fields, wet meadows, marsh habitats and shallow rivers for feeding, typically select sites with wide open views.	Yes

4.1 Species accounts within the action areas

The following sections provide detailed information on the species identified in Table 4.1, including their population status, range and distribution, habitat requirements, threats, and known or potential occurrence within the Project Site. Also included for each species is a description of designated critical habitat, if any, and a summary of elements of recovery plans or other ongoing conservation activities that may be relevant. The information contained herein was derived from

the BA and sourced from publicly available or agency-provided data; scientific resources; technical documents; field surveys; and consultation with species experts. A Project overview map outlining the county range for the GCWA overlaps with the whooping crane migration corridor, as well as major waterbody crossings with potential to contain sensitive species is presented in Figure 4.1.

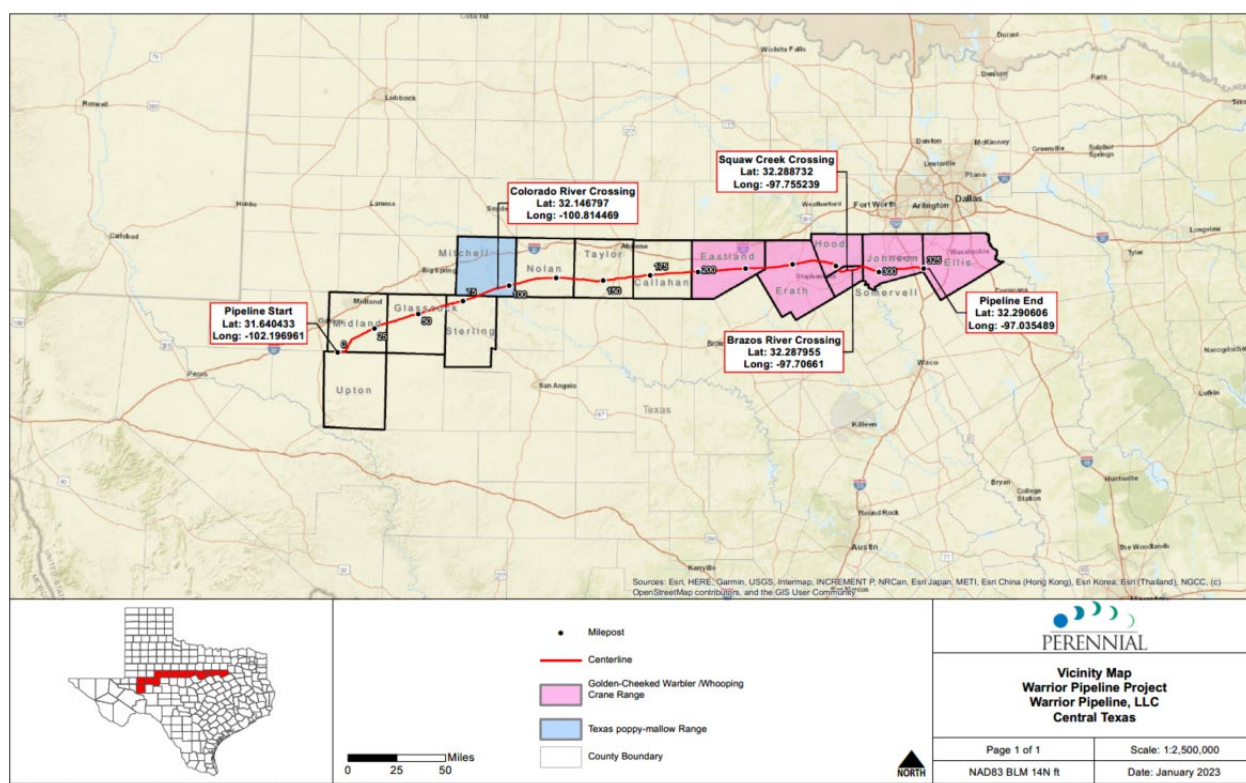


Figure 4.1. Project Overview Map

Whooping Crane

Species Occurrence Within the Project Action Area

Stopover habitat may occur in the migratory corridor and may be intersected by the Project in Eastland, Erath, Hood, Somervell, Johnson, and Ellis counties. However, this species is only present during the spring and fall migration (late March or early April and October through November). No suitable overwintering habitat occurs within the Project Action Area.

Potential Impacts

Because it would be unlikely for whooping cranes to be encountered by project activities within their migration corridor during migration periods, and potential stopover habitats may make up only a very small portion (if any) of the project Action Areas, potential effects to the whooping

crane are not expected (discountable). Likewise, the effects to the species or its habitat (if present) would be expected to be so small as to not be measurable. Each of these are consistent with a determination of may affect, but is not likely to adversely affect to the whooping crane.

Conservation Measures

Impacts on whooping cranes are not anticipated. However, measures included with the project design that would also help to avoid impacts to the whooping crane include:

- 1) All major rivers would be crossed via HDD. No dredging or other impacts would occur in these areas.
- 2) Install sediment barriers across the entire construction ROW at waterbody and wetland crossings (where applicable) to prevent the flow of sediment into the waterbody or wetland.
- 3) Where wetlands or waterbodies are adjacent to the ROW and the ROW slopes toward the resource, install sediment barriers along the edge of the ROW to prevent sediment from leaving the ROW and entering the wetland or waterbody.
- 4) All temporarily impacted wetlands would be returned to pre-construction contours and allowed to revegetate naturally upon completion of construction.

Determination of Effect

The Project Action Area overlaps with suitable stopover habitat within the migratory corridor. However, due to the minimization measures outlined above, the BA indicates that Warrior Pipeline LLC has determined that the proposed Project, *may affect, but is not likely to adversely affect* the whooping crane within the USACE Action Areas and the Applicant Action Areas. The Corps also utilized the Arlington ESFO Determination Key to provide project specific information, which led to a *may affect, but is not likely to adversely affect* determination and concurrence letter for whooping cranes.

Golden-cheeked warbler

The single species that occurs within the Action Areas and may be adversely impacted by the proposed action is the GCWA. Further information for this species is detailed below.

5.0 STATUS OF THE SPECIES

The GCWA was emergency listed as endangered on May 4, 1990 (55 FR 18844). The final rule listing the species was published on December 27, 1990 (55 FR 53160). A 2015 petition to delist the species did not present substantial information to indicate that delisting the GCWA may be warranted (81 FR 35698). No critical habitat is designated for this species.

5.1 Life History

The GCWA is a small, insectivorous songbird (Pulich 1965 and 1976, Oberholser 1974). GCWAs breed exclusively in the mixed Ashe juniper/deciduous woodlands in central Texas west

and north of the Balcones Fault (Pulich 1976). GCWAs require the shredding bark produced by mature Ashe junipers (*Juniperus ashei*) for nest material. Typical deciduous woody species include Texas oak (*Quercus buckleyi*), Lacey oak (*Q. glaucoides*), live oak (*Q. fusiformis*), Texas ash (*Frazinus texensis*), cedar elm (*Ulmus crassifolia*), hackberry (*Celtis occidentalis*), bigtooth maple (*Acer grandidentatum*), sycamore (*Platanus occidentalis*), Arizona walnut (*Juglans major*), and pecan (*Carya illinoensis*) (Pulich 1976, Ladd 1985, Wahl et al. 1990). Breeding and nesting GCWA feed primarily on insects, spiders, and other arthropods found in Ashe junipers and associated deciduous tree species (Pulich 1976).

Male GCWA arrive in central Texas around March 1st and begin to establish breeding territories, which they defend against other males by singing from visible perches within their territories. Females arrive a few days later, but are more difficult to detect in the dense woodland habitat (Pulich 1976). Three to five eggs are generally incubated in April, and unless there is a second nesting attempt, nestlings fledge in May to early June (Pulich 1976). If there is a second nesting attempt, it is typically in mid-May with nestlings fledging in late June to early July (Pulich 1976). By late July, GCWA begin their migration southward to their wintering habitat (Chapman 1907, Simmons 1924). GCWAs winter in the highland pine-oak woodlands of southern Mexico and northern Central America (Kroll 1980).

In their breeding range, GCWA pairs have been found in habitat patches smaller than 25 acres; however, successful reproduction is more likely if patches of habitat exceed 37 acres (Arnold et al. 1996, Butcher et al. 2010). One study indicated that the probability of occupancy of a particular patch by GCWAs increases with increasing patch size, reaching a probability of 100 percent between approximately 400 and 500 acres (Collier et al. 2010). Reproductive success of GCWAs is higher in large, un-fragmented patches of habitat as compared to small, fragmented patches, and reproductive success increases as forest edge decreases (Maas-Burleigh 1998, Coldren 1998, Peak 2007, Reidy et al. 2009).

5.2 Historical and Current Distribution

GCWAs breed exclusively in the mixed Ashe juniper/deciduous woodlands of the Edwards Plateau, Lampasas Cut-Plain, and Llano Uplift regions of central Texas from March to August (Kroll 1980, Oberholser 1974, Pulich 1976). GCWAs have been confirmed breeding in 27 counties: Bandera, Bell, Bexar, Blanco, Bosque, Burnet, Comal, Coryell, Edwards, Gillespie, Hays, Johnson, Kendall, Kerr, Kimble, Kinney, Lampasas, Llano, Medina, Palo Pinto, Real, San Saba, Somervell, Travis, Uvalde, Williamson, and Young (Pulich 1976, Oberholser 1974). GCWAs have also been sighted in the following 9 counties: Dallas, Eastland, Erath, Hamilton, Hill, Hood, Jack, McLennan, and Stephens (Pulich 1976, Edwards and Lewis 2008). Diamond (2007) estimated that the amount of suitable GCWA habitat across the species' range was about 4.2 million acres. The population status for the GCWA on private lands, where most of its habitat occurs, remains undocumented throughout major portions of the breeding range.

In July GCWAs begin migrating southward from Texas through the Sierra Madre Oriental mountain range and winter in the mountainous regions (highlands) of southern Mexico (Chiapas)

and Central America (Guatemala, Honduras, El Salvador, and Nicaragua) (Ridgway 1902, Oberholser 1974, Pulich 1976, Perrigo and Booher 1994, Rappole et al. 1999, Komar 2008).

5.3 Reasons for Decline

Ongoing and imminent habitat loss continues to threaten the GCWA. Historically, the primary cause of habitat loss was juniper clearing to create pastures for cattle grazing (Pulich 1976). Other causes of habitat loss included cutting junipers for fence posts, furniture, and cedar oil. However, habitat loss in Travis, Williamson, and Bexar Counties is due to suburban development (Biological Advisory Team 1990, Groce et al. 2010). Furthermore, human population growth is projected to increase throughout the GCWA's range (Groce et al. 2010). As the human population continues to increase, so do associated roads, single and multi-family residences, and infrastructure, resulting in continued habitat destruction, fragmentation, and increased edge effects (Groce et al. 2010, Duarte et al. 2013).

Habitat models within the last decade estimate between 3.9 million (Duarte et al. 2013) to 4.1 million (Morrison et al. 2010) acres of potential GCWA habitat range-wide. Between 1999-2001 and 2010-2011 Duarte et al. (2013) found range-wide habitat loss to be 29 percent overall. In addition to this reduction, they found the GCWA breeding habitat became more fragmented. Groce et al. (2010) expects loss of available GCWA habitat within the breeding range will continue to occur.

Fragmentation is the reduction of large blocks of habitat into several smaller patches. While GCWAs have been found to be reproductively successful in small patches of habitat (<50 acres), there is an increased likelihood of occupancy and greater abundance as patch size increases (Coldren 1998, Butcher et al. 2010, DeBoer and Diamond 2006). Correlations also exist with increases in pairing and territory success with increasing patch size (Arnold et al. 1996, Coldren 1998, Butcher et al. 2010). In addition, while some studies have suggested that GCWAs occupy small patches that occur close to larger patches, the long-term survival and recovery of the GCWA is dependent on maintaining the larger patches (Coldren 1998, Peterson 2001, The Nature Conservancy 2002, Reidy et al. 2016).

As GCWA habitat fragmentation increases the amount of GCWA habitat edge, where two or more different vegetation types meet, also increases. For the GCWA edge is where woodland becomes shrubland, grassland, a subdivision, etc., and depending on the type of edge, it can act as a barrier for dispersal, act as a territory boundary, favor certain predators, increase nest predation, and reduce reproductive output (Lovejoy et al. 1986, Wilcove et al. 1986, Johnston 2006, Arnold et al. 1996). Canopy breaks (the distance from the top of one tree to another) as little as 36 feet can be barriers to GCWA movement (Coldren 1998). Territory boundaries not only will stop at edges, but GCWAs are more often farther from habitat edges (Beardmore 1994, DeBoer and Diamond 2006, Sperry 2007).

Additional threats to the GCWA breeding habitat include reduced oak recruitment due to herbivory from native and non-native animals, death of mature oaks from oak wilt, and the

potential for catastrophic wildland fires from increasing fine fuel loads and urban encroachment (Groce et al. 2010).

The ongoing destruction and fragmentation of pine-oak forests throughout the GCWA's migration and wintering habitat has been due to unsustainable forestry practices, fires from agricultural conversion, extraction of timber, and cattle ranching (Dinerstein et al. 1995, Redo et al. 2009, Groce et al. 2010). While some countries have a legal framework that encourages sustainable forestry, they still allow clearcutting, which results in forest fragmentation, reduced species diversity, and soil loss (Alliance for the Conservation of Mesoamerican Pine-oak Forest 2008).

5.4 Range-wide Survival and Recovery Needs

The recovery strategy outlined in the Golden-cheeked Warbler Recovery Plan (USFWS 1992), which is being revised, divides the breeding range of the GCWA into eight regions, or units, and calls for the protection of sufficient habitat to support at least one self-sustaining population in each unit. These recovery units were delineated based primarily on watershed, vegetation, and geologic boundaries (USFWS 1992).

Based on the Golden-cheeked Warbler Recovery Plan (USFWS 1992), and the 2014 Five-Year Review (USFWS 2014), protection and management of occupied habitat and minimization of degradation, development, or environmental modification of unoccupied habitat necessary for buffering nesting habitat are necessary to provide for the survival of the species. Habitat protection must include elements of both breeding and non-breeding habitat (i.e., associated uplands and migration corridors). Current and future efforts to create new and protect existing habitat will enhance the GCWA's ability to expand in distribution and numbers. Efforts, such as land acquisition and conservation easements, to protect existing viable populations is critical to the survival and recovery of this species.

Several state and federally owned lands occur within the breeding range of the GCWA, and a number of conservation and recovery actions are underway; however, the majority of the species' breeding range occurs on private lands that have been either occasionally or never surveyed. Currently there are five large GCWA populations receiving some degree of protection: those at the Balcones Canyonlands Preserve in Travis County; the nearby Balcones Canyonlands National Wildlife Refuge in Travis, Burnet, and Williamson counties; Camp Bullis Military Installation and TPWD's Government Canyon State Natural Area in Bexar County; and at Fort Hood in Bell and Coryell counties. There are also several conservation banks (CB) whose goal is to protect GCWA habitat (acreages represent the total if the entire bank of credits are sold): Hickory Pass CB (3,003 ac) in Burnet County, Bandera Corridor CB (6,946 ac) in Bandera and Real counties, Clearwater CB (21,305 ac) in Burnet County, and Festina Lente CB (1,147 ac) in Bandera County.

A Species Status Assessment for the GCWA is currently underway which, when complete, will inform GCWA recovery needs and assist in developing species management actions.

5.5 Previous Related Consultations

There have been 26 formal consultations for the GCWA from 2008—2023. Of these, 7 have been for development, 6 for new oil and gas pipeline construction, 3 for electrical transmission lines, 4 for roadway construction, 1 for a new communications tower, 1 for a water supply pipeline, 1 for subsurface mining, 1 for military operations, 1 for recreational facilities, and 1 for research purposes.

6.0 ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline.

The Action Area evaluated by the Service and considered within the BA includes areas that would be physically affected by construction of the entirety of the Project (e.g., construction ROW, operation easement, ATWS, temporary access roads, aboveground facilities). These differing action areas are described below as the USACE Action Area and the Applicant Action Area.

6.1 Overview of habitat types and conditions within the Project Area

The Project, which spans the Edwards Plateau, Rolling Plains, Crosstimbers, and Blackland Prairie ecoregions of Texas (TPWD, 2022e), would require 5,781.48 total acres of workspace, including 2,061.21 acres of permanent workspace (easement, access roads, and aboveground facilities) and 3,720.27 acres of temporary workspace and access roads. Five general habitat types are present in the Project area including agriculture, developed land, forest, open land, and thorn brush/shrubland. Each of these habitat types is described further below.

6.1.1 Agriculture

Agricultural land in the Project area consists of actively cultivated row crops, cultivated turf grass, and improved pasture utilized for livestock grazing and/or hay production. Routine dominant vegetation encountered within agricultural land use consists of field brome (*Bromus arvensis*), Bermudagrass (*Cynodon dactylon*), Virginia wildrye (*Elymus virginicus*), soybean (*Glycine max*), upland cotton (*Gossypium hirsutum*), sorghum (*Sorghum bicolor*), and Johnsongrass (*Sorghum halepense*).

6.1.2 Developed Land

Developed land includes industrial, commercial, and residential areas, as well as transportation corridors (e.g., roadways and railroads). Developed lands are typically either sparsely vegetated or lack vegetation due to the presence of impervious structures, such as cement foundations, pavement, or gravel pads and roads. Where vegetation is present, it typically consists of non-native or planted ornamental vegetation (e.g., lawn and landscaping species).

6.1.3 Forest

Forested habitats are generally more persistent beginning in the eastern counties located within the Rolling Plains ecoregion (Taylor and Callahan) and counties within the Crosstimbers ecoregion (Eastland, Erath, Hood, Johnson and Somervell counties). Forested locations exist beyond these ecoregions; however, they are generally more limited to riparian corridors. Routine dominant woody vegetation encountered within forested land consists of pecan (*Carya illinoensis*), common hackberry (*Celtis occidentalis*), common persimmon (*Diospyros virginiana*), Ashe juniper (*Juniperus ashei*), eastern redcedar (*Juniperus virginiana*), post oak (*Quercus stellata*), live oak (*Quercus virginiana*), cedar elm (*Ulmus crassifolia*), shin oak (*Quercus havardii*), Texas ash (*Fraxinus albicans*), and honey mesquite (*Prosopis glandulosa*).

6.1.4 Open Land

Open land is comprised of non-forested areas that are not otherwise classified as agriculture, including cleared land that may be grazed but with more herbaceous plant diversity when compared to monotypic hay fields. Common vegetative species observed within open habitats consist of ragweed (*Ambrosia* spp.), bluestem (*Andropogon* spp.), grama grass (*Bouteloua* spp.), hogwort (*Croton capitatus*), Bermudagrass, brome grasses (*Bromus* spp.), sandbur (*Cenchrus* spp.), and lovegrass (*Eragrostis* spp.).

6.1.5 Thorn Brush/Shrubland

Thorn brush/shrubland vegetation is most commonly associated with western portions of the Project located within the Edwards Plateau ecoregion. Routine dominant vegetation encountered consists of catclaw acacia (*Acacia greggii*), creosote bush (*Larrea tridentata*), Berlandier's wolfberry (*Lycium berlandieri*), lotebrush (*Ziziphus obtusifolia*), honey mesquite, yucca (*Yucca* spp.), and Texas sagebrush (*Leucophyllum frutescens*).

6.2 Status of the Species and Habitat within the Action Areas

The Project route crosses six counties within the documented range of the GCWA and crosses Recovery Units 1 and 2 (USFWS, 1992). A desktop evaluation was initially conducted for the Project by Doucet & Associates, Inc. (Doucet) within a 1,000-foot-wide review corridor utilizing recognized Geographic Information Systems (GIS) models to determine where potential habitat exists for GCWA. GIS models used during the desktop review included: 1) a spatiotemporal

model of range wide breeding habitat created by Adam Duarte of Texas State University; 2) a state-wide occupancy model for the use of management for the endangered songbird published by Texas A&M Institute of Renewable Natural Resources; and 3) internal models created by consultants with knowledge of the species. Doucet then overlaid the GIS models and bird occupancy data obtained from local resources, such as eBird, onto aerial imagery to create a spatial layer of potential habitat (results given in Table 6.1).

After completion of an initial desktop assessment, habitat suitability surveys were conducted by permitted biologists from Doucet & Associates, Inc. (Doucet; USFWS Endangered Species Permit #ESPER0004581) between July and October, 2022 to confirm the extent of suitable breeding habitat along the Project route. Additionally, habitat suitability surveys were conducted by permitted biologists in February and March 2023 along an approximate 16.6-mile segment of the route from MP 273.7 to MP 290.3 in Hood and Somervell counties that previously contained desktop assessed GCWA habitat due to a lack of access when the original version of the BA was prepared.

Table 6.1 below presents the amount of suitable GCWA habitat located within the review corridor by recovery unit and county, and a representative photograph of habitat is also included below as Figure 6.1.

Table 6.1 GCWA Habitat by County within 1,000' Project Review Corridor

County	GCWA Recovery Unit	Acres
Eastland	1	80.46
Erath	2	597.82
Ellis	N/A	0.00
Hood	2	105.19
Johnson	2	66.35
Somervell	2	130.17
Total		979.99



Figure 6.1. Representative Photograph of Suitable GCWA Habitat within Project Survey Area.

Note that actual presence/absence surveys for the species were not conducted for the Project. It is currently assumed that all confirmed suitable GCWA habitat is considered occupied. The full assessment results for the Project can be found in the *Golden-Cheeked Warbler Habitat Assessment for Midland Express Route* included as Appendix D of the BA document (Perennial 2023).

7.0 EFFECTS OF THE ACTION

In accordance with 50 CFR 402.02, effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of all other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (see §402.17).

Direct and indirect effects on the species may vary depending on many factors (e.g., duration and intensity of use, magnitude of impact, level of maintenance), but can generally be described as short-term or long-term. Short-term effects involve actions for which there is a level of understanding of the nature of effects that can be reasonably predicted. These effects are largely based on vegetation disturbance, recovery, and succession or duration of activities. Research suggests that GCWA populations are relatively resilient to direct harassment effects from human

activity (Hayden et al. 2009), such as infrequent ROW maintenance. Anticipated effects resulting from proposed activities are discussed below.

7.1 Factors to be considered

Issuance of a Nationwide Permit 12 from the Corps under Section 404 of the CWA is required for the construction, maintenance, and operation of this ~328 mile pipeline. The proposed action generally consists of two parts that potentially affect the GCWA : 1) the construction and installation of the pipeline and associated facilities, and 2) the long term maintenance of the installed facilities. The construction timeline will avoid the GCWA breeding (March 1 – August 31) and the Corps will have adequate Conservation Measures (section 3.3) in place should construction need to occur within GCWA habitat during the breeding season. Approximately 90% of the Project route would be seated immediately adjacent to existing and maintained utility ROWs, public roadways, and railroad easements in areas of suitable GCWA habitat, which is expected to reduce adverse effects to the species or its habitats.

7.1.1 Direct Effects

The BA estimates that ~117.06 acres of GCWA habitat will be cleared for construction of the proposed action. The construction process would remove habitat for the GCWA after the breeding season is complete (March 1 – August 31). Geolocator data utilized at Fort Cavazos (formerly Fort Hood) indicates that most GCWAs depart their nesting territories between the beginning of July through mid-August (John Macey, Fort Cavazos GCWA Biologist, pers. com. 09/20/2022); therefore, lingering adults and immature individuals would not be expected to be present. Thus, direct effects to nests and fledglings are not anticipated, and the resulting “take” from habitat lost to ROW would occur from habitat disturbance and fragmentation, which would affect feeding and sheltering birds, and likely be in the form of harm (50 CFR §17.3).

The clearing of areas for pipeline construction will traverse habitat in a linear 75-ft temporary and 50-ft permanent ROW and would be expected to displace breeding birds that may be using the habitats affected. GCWAs are highly territorial and show strong fidelity to breeding sites (Campbell 2003); that is, birds often return to their previous breeding territory after the winter season. Thus, habitat that is used by these species during the breeding season is still considered occupied when the species is on the wintering grounds. The removal of suitable breeding habitat for these species is a direct effect if the species is seasonally occupying the habitat. Habitat loss is a primary threat to the species. GCWAs are habitat specialists dependent on mixed-woodlands, from which woody vegetation provides the shelter, food, and nesting substrate and materials. The removal of woody vegetation from occupied habitats reduces the necessary components to support the species’ essential life history needs. Depending on the extent of vegetation removal, such actions would limit the available resources for the species, may result in reduced fitness, and may result in extirpation of the species from the affected area. The ultimate result of adverse effects to individuals may be impossible to calculate, but it is very likely that the effects would result in “take” to individuals in some capacity (e.g., reduced fitness,

territory abandonment, increased predation or exposure) due to modification and/or degradation of habitat previously utilized by the species. That is, the removal of vegetation or degradation of vegetation essential to the species life history needs is expected to adversely affect the species, to the level of take, depending on the size and duration of the impacts.

7.1.2 Indirect Effects

The BA estimates that ~182.82 acres of potential GCWA habitat occur within 300 feet of the edges of the proposed pipeline ROW. Indirect effects are anticipated in suitable habitats adjacent to cleared ROW. Because the habitat directly affected would be cleared outside of the majority of breeding season, indirect effects may occur upon the arrival of returning birds to the affected habitat. These effects include edge effects, habitat fragmentation, and displacement. Edge effects are particularly important to GCWA; increased edge density within GCWA habitat has been shown to result in a decline in nest survival (Peak 2007). The Service considers edge effects from habitat removal to extend 300-ft into adjacent GCWA habitat (Campbell 2003, Arnold et al. 1996). Depending on the size and configuration of the affected habitat patch with respect to the cleared ROW, adjacent habitat patches may be rendered too small to support GCWA, or support the species but at reduced densities and/or result in eventual extirpation (Morrison et al. 2010). Depending on the present density of birds and available habitat, returning birds to areas cleared for ROW may be forced to adjacent habitats, if available and unoccupied by other birds, and therefore may suffer the loss of productivity in subsequent breeding seasons. Fragmentation of habitat resulting from the ROW is particularly harmful to the GCWA, which may not cross cleared corridors >10 meters (32 feet) in width (Horne 2000) and may result in reduced productivity associated with smaller habitat patches (Maas-Burleigh 1998, Coldren 1998). The degree of impacts stemming from increased fragmentation on existing habitat patch size will vary along the Warrior Pipeline corridor and depend on: 1) habitat patch size, 2) the extent the MXP intersects any particular patch, and 3) the amount of existing fragmentation already affecting any particular patch. In general, we anticipate smaller patches to be affected more due to fragmentation (i.e. experience less reproduction/nest success/survival due to increased edge to patch size ratio), and those larger, less fragmented patches to be affected to a lesser degree.

Maintenance of the permanent ROW (managing vegetation) would be planned outside of the GCWA breeding season (Conservation Measures, section 3.3). As such, effects from this activity to the GCWA are not anticipated.

7.2 USACE Action Area Effects Analysis

7.2.1 Potential Impacts

Construction of the proposed Project would directly affect 68.3 acres of GCWA breeding habitat (Recovery Units 1 and 2) within USACE Action Areas. Direct effects for the Project were calculated by assessing permanent easement, temporary workspace, and ATWS needs through

these forested locations. All clearing of GCWA breeding habitat is presented in Table 7.1 and would be mitigated for accordingly as discussed below in Mitigation Measures.

In addition to contributing to direct loss of habitat along the existing corridor through further clearing operations during initial construction, it is anticipated that indirect effects would also be increased in areas of adjacent habitat. Indirect effects to the GCWA are considered to extend 300 feet into habitat adjacent to potential breeding habitat. Since areas of habitat not directly impacted (removed) by the project will be constructed outside of the breeding season, Project specific consequences were calculated by applying a 300-foot buffer to the workspace resulting from all direct impacts to habitat. All resulting indirect effects to the GCWA from the Project are presented in Table 7.1 and would be mitigated for accordingly as discussed below in Section 7.4 Compensation Offset.

Table 7.1. Total Amount of GCWA Habitat within Affected Counties in USACE Action Areas

County	Estimated Breeding Habitat (acres)*	Acres of Assumed Breeding Habitat Directly Impacted by Project	Acres of Assumed Breeding Habitat Indirectly Impacted by Project	Percent of Breeding Habitat Impacted by the Project (Both Directly and Indirectly)
Eastland	73,447	4.37	3.59	0.01
Ellis	0.00	0.00	0.00	0.00
Erath	151,157	41.91	44.37	0.06
Hood	68,017	9.10	16.03	0.04
Johnson	25,223	6.11	4.58	0.04
Somervell	48,984	6.78	10.17	0.04
Total	366,828	68.27	78.74	0.04

*Estimated from a model developed by Duarte et al (2013)

As noted above, the majority of the Project would be collocated. Approximately 90% of the Project route would be seated immediately adjacent to existing and maintained utility ROWs, public roadways, and railroad easements in areas of suitable GCWA habitat.

7.3 Applicant Action Area Effects Analysis

7.3.1 Potential Impacts

Construction of the proposed Project would directly affect 48.5 acres of GCWA breeding habitat (Recovery Units 1 and 2) within Applicant Action Areas. Direct effects for the Project were calculated by assessing permanent easement, temporary workspace, and ATWS needs through these forested locations. All clearing of GCWA breeding habitat is presented in Table 7.2. Indirect effects were also calculated using a 300' buffer from all direct impacts to habitat.

Table.7.2. Total amount of GCWA habitat within affected counties in Applicant Action Areas

County	Estimated Breeding Habitat (acres)*	Acres of Assumed Breeding Habitat Directly Impacted by Project	Acres of Assumed Breeding Habitat Indirectly Impacted by Project	Percent of Breeding Habitat Impacted by the Project (Both Directly and Indirectly)
Eastland	73,447	0.56	2.74	0.01
Ellis	0.00	0.00	0.00	0.00
Erath	151,157	25.47	59.70	0.06
Hood	68,017	6.27	11.16	0.03
Johnson	25,223	3.81	5.76	0.04
Somervell	48,984	12.68	24.72	0.1
Total	366,828	48.79	104.08	0.05

*Estimated from a model developed by Duarte et al (2013)

7.4 Compensation offset

Warrior is proposing to compensate for unavoidable impacts to GCWA habitat during construction of the Project utilizing ratios consistent with Service practice. Direct impacts would be mitigated for using a 2:1 (the ratio generally used for medium quality habitat) and 0.5:1 for indirect impacts.

7.4.1 USACE Action Area Impacts

Withing the USACE Action Area, construction of the Project would directly impact 68.3 acres of habitat and indirectly impact 78.7 acres of habitat. These impacts would result in the need to acquire 136.6 mitigation acres for direct impacts and 39.4 acres for indirect impacts (176 acres total).

7.4.2 Applicant Action Area Impacts

Withing the Applicant Action Area, construction of the Project would directly impact 48.8 acres of habitat and indirectly impact 104.1 acres of habitat. These impacts would result in the need to acquire 97.6 mitigation acres for direct impacts and 52.1 acres for indirect impacts (149.7 acres total).

To compensate for impacts within the USACE and Applicant Action Areas, Warrior is proposing to purchase 325.7 credit acres from a Service-approved GCWA habitat conservation bank. The Service recommends consideration be given to purchase of credit acres through the Conservation Fund to acquire lands adjacent to the Balcones Canyonlands Nation Wildlife Refuge (BCNWR) discussed in Section 9 Conservation Recommendations of this document. Compensation would be purchased prior to habitat impacts and is specific to the USACE Action Area.

7.5 Cumulative Effects

Cumulative effects are those “effects of future State or private activities, not involving federal activities, that are reasonably certain to occur within the action area” considered in this opinion (50 CFR 402.02). Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the ESA (USFWS, 1998). Cumulative effects on federally listed species may occur where state, tribal, local, or private actions that are reasonably certain to occur are constructed in the Action Area and would affect federally listed species directly or indirectly.

The geographic scope for cumulative impacts to species habitat, primarily the GCWA, that may be affected by construction and operation of the Project was limited to Eastland, Erath, Hood, Johnson, Somervell, and Ellis counties. Within Eastland County, communications with the county judge revealed that he was aware of proposed transmission line and wind energy facilities within western and central portions of the Project (Fields, 2022). Within Erath County, communications with the Environmental Health Department did not reveal any proposed large-scale projects that would contribute to cumulative impacts within the county (Bailey, 2022). Within Hood County, communications with the Director of Development, Floodplain Administrator revealed that a solar farm in the eastern portion of the county was proposed for construction, but has since been placed on hold (Head, 2022). Perennial Environmental Services attempted to contact representatives from Ellis, Johnson, and Somervell counties, but have not received feedback to date.

TxDOT’s Project Tracker website was also reviewed by Perennial Environmental Services to determine if any significant roadway expansion projects in proximity of the route are scheduled to begin within the next four years. Upon review, only roadway improvement projects such as resurfacing, seal coating, and hazard elimination and were identified (TxDOT, 2022). Maintenance activities such as these are not anticipated to contribute to cumulative impacts towards T&E species located within proximity of the Project.

7.6 Conclusion

After reviewing the current status of the GCWA, the environmental baseline for the action areas, the effects of the proposed action, and the cumulative effects, it is our biological opinion that the project, as proposed, is not likely to jeopardize the continued existence of the GCWA. No critical habitat has been designated for this species; therefore, none will be affected.

We based this conclusion on the following:

1. The total amount of direct removal of GCWA habitat estimated within the USACE Action Areas and Applicant Action Areas is 117.06 acres, while an additional 182.82 acres are within the 300-foot buffer and subjected to indirect effects. This total of 299.88 acres represents ~0.08 percent of the available GCWA breeding habitat based upon the most recent estimate in Eastland, Erath, Hood, Somervell, and Johnson counties spanning

the Project area in GCWA Recovery Units 1 and 2 (Duarte et al. 2013). Likewise, impacts would occur within a very small portion of the species entire breeding range.

2. Warrior proposes to mitigate for the loss and degradation of GCWA breeding habitat associated with the Project utilizing ratios consistent with Service practice, further minimizing potential cumulative impacts by ensuring land containing GCWA habitat is preserved.

The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any conservation measures that were incorporated into the project design.

8.0 INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. “Take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. “Harm” is further defined (50 CFR § 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. “Harass” is defined (50 CFR § 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. “Incidental take” is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the USACE as appropriate, for the exemption in section 7(o)(2) to apply. The USACE has a continuing duty to regulate the activity covered by this incidental take statement. If the USACE (1) fails to assume and implement the terms and conditions or (2) fails to require the Applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the USACE and/or the Applicant must report the progress of the action and its impact on the species as specified in the incidental take statement. [50 CFR §402.14(i)(3)].

8.1 Amount or Extent of Take Anticipated

The majority of direct impacts to habitat for the GCWA from the construction process would occur after the breeding season is complete; i.e., birds that would be present at the time of the habitat removal would be lingering adults and immature individuals. Thus, direct effects to nests

and fledglings are not anticipated, and the resulting “take” from construction would occur from habitat loss, degradation, and fragmentation, which would significantly affect breeding, feeding and sheltering birds, and thus, take would be in the form of harm (50 CFR §17.3).

The Service anticipates GCWA occupying 299.88 acres of habitat will be adversely affected, with 117.06 acres of GWCA breeding habitat lost as a result of this proposed action. Take in the form of harm is difficult to quantify and usually cannot be reliably estimated in terms of numbers of individuals. However, because the area of habitat for the species is known within the action area, the maximum amount of incidental take allowed under this biological opinion is given in terms of habitat area. Using habitat as a surrogate for incidental take of individuals is consistent with section 7 implementing regulations at 50 CFR 402.14(i)(1)(i) for the following reasons. Habitat occupied by the species encompasses all seasonal life requisites and life stages. Harm to the species within its habitat cannot be quantified for individuals without exhaustive surveys, but is anticipated for those individuals that would be exposed to the proposed action; this is best accounted for by measuring the area where adverse effects would occur. Incidental take in the form of harm is estimated to be the amount of habitat for the species directly removed and exposed to indirect effects related to pipeline and ROW construction within GCWA habitats outside the breeding season.

In addition, the area of habitat affected by a particular action is a relatively stable metric of take, compared to the number, size, and location of individual birds or bird territories in the area, which may vary from year-to-year. Further, the effects of a given activity may not be fully realized in a single season but rather spread over several seasons or even many years, during which the species’ utilization of a given area may vary quite significantly for reasons unrelated to the action itself. Variability is influenced by species preferences or environmental factors that may include natural year-to-year variations in the precise habitat utilized by individual birds, variations in individual bird behavior that influence detectability, variations in the ability of surveyors to detect and accurately map individual birds, survey methodology, and other factors. For these reasons, it is not possible to predict the precise number of GCWA that may be “taken” over time as a result of the proposed actions covered in this opinion. Therefore, incidental take is provided as GCWA habitat loss in acres. It is expected that 117.06 acres of GCWA breeding habitat will be directly affected by vegetation clearing, and another 182.82 acres may be affected such as to result in decreased use of the area for breeding, feeding, and sheltering and may reduce reproductive output, although complete abandonment may not occur. Incidental take of GCWA occupying these areas is expected to occur over the duration of the action.

8.2 Effect of the Take

In the accompanying biological opinion, we have determined that the level of anticipated take is not likely to result in jeopardy to the GCWA. Although we anticipate incidental take to occur, the implementation of the conservation measures proposed should ultimately result in avoidance and minimization of adverse effects.

8.3 Reasonable and Prudent Measures

All conservation measures including avoidance and minimization measures and mitigation efforts are incorporated herein by reference as reasonable and prudent measures and terms and conditions to address the incidental take of the GCWA. No additional reasonable and prudent measures were identified during the consultation for the Warrior Pipeline Project.

8.4 Monitoring and Reporting

Warrior/USACE shall provide annual reports to the Service for all construction activities implemented under this biological opinion by January 15 of the following year, and continue until the calendar year after all construction has been completed. Spatial information (maps) may be submitted in GIS format. The reports should include the following information:

1. Dates the activities occurred
2. Information concerning the implementation of conservation measures, including acquisition of mitigation lands
3. Total area and spatial configuration of affected area
4. Maps delineating project and species habitats
5. Results of all studies and surveys described in this opinion
6. Other pertinent information

The Service understands that unforeseen factors (such as pandemics) may arise that complicate or prevent the availability of certain annually-reported information. USACE will coordinate with the Service if such factors arise.

8.5 Disposition of Dead or Injured Listed Species

Upon locating a dead, injured, or sick listed species initial notification must be made to the Service's Law Enforcement Office, Fort Worth, Texas, (817) 334-5202, within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve the biological material in the best possible state.

9.0 CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The preservation of land is the best method for minimizing long-term harm to the species and addressing the threat faced by the species from loss and fragmentation of habitat. Golden-cheeked warbler breeding habitat cannot be created or restored in a meaningful timeframe. The mature woodlands used by the species takes decades to grow. Absent the option to grow or restore habitat, protection of high-quality habitat is the best approach for conservation of breeding habitat over the long-term. The continued loss of habitat for the GCWA in north central Texas is an ongoing concern to the Service due to the limited availability of habitat (compared to more southern and western areas) and the lack of mitigation resources available in the affected recovery units. Thus, we recommend the USACE investigate the potential to coordinate mitigation efforts such as those pledged for this project with other pipeline projects under USACE review, both ongoing and in the future to seek opportunities to acquire adjacent blocks of GCWA habitat, preferably those adjacent to existing protected habitat (e.g. the Balcones Canyonlands National Wildlife Refuge (BCNWR)). A voluntary monetary donation by the applicant to The Conservation Fund would allow for at least a 325.7-acre tract of suitable GCWA habitat to be added to lands already owned and managed by the BCNWR. This conservation measure will help to offset impacts of this project via the protection of large, contiguous areas of habitat, versus the linear nature of the impacts. Another acceptable method of offsetting impacts to GCWA habitat along linear projects is through purchase of credits from a Service-approved conservation bank. Currently, there are no approved conservation banks with primary service areas that include the GCWA habitat impact area. However, the use of a secondary service area from a conservation bank may be permissible, provided the bank is in good standing, the credit transaction is allowable under the Conservation Banking Agreement, and no other mitigation options exist or are feasible. In such a situation, the purchase of 325.7 credits from a conservation bank would also maintain compliance with Section 7(a)(1) of the Act.

The Service (2013) requires a minimum of 500 acres of habitat for GCWA conservation banks and mitigation properties and, in combination with the surrounding properties already owned by the BCNWR, it enlarges the contiguous habitat that is under the protection and management of the BCNWR. Large, contiguous areas of high-quality habitat have less habitat edge (i.e., fragmentation), which means individuals are less likely to be affected by disturbance including those caused by noise and predators. The conservation of larger habitat areas is also beneficial for the species because where smaller, fragmented, and, therefore, lower quality habitat with a lower density of GCWAs is lost to development, individuals will have access to high quality habitat that will be reliably available every year. The Service considers the species able to tolerate the loss of poorer quality habitat when offset with larger acreages of permanently protected high quality habitat. This is the concept that underlies the conservation banking strategy, which the Service approves of under the requirements established for GCWA conservation banks and mitigation lands (Service 2013). Warblers are known to return to territories where they were successful. Having permanently protected habitat secures their long-term breeding potential.

For the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

10.0 REINITIATION NOTICE

This concludes formal consultation on the proposed Warrior Pipeline Project. As provided in 50 CFR §402.16, reinitiation of consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this biological opinion or written concurrence; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your ongoing coordination in the conservation of our natural resources. Please refer to the consultation number, 2023-0026435 in future correspondence concerning this project. If you have any questions about this consultation, or we can be of additional assistance, please contact me (omar_bocanegra@fws.gov) or Sean Edwards (sean_edwards@fws.gov).

Sincerely,

Omar Bocanegra
Acting Field Supervisor

CC: Christina Williams, USFWS, Austin, TX (e-copy)
Laura Zebehazy, TPWD, Austin, TX (e-copy)

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Appendix A

Process for Section 7 Consultation in Small Federal Handle Situations

The agreement in principle outlined below applies to situations where both of the following conditions apply: (1) where there is a legitimate Federal nexus to the larger project via activities subject to Clean Water Act or Rivers and Harbors Act of 1899 jurisdiction that cannot be avoided (i.e., but for the federal permit, the larger action could not occur); and (2) where the effects considered within the biological assessment and biological opinion are all appropriately within the scope of a section 7 consultation (i.e., the direct and indirect effects of the federal action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, and including consideration of cumulative effects).

- The Corps will provide the Service with a Biological Assessment (BA) for a proposed action that evaluates the larger project as a whole and is inclusive of all anticipated effects of the larger project (including those resulting from interrelated or interdependent activities) to listed species and critical habitat, along with consideration of cumulative effects. However, in situations where the Corps' involvement is limited to a small component of the larger project, in the BA the Corps will clearly distinguish between the areas and activities within the Corps' jurisdiction and the areas and activities outside the Corps' jurisdiction. The BA will also clearly distinguish between effects to listed species and designated critical habitat within and outside the Corps' jurisdiction.
- If the BA outlines avoidance and minimization measures that may lead to a "not likely to adversely affect" determination for the entire project, the Corps will work with the Service to finalize the informal consultation. The Corps may ask the Service to work directly with the permit applicant to develop avoidance and minimization measures, but the Corps will provide the final letter requesting concurrence regarding the determination of "may affect, not likely to adversely affect" for the project.
- For formal consultations, the Service will issue a biological opinion that evaluates all components of the larger project, including the effects of the larger project on listed species and critical habitat. Take that is anticipated to result from the larger project that is not likely to jeopardize the continued existence of a species, or that results from implementing a reasonable and prudent alternative in order to avoid the likelihood of jeopardy, will be addressed through an incidental take statement included with the biological opinion. As noted in section 7(o)(2), "any taking that is in compliance with the terms and conditions specified in . . . [an incidental take statement] shall not be considered to be a prohibited taking of the species concerned." The Service will identify in the incidental take statement what reasonable and prudent measures (RPMs) address impacts of activities within the Corps' jurisdiction and thus

which the Corps must implement through its permit. The Service will likewise identify those RPMs that address impacts of the larger project outside of the Corps' jurisdiction and will specify that they must be implemented directly by the applicant if the take exemption is to apply.

- The Corps will oversee compliance with RPMs, including monitoring and reporting the impacts of incidental take, that apply to the activities within its jurisdiction. For RPMs that apply to activities outside of the Corps' jurisdiction, the Service will monitor the impacts of the incidental take through reports submitted by the applicant on the progress of the action and its impact on the listed species, as specified in the incidental take statement. The Corps is required to request reinitiation of section 7 consultation when triggered by one of the reinitiation factors listed at 50 C.F.R. § 402.16 and "where discretionary Federal involvement or control over the action has been retained or is authorized by law." Reinitiation is triggered by, among other factors, exceedance of the extent of taking specified in the incidental take statement regardless of where such taking occurs.
- If the Corps never had or no longer retains discretionary Federal involvement or control over incidental take anticipated in the biological opinion, but the applicant is carrying out the action in full compliance with the associated incidental take statement, the Service will exercise its enforcement discretion and not seek section 11(e) enforcement against the applicant in these situations for the take that was anticipated in the incidental take statement. However, we recognize that the applicant in those situations will face some exposure to a citizen suit brought under section 11(g).
- The process outlined above will also apply to species and critical habitat addressed through conference opinions, as appropriate.