

Technical Memorandum

To: Nathan Pence, Executive Manager of Environmental Science
(Guadalupe-Blanco River Authority)

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Date: September 9, 2022

Subject: Covered Activities for the Guadalupe River Habitat Conservation Plan and Incidental Take Permit

INTRODUCTION

The purpose of this memorandum is to provide a preliminary list of potential covered activities for the Guadalupe-Blanco River Authority's (GBRA's) Guadalupe River Habitat Conservation Plan (GRHCP) and Incidental Take Permit (ITP). The term "covered activities" as used in this memorandum refers to those projects and actions for which GBRA anticipates seeking incidental take authorization from the U.S. Fish and Wildlife Service (USFWS) under Section 10 of the Endangered Species Act (ESA), and for which the GRHCP would provide avoidance, minimization, and mitigation for adverse effects on covered species and their habitats. The identification, description, and subsequent quantification of covered activities is one of the building blocks of the GRHCP and contributes directly to the analysis of impacts.

Potential covered activities described in this memorandum are draft and preliminary in scope and include projects and actions that GBRA currently expects to engage in or to authorize (through a second party process) within the GRHCP plan area during the proposed permit term (duration) of the GRHCP. With that stated, the list of potential covered activities could increase pending discussions with engaged second party take stakeholders. Additionally, it has not been established that the activities identified here will definitively result in incidental take of covered species. The GRHCP Project Team will continue to evaluate these activities to determine their potential for taking covered species in order to verify that these activities should be covered and to subsequently conduct an impact assessment. The list of covered activities will be revised as these evaluations progress and as new GBRA and/or second party activities are identified. At this time, it is assumed that second party take activities are potentially similar to GBRA's. This memorandum will also be reviewed by the USFWS to verify that they concur with the list and descriptions of the covered activities.

AGENCY GUIDANCE

Chapter 5 of the joint USFWS and National Marine Fisheries Service (NMFS) "Habitat Conservation Planning and Incidental Take Permit Processing Handbook" (HCP Handbook) (USFWS and NMFS 2016) provides guidance on identifying, analyzing, and describing covered activities, and evaluating alternatives to the proposed taking from covered activities. As noted in the HCP Handbook, to be eligible for incidental take authorization, covered activities must meet the following criteria:

1. **Otherwise lawful:** Projects and activities that may legally be carried out provided the permittee complies with other local, state, and federal laws
2. **Non-federal:** Projects and activities that are not carried out by a federal agency and do not occur on federal land; and
3. **Direct control:** Projects and activities that are under the direct control of the permittee through jurisdictional authority, employment, contracts, leases, land ownership, or similar mechanisms that establish controlling authority.

In practice, and with respect to the HCP Handbook, there are several aspects of covered activities relevant to their inclusion in an HCP. Covered activities may be permanent or short term (temporary), have direct or indirect effects, and may be of any scale. Covered activities may include subcomponents, and a process for identifying the mechanisms for take within subcomponents is necessary for the subsequent impact analysis (the USFWS Effects Pathway Model provides an example of how connections between covered activity subcomponents and species impacts can be made). The effects of covered activities can be considered in combination with minimization measures that are developed, and these measures may eliminate the possibility of take from certain activities and thus the need for inclusion of those activities, or mitigation for those activities, in an HCP. And finally, conservation measures and research and monitoring activities should also be included as covered activities because they often have the potential for short-term, low levels of take. Mitigation will not be required for any small, temporary impacts of conservation measures or monitoring, but they should be included as covered activities so that any take associated with them are included in the ITP.

An HCP can also list certain projects or activities that are excluded from coverage. There may be specific projects or activities that do not need ESA coverage in an HCP or are too speculative to include in an HCP. Similarly, projects or activities that a permittee wishes to specifically exclude from an HCP should also be listed as excluded, along with a short description of why they are excluded.

PERMITTEES

GBRA will be the sole permittee on the ITP; however, GBRA plans to incorporate a second party take program into the GRHCP, which would extend GBRA's take authorization (e.g., through a Certificate of Inclusion process or similar enrollment program) to second parties whose activities may also be eligible for take authorization. At this time, second party participants and activities have not been identified in any detail, so the covered activities discussion below focuses on GBRA's activities. However, preliminary assumptions regarding potential second party activities are also discussed below. GBRA will be initiating a process of engaging stakeholders to participate in a second party take program. This process, which includes a timeline, is outlined in the "*Second Party Take Options for Coverage and Next Steps for Initiating the Stakeholder Involvement Process*" Technical Memorandum. Therefore, as stated, the list of potential covered activities could increase pending discussions with engaged second party take stakeholders.

POTENTIAL COVERED ACTIVITIES FOR THE GRHCP

Methodology

GBRA and the GRHCP Project Team compiled an initial list of potential covered activities as follows:

- Reviewing a list of activities and facilities provided by GBRA during project scoping;
- Reviewing Geographic Information System (GIS) data files showing GBRA's existing facilities and their locations in relation to known locations and potential habitats for anticipated covered species;
- Holding a one-day workshop on October 18, 2021, during which GBRA's management and operations staff and GRHCP Project Team members discussed GBRA's existing facilities and operations, as well as foreseeable future projects.

The initial list of activities was evaluated using the five criteria described below. To be selected as a covered activity, a project or activity must meet these criteria. GBRA and the GRHCP Project Team will continue using these criteria to evaluate covered activities during GRHCP development:

1. **Location** – The activity will be within the plan area. **Attachment 1** shows the current plan area.
2. **Timing** – The activity will occur during the permit term. At this time, GBRA is evaluating activities for a maximum permit term of 50 years.
3. **Impact** – The activity has a reasonable likelihood of resulting in take of one or more covered species. **Attachment 2** identifies the 12 species that are currently proposed to be covered species in the GRHCP.
4. **Control** – The activity is, or could be, under the direct control or jurisdiction of GBRA. This includes second party activities that are addressed by the GRHCP through a second party take program.
5. **Data** – The activity is reasonably foreseeable, and there is sufficient information that the activity and its impacts can be evaluated in the GRHCP to a level that satisfies the USFWS.

Relative to the *Impact* criterion, an April 26, 2018 USFWS memorandum provides guidance to help evaluate when an ITP may be warranted (USFWS 2018). The memorandum includes a questionnaire and flow chart that help determine if an activity has a reasonable likelihood of resulting in take. Although the memorandum was designed to answer the question of whether or not an ITP is needed, its guidance is also helpful in the selection of covered activities to include in the ITP. A copy of the questionnaire and flow chart is provided as **Attachment 3**.

In this initial evaluation, it is necessary to understand the anticipated covered species enough to evaluate the potential for an activity to affect them, including the species' potential distribution in the plan area, their potential habitats, and how they may be affected by potential activities. **Attachment 2** summarizes this information for the 12 anticipated covered species.

Potential Covered Activities – GBRA

Table 1 provides a preliminary list of GBRA’s potential covered activities, which have been grouped based on similar activity types along with a preliminary assessment of their potential for impacting the covered species. As noted earlier, this list is preliminary, and it has not been determined that all the listed activities will definitively result in incidental take of covered species. GBRA and the GRHCP Project Team will continue to evaluate these activities, as well as other activities that are identified, relative to the five criteria discussed above and will revise the list as needed.

Most activities will have three main phases—construction, operations, and maintenance—each of which will differ in their potential to affect covered species or their habitats. Although, some activities may only be covered for 1 or 2 of the phases. In addition, decommissioning of facilities should be considered for inclusion in the GRHCP if foreseeable during the permit term.

1. **Construction** – This phase includes the design, planning, and construction of new facilities and the expansion of existing facilities regardless of the type of facility being constructed. The construction phase of covered activities may affect species mainly by removing or disturbing habitat or individuals that are in or immediately adjacent to the footprint of the construction activity. Many of GBRA’s existing and potential future facilities will not be located in or adjacent to habitat for covered species. In-stream construction activities also have the potential to affect covered species farther downstream of the construction footprint, depending on the construction methods and duration of activities.
2. **Operations** – The operations phase of many activities has low potential to affect covered species because operations occur mainly within the footprint of existing infrastructure. Some operations, however, have the potential to affect covered species because the operations themselves affect potential habitats. Examples of such operations include some water diversions from the Guadalupe River, water deliveries via the bed & banks of the Guadalupe River, and some wastewater discharges that reach the river in, near, or upstream of habitat for the covered species.
3. **Maintenance** – Many maintenance actions may have a low potential to affect covered species because they often occur within or adjacent to the footprint of existing infrastructure. However, some examples of maintenance actions that could affect covered species or their habitats include repairing in-water infrastructure and mowing utility corridors or levees in or adjacent to habitats.
4. **Decommissioning** – Like construction, decommissioning and/or removal of structures, including hydropower facilities, may affect covered species by disturbing habitats or individuals that are in or immediately adjacent to the work area. In addition, removal of in-stream structures and activities such as dams, gates, water diversions, and wastewater discharges has the potential to affect covered species farther downstream of the activity. Effects on covered species from decommissioning may be both adverse and beneficial (e.g., removing an in-stream structure may have a temporary adverse effect during the removal work, yet a long-term benefit to aquatic species/habitat).

Within some activity categories, sub-activities and/or individual sites and facilities will not meet all of the evaluation criteria listed above and thus will not require coverage. For example, some individual sites and

facilities may only impact localized areas where no covered species or habitats occur, some wastewater discharges may not affect covered species due to their location in relation to the species/habitats, and some activities can incorporate measures that eliminate the possibility of take. As such, GBRA anticipates reviewing covered activities, sub-activities, and associated facilities on a case-by-case basis, and activities, sub-activities, or facilities that do not have potential to take listed species will not be quantified as impacts.

Table 1. Preliminary List and General Description of Potential Covered Activities to Evaluate for the GRHCP and ITP (detailed descriptions will follow later in first working draft of Covered Activities chapter of the activities selected for coverage)

Activity Category/Type	General Description	Considerations for Effect to Covered Species
Water Supply Impoundment, Production, Diversion and Delivery: Use of water rights to divert, treat, and transport water to supply municipal, industrial, agricultural, and other water needs from GBRA-owned and/or operated facilities.		
Groundwater Withdrawals	Existing or new groundwater pumping from either the Trinity or Carrizo-Wilcox aquifers.	Dependent on effects to spring flows, surface water / groundwater interactions, and overall flows in the Guadalupe River, including timing of flow changes as they related to life-history of covered aquatic species.
Water Diversion	Removal of water from the Guadalupe River, including operations, maintenance, and management of existing and future intake structures, gates, canals, and bayous used to divert water.	In-water infrastructure construction and O&M, including diversion gates and canals; changes to downstream flows that may affect habitats. Impingement and entrainment of fish and aquatic organisms at intake screen and other infrastructures.
Treatment Facilities	Construction (new or expansion), operations, maintenance, or decommissioning, as applicable, of existing and future water treatment facilities.	Construction, O&M of treatment plants and related facilities in and adjacent to habitats.
Storage Facilities	On-site water storage facilities at future water treatment facilities.	Wetlands likely to be created in association with GBRA's Mid-Basin Water Supply Project providing habitat opportunities for the migrating whooping crane.
Chemical Storage	On-site storage of chemicals, such as chlorine, at existing and future water treatment facilities.	Spills/releases to aquatic or other sensitive habitats.
Transport/Delivery - Pipelines - Canals	Construction (new or expansion), maintenance, and repair of water pipelines, or mowing pipeline corridors. Mowing existing canal levees, repairing levees, cleaning out canals, dewatering.	Activities in and adjacent to habitats: - Construction and repair of water pipelines; mowing pipeline corridors. - Mowing existing canal levees, repairing levees, cleaning out canals, dewatering.
Wastewater Treatment/Discharges: Collection and treatment of wastewater and discharge of treated effluent from GBRA owned and or operated facilities.		
Transport/Lift Stations	Construction (new or expansion), operations, maintenance, and or decommissioning, as applicable, of existing and future transport pipelines and lift stations associated with the wastewater treatment facilities.	Construction of transport pipes and lift stations in and adjacent to habitats; failure of lift stations resulting in discharges to aquatic habitats.

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Activity Category/Type	General Description	Considerations for Effect to Covered Species
Treatment Facilities	Construction (new or expansion), operations, maintenance, or decommissioning, as applicable, of existing and future wastewater treatment facilities.	Construction, O&M of treatment plants and related facilities in and adjacent to habitats.
Chemical Storage	On-site storage of chemicals, such as sodium hydrochloride, chlorine, aluminum, polymers, or salts, as applicable, at existing and future wastewater treatment facilities.	Spills/releases to aquatic or other sensitive habitats.
Discharges to Receiving Waters	Discharges of treated effluent that meet or exceed Texas Commission on Environmental Quality (TCEQ) permit standards and discharged as authorized by TCEQ permits. Receiving waters include tributaries of the Guadalupe River and Cibolo Creek.	Changes to downstream water quality.
Land Application of Effluent	Land application of effluent to irrigate golf course(s), and in common areas in certain developments.	Dependent on proximity to species habitats and potential for runoff.
Land Application of Sludge	Land application of biosolids (from sludge removal) in Cibolo Creek watershed.	Dependent on proximity to species habitats and potential for runoff.
Operation and Maintenance of Dam Facilities, including the Reconstruction of Failed Structures: In-stream dams and associated power-generation plants and other infrastructure from GBRA-owned and/or operated facilities.		
Multi-Purpose Dam	Operations of water storage portion only of Canyon Lake and releases from Canyon Dam within the “conservation pool” between 800 feet mean sea level (msl) and the normal operating level of 909 msl, and of the hydroelectric facility.	O&M of infrastructure in and adjacent to habitats.
Non-hydroelectric Dams	Please see discussion under “Saltwater Barrier” below.	O&M of structure and infrastructure in and adjacent to habitats; decommissioning and removal if foreseeable during permit term.
Hydroelectric Dams	Operations, maintenance, decommissioning, or removal, as applicable, of existing hydroelectric dam facilities.	O&M of infrastructure in and adjacent to habitats; decommissioning and removal if foreseeable during permit term.

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Activity Category/Type	General Description	Considerations for Effect to Covered Species
Power Plants	Existing intakes, discharges, and infrastructure operations and maintenance to support power plant cooling operations.	Intakes, discharges, and other O&M of infrastructure in and adjacent to habitats; decommissioning and removal if foreseeable during permit term.
Distribution Lines	Construction (new or expansion), operations, and maintenance of power transmission lines.	Clearing of habitats; avian collisions with overhead transmission lines.
Other In-stream Infrastructure: Various localized infrastructure in the Guadalupe River or major tributaries owned and/or operated by GBRA.		
Saltwater Barrier	Operation, maintenance, and management of the Saltwater Diversion Dam used to prevent saltwater intrusion upstream.	O&M of structure itself.
Siphon and Gates	Construction (replacement or new), maintenance, and operations of (1) radial gate structures used to prevent saltwater intrusion upstream on Goff and Hog Bayous and (2) siphons associated with canal system. For discussion of related canal system operations and maintenance, please see discussion under “Dredging/Placement of Dredged Material in Floodplain.”	Impact habitats in or adjacent to sites.
Flood-control Structures	See discussions under “Multi-Purpose Dam,” “Non-hydroelectric Dams,” “Saltwater Barrier,” and Siphon and Gates.”	Impact habitats in or adjacent to sites.
Water Management Activities: Various activities related to managing water in the Guadalupe River or major tributaries from GBRA-owned and/or operated facilities.		
Flood Management	Activities include the releases from Canyon Lake. GBRA is responsible for managing the releases within the “conservation pool,” between 800 feet mean sea level (msl) and the normal operating elevation of 909 msl. Activities also include protection and maintenance (removal of log jams and debris) of GBRA structures and infrastructure in high flood-prone areas.	Dependent on the location and extent of the activity in relation to species habitats.
Stream Restoration	Restoring the conditions of a waterbody for ecological purposes or to restore conditions to be as close as possible to its state prior to a specific incident or period of deterioration.	Dependent on extent and location of activities to restore or enhance localized stream segments.

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Activity Category/Type	General Description	Considerations for Effect to Covered Species
Erosion Protection/Bank Repair and Stabilization	Repairing and/or stabilizing stream or riverbanks, including use of concrete riprap/mats, stone riprap, or other stabilization measures.	Dependent on extent and location of activities to repair and stabilize banks or otherwise prevent erosion.
Dredging/Placement of Dredged Material in Floodplain	Removal of sediment, vegetation, and debris from canals by mechanical cleaning.	Dependent on extent and location of activities.
Utility Lines: Underground and overhead pipelines and cables to transport water, wastewater, electricity, and other services from GBRA-owned and/or operated facilities.		
Underground Utility Lines	Construction (new or expansion), maintenance, and repair of water or wastewater pipelines or underground electric utility lines or mowing pipeline corridors.	Construction in and adjacent to habitats; mowing of utility corridors.
Overhead Utility Lines	Construction (new or expansion), maintenance, and repair of overhead electric utility lines or mowing utility line corridors.	Construction in and adjacent to habitats; mowing of utility corridors; low potential for avian collisions.
Parks/Recreation Facilities: O&M of various parks and park facilities owned and/or operated by GBRA.		
Multiple Parks	Operations and maintenance of park facilities, such as Canyon Lake Gorge Park and Coletto Creek Park.	Limited to habitats in or adjacent to sites.
Permitting: Issuance of GBRA permits for waterfront construction or dredging.		
Permitting at Hydroelectric Lakes	Permit issued by GBRA to landowners of lakefront property for building structures or dredging along the shoreline of the six hydroelectric lakes.	
Administration and Maintenance Buildings/Facilities: Construction and O&M of various administration and maintenance buildings/facilities owned and/or operated by GBRA.		
Administration Buildings	Construction (new or expansion), maintenance, and repair of administration buildings.	
Maintenance Facilities	Construction (new or expansion), maintenance, and repair of maintenance facilities.	
GRHCP Implementation and Similar Activities: Habitat restoration, research/sampling/monitoring efforts, and other conservation measures with the primary purpose of mitigating impacts to species by covered activities.		
Conservation Measures	Implementation of activities that will minimize and mitigate to the maximum extent practicable the impacts from covered activities.	Intended to have a net benefit on covered species; potential for minor impacts dependent on type and locations of measures determined during GRHCP development.

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Activity Category/Type	General Description	Considerations for Effect to Covered Species
Research, Sampling, and Monitoring	Implementation of existing research, sampling, and monitoring programs or new programs designed to identify and assess the impacts from covered activities, compliance with the HCP, and progress in achieving the biological goals and objectives.	Water quality monitoring and other scientific studies – low potential for effects, dependent on goals and methods of activities.
Revised or new conservation measures resulting from the Adaptive Management Process.	Implementation of revised or new activities that will minimize and mitigate to the maximum extent practicable the impacts from covered activities.	Intended to have a net benefit on the covered species; potential for minor impacts dependent on type and location of revised or new measures determined through the Adaptive Management Process.

O&M = operations and maintenance; TBD = to be determined

Potential Covered Activities – Second Party Stakeholders

At this time, second party participants and activities have not been identified in any detail, but the potential exists for a variety of second party activities. While some activities may be similar to GBRA’s activities (e.g., other entities in the plan area treat wastewater and discharge to receiving streams in the Guadalupe River basin), other activities will likely differ from those of GBRA. It may be possible to address site-specific construction projects/activities within species’ habitats with specific parameters used for GBRA’s construction projects; however, other projects/activities may entail significant analyses beyond those needed for GBRA’s activities. As second party participants are identified, including the U.S. Army Corps of Engineers, (USACE), their proposed projects/activities will be evaluated using the criteria discussed above. The USACE has contacted GBRA regarding potential involvement in the GRHCP. Further discussions about USACE involvement is needed.

NEXT STEPS

As the GRHCP develops, GBRA and the GRHCP Project Team will continue to evaluate GBRA and second party activities and their potential impacts to covered species. The following lists some important steps that will help the team identify when and where covered species may be impacted by covered activities, develop thresholds for triggering take, estimate take, and develop conservation measures.

1. Assess the conditions under which water diversions from the Guadalupe River may affect flows in the river to an extent where they adversely affect habitat for covered species.
2. Assess the conditions under which wastewater discharges to receiving streams in the Guadalupe River basin may adversely affect covered aquatic species or their habitats.

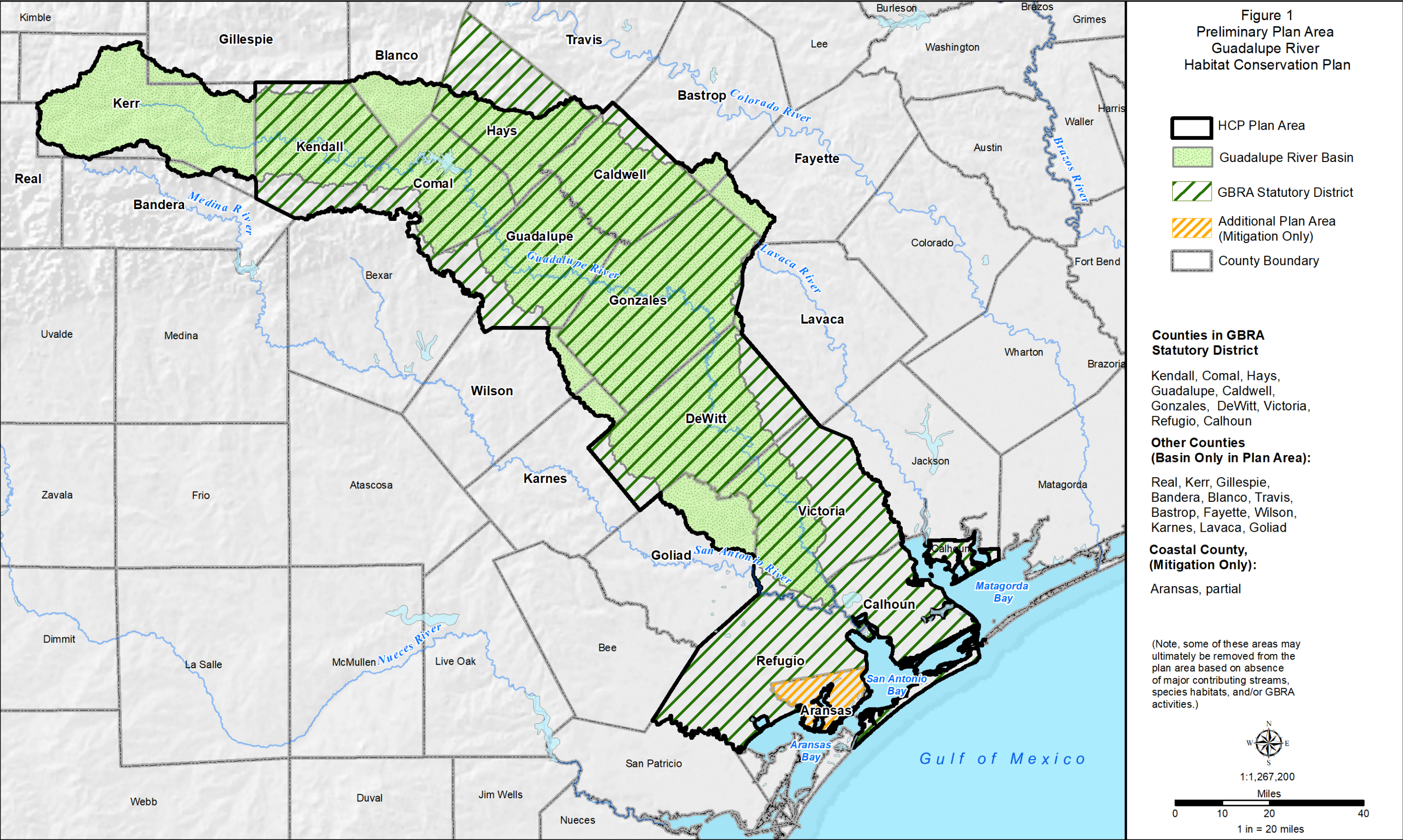
3. Further describe and evaluate site-specific activities to identify where facilities may impact covered species, and which components of the activities may impact species.
4. Meet with potential second party participants to identify, describe, and evaluate second party activities and associated take.

REFERENCES

- U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). 2016. Habitat Conservation Planning and Incidental Take Permit Processing Handbook. 361 pp + apps. https://www.fws.gov/endangered/what-we-do/hcp_handbook-chapters.html.
- USFWS. 2018. Memorandum: Guidance on trigger for an incidental take permit under section 10 (a)(1)(B) of the Endangered Species Act where occupied habitat or potentially occupied habitat is being modified. USFWS Principal Deputy Director to Regional Directors 1-8, April 26, 2018. <https://www.fws.gov/endangered/esa-library/pdf/Guidance-on-When-to-Seek-an-Incidental-Take-Permit.pdf>.

Attachment 1

Current Plan Area Map



Attachment 2

Current Covered Species List

Proposed Covered Species for the Guadalupe River Habitat Conservation Plan

Common Name	Scientific Name	Federal Status ¹	State Status ¹	General Location and Habitat	Initial Evaluation ²
Amphibians					
1. Cascade Caverns (Comal Blind) salamander ³	<i>Eurycea latitans</i> (<i>E. tridentifera</i>) ³	NL	T	Kendall, Comal counties; aquatic – springs, streams, and caves with rocky or cobble beds.	These salamanders occur in the plan area and are likely to become ESA-listed during the permit term since their habitat is limited. Because their distribution and habitat are restricted, further evaluation of covered activities will determine the potential for take.
2. Fern Bank salamander	<i>Eurycea pterophila</i>	NL	NL	Kendall, Blanco, Hays, Comal counties; aquatic – Blanco River springs	
3. Undescribed salamander	<i>Eurycea</i> sp. 2 (Devitt et al. 2019)	NL	NL	Guadalupe headwaters, Kerr, Gillespie counties; aquatic – springs (Guadalupe headwaters salamander)	
Birds					
4. Eastern black rail	<i>Laterallus jamaicensis</i> ssp. <i>jamaicensis</i>	T	T	Texas coast: primarily Aransas, Calhoun, Refugio, Victoria counties; salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps	Black rails occur in coastal portions of the plan area and could be impacted by activities within coastal marsh or other persistent emergent wetlands. An existing 4(d) rule allows for incidental take from certain activities, and incidental take may be preventable by avoiding the nesting/brooding season and incorporating other BMPs. Further evaluation of covered activities will determine the potential for take.
5. Golden-cheeked warbler	<i>Setophaga chrysoparia</i>	E	E	Central Texas counties west of Interstate Highway 35 and Balcones Escarpment (Real through Hays/Comal counties); oak-juniper woodlands with mature Ashe juniper for nesting material	Golden-cheeked warblers occur in the western portion of the plan area and could be impacted by activities in or adjacent to suitable habitats. Incidental take may be preventable by avoiding the nesting season and incorporating other BMPs. Further evaluation of covered activities will determine the potential for take.
6. Piping plover	<i>Charadrius melodus</i>	T	T	Texas coast: Aransas, Calhoun, Refugio counties (migratory elsewhere); beaches, sand/mud/algal flats, dunes, spoil islands	Piping plovers and red knots overwinter (no nesting) in the eastern extent of the plan area. Initial reviews indicate GBRA’s activities would not impact them, but second party activities may impact the species and have the potential for incidental take.
7. Red knot	<i>Calidris canutus rufa</i>	T	T	Texas coast: Aransas, Calhoun, Refugio counties (migratory elsewhere); beaches, sand/mud/algal flats, dunes, spoil islands	
8. Whooping crane	<i>Grus americana</i>	E	E	Texas coast: Aransas, Calhoun, Refugio, Victoria counties (migratory elsewhere); marshes, ponds, and flooded grain fields	Whooping cranes overwinter (no nesting) in coastal portions of the plan area. Further evaluation of covered activities will determine if incidental take is reasonably certain to occur due to impacts to either the crane’s food web and prey base, or to habitat availability.

Proposed Covered Species for the Guadalupe River Habitat Conservation Plan

Common Name	Scientific Name	Federal Status ¹	State Status ¹	General Location and Habitat	Initial Evaluation ²
Insects					
9. Monarch butterfly	<i>Danaus plexippus</i>	C	NL	Occurs in Texas year-round but is most common during spring and fall migrations. Caterpillars are dependent on milkweed (<i>Asclepias</i>) species.	Adults and caterpillars could occur in plan area. On 12/17/2020, USFWS found that ESA-listing was warranted but precluded by other priorities. Further evaluation of covered activities and species details will determine if incidental take is reasonably certain to occur or if there is sufficient data to quantify take.
Mollusks					
10. False spike	<i>Fusconaia mitchelli</i>	PE	T	Proposed critical habitat in Guadalupe River in Gonzales, DeWitt, Victoria counties; small streams to medium-size rivers, riffles and runs with flowing water, often in stable substrates of sand, gravel, and cobble	These freshwater mussels occur in the plan area, are currently proposed for ESA-listing, and could be impacted by covered activities. Covered activities that affect aquatic habitats in the Guadalupe River and major tributaries should be further evaluated for take potential.
11. Guadalupe fatmucket	<i>Lampsilis bergmanni</i>	PE	T	Proposed critical habitat in Guadalupe River and Johnson Creek in Kerr, Kendall counties; reported in slow to moderate current in various substrates; also observed in macrophyte beds, roots of cypress trees, and vegetation along steep banks	
12. Guadalupe orb	<i>Cyclonaias necki</i>	PE	T	Proposed critical habitat in Guadalupe River in Kerr, Kendall, Comal, Guadalupe, Caldwell, Gonzales, DeWitt, Victoria counties and San Marcos River in Gonzales County; occurs in mainstem and tributary habitats, often in substrates composed of sand, gravel, and cobble, including mud-silt or gravel-filled cracks in bedrock slabs	

¹ Federal and State status: E = Endangered; T = Threatened; PE = Proposed Endangered; C = Candidate; NL = Not Listed

² Initial evaluation applying the four criteria described above: Range, Listing Status, Impact, and Species Data

³ *Eurycea latitans* includes former *E. tridentifera*, as recommended by Devitt et al. (2019). The Integrated Taxonomic Information System (ITIS) classifies *E. tridentifera* as an invalid taxon and a junior synonym to *E. latitans*. (Devitt, T. J., A. M. Wright, D. C. Cannatella, and D. M. Hillis. 2019. Species delimitation in endangered groundwater salamanders: Implications for aquifer management and biodiversity conservation. Proceedings of the National Academy of Sciences 116(7):2624-2633.)

Attachment 3

Questionnaire for Species Take Potential

From USFWS (2018)

QUESTIONNAIRE FOR POTENTIAL APPLICANTS FOR INCIDENTAL TAKE AUTHORIZATION UNDER SECTION 10(a)(1)(B) of the ENDANGERED SPECIES ACT

Respond to these questions to help decide if you need an Endangered Species Act (ESA) permit:

1. Keeping in mind that the ESA does not apply to take of plants incidental to otherwise lawful activities, are there ESA listed species present in the area where your activity will occur or will they be present at some point in the duration of your activity?

Yes? Then proceed to question 2.

No? Then you do not need a permit.

2. Is it likely that any of these listed species will be exposed to your activities (or the results of your activity) during any of the various phases of your activity (construction, operation, maintenance, etc.)?

Yes? Then proceed to question 3.

No? Then you do not need a permit.

Review questions 3, 4, 5, and 6 to determine if the exposure from your activity to the listed species constitutes prohibited “take” under the ESA. A permit under section 10 (a)(1)(B) of the ESA does not cover purposeful take. As you review the questions below remember that only take that is “incidental” to an otherwise lawful action can be covered under an incidental take permit.

3. If your activity overlaps with the listed species at some point of its duration, will that exposure likely result in any of the following actions to the listed species: pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting or attempting to engage in any such conduct? Keep in mind that some of these definitions most likely only apply to purposeful take (e.g., hunting, shooting).

Yes, to incidental take? Then you likely need a permit.

No? Then proceed to question 4.

4. Is your activity likely to harass a listed species? To answer this question, ask whether your activity, through an intentional or negligent act or omission, is likely to annoy the listed species to such an extent as to cause **an injury** to the species by **significantly disrupting normal behavior patterns** (e. g. breeding, feeding, or sheltering, etc.)?

Yes? This take is not permitted as it is not “incidental.”

No? Then proceed to question 5.

5. Is your activity likely to result in an act that actually injures or kills a listed species? Yes?

Then you likely need a permit.

No? Then proceed to question 6.

6. Is your activity likely to harm a listed species through habitat modification? To answer this question, ask:

- a. Is my activity likely to result in **significant** habitat modification or degradation?
- b. Will that modification or degradation **significantly impair** essential behavior patterns, including breeding, feeding, or sheltering?
- c. As a result of a. and b. above, is it likely there will be **an actual injury or death** to a listed species?

Yes, to all three questions? Then you can anticipate take through habitat modification and likely will need a permit.

No? Then you have not satisfied the definition of “harm” through habitat modification.

Ultimately you, as a potential applicant, must decide whether it is reasonable to conclude that the proposed action is likely to result in the take of a listed species. If such an outcome is unlikely, you do not need to seek a section 10 permit.

Guidance on Determining Need for ITP under ESA Section 10(a)(1)(B)

