Biological Resources Evaluation

La Cueva Arroyo Bank Stabilization
Bernalillo County, New Mexico

September 2017/Revised October 2018

INTRODUCTION

Llave Homes Enterprises proposes to construct a scour wall at the La Cueva Arroyo channel in Albuquerque, Bernalillo County, New Mexico. The proposed wall would protect currently vacant land parcels. The proposed project includes constructing a concrete-reinforced scour wall to contain the 100-year flood event on the south bank of the existing arroyo within lots 17 and 18 (just west of Ventura Street). The lots would also be graded and prepared for future construction. The arroyo channel would be widened adjacent to filled areas to accommodate ephemeral flows at the existing water surface elevation. The project area appears on the *Alameda*, *New Mexico* US Geological Survey 7.5-minute quadrangle map (Figure 1).

The elevation of the project area ranges from approximately 5,520 to 5,550 feet above mean sea level. The soil mapping units present within the project area are Embudo gravelly fine sandy loam, 0-5 percent slopes; and Embudo-Tijeras complex, 0-9 percent slopes (US Department of Agriculture 2017).

The climate in Bernalillo County is semi-arid. Albuquerque, New Mexico, receives just over 10 inches of precipitation annually, mostly occurring from July through October. Annual high temperatures reach approximately 78 degrees Fahrenheit (°F). Annual low temperatures approach 43°F (US Climate Data 2017).

BIOLOGICAL RESOURCES SURVEY

NV5 (formerly Marron and associates) conducted a biological survey of the project area during August 2017. The purpose of the survey was to obtain the ordinary high-water mark within the arroyo and identify biological resources that may be impacted within the permit area. Examples of such resources include federal or State of New Mexico listed or otherwise protected plants and wildlife, migratory bird nests, and general vegetation or wildlife of concern.

Vegetation

The project area occurs adjacent to and within disturbed Desert Grassland and Arroyo Riparian vegetation communities (Dick-Peddie 1993). Approximately 75 percent of the project work area consists of arroyo bed and is not vegetated. Within vegetated areas, the dominant plant species present are rubber rabbitbush (*Ericameria nauseosa*), snakeweed (*Gutierrezia sarothrae*), and Apache plume (*Fallugia paradoxa*). Four-wing saltbush (*Atriplex canescens*), Russian thistle (*Salsola tragus*), and Datura (*Datura inoxia*) are also common in the area. No rare or unusual plant communities or wetland vegetation are present.

Proposed project activities would result in the disturbance of partially vegetated and unvegetated soils within the permit area. It is recommended that open, currently vegetated soils disturbed by project activities be revegetated using native, certified weed-free native species to reduce soil erosion and improve habitat.

One (1) Class C New Mexico noxious-weed species, tree of heaven (*Ailanthus altissima)*, occurs along the south arroyo bank outside the permit area. Equipment used in construction should be cleaned prior to arrival at the site to ensure that it is free of noxious weed seeds.

Wetlands and Waterways

No wetlands are present within the proposed project area. The project location occurs within the La Cueva Arroyo and is located approximately 3.75 arroyo miles upstream from the confluence with the North Diversion Channel (NDC). The work area is located approximately 5.4 -arroyo miles from the NDC sediment basin confluence with the Rio Grande. Minor permanent impacts to the active channel would occur. Project activities will be permitted under the requirements of the Clean Water Act sections 404/401 prior to construction.

Wildlife

The project area occurs within a developing parcel in a metro-urban location. Arroyo systems within the metro areas provide wildlife with corridors that connect rivers with outlying undeveloped mesas. Many species that would not reside within these arroyos pass through them. The following animals or their sign were observed within the project area: road runner (*Geococcyx californianus)*, house sparrow (*Passer domesticus*), western kingbird (*Tyrannus verticalis*), white-winged dove (*Zenaida macroura*), Ord's kangaroo rat (*Dipodomys ordii*), and desert cottontail (*Sylvilagus audubonii*).

No burrows suitable for western burrowing owl occupation occur in the project permit area. Nearby residents and dogs frequently walk within the area.

Any trenches left open overnight have the potential to trap small mammals and reptiles. It is recommended that any trenching or excavation be filled concurrently to prevent trapping small animals.

PROTECTED AND MONITORED SPECIES

Potential impacts to protected species listed by the US Fish and Wildlife Service (USFWS) and the State of New Mexico in Bernalillo County as well as birds protected under the Migratory Bird Treaty Act (MBTA) were evaluated. Based on the project location, several listed species could occur near the project area or within the indirectly impacted area for the action. Further evaluation eliminated most of these species from consideration, and potential impacts to 1 species was evaluated in detail.

Species Eliminated from Further Consideration

Most species that appear on the USFWS and state lists for Bernalillo County are not evaluated further. The following animal species were eliminated because they occur in mountainous habitat, forests, wet meadows, cliffs, wetlands, expansive grasslands, riparian woodlands, juniper savanna/woodlands, and aquatic habitats: Southwestern willow flycatcher (*Empidonax traillii extimus*), western yellow-billed cuckoo (*Coccyzus americanus*), Mexican spotted owl (*Strix occidentalis lucida*), bald Eagle (*Haliaeetus leucocephalus*), common black-hawk (*Buteogallus anthracinus anthracinus*), broad-billed hummingbird (*Cynanthus latirostris*), white-eared hummingbird (*Basilinna leucotis*), American and Arctic Peregrine falcons (*Falco peregrinus anatum*/*Falco peregrinus tundrius*), gray vireo (*Vireo vicinior*), neotropic cormorant (*Phalacrocorax brasilianus*), brown pelican (*Pelecanus occidentalis*), Baird's sparrow (*Ammodramus bairdii*), and New Mexico meadow jumping mouse (*Zapus hudsonius luteus*).

The lady's tresses orchid (*Spiranthes magnicamporum*), is listed by the State of New Mexico as endangered in Bernalillo County, but no suitable habitat is present within the project area.

The Spotted bat (*Euderma maculatum*), a state-threatened species, is often collected near water where it is presumed to be foraging. It uses crevices in nearby cliffs and trees for roosting. The project area is located about 6.4 miles from potential foraging habitat and no suitable roosting habitat is located within the arroyo. Nearby development may provide roost habitat. However, if this species were present in the project area, it would be during evening hours, and they would be transients.

Rio Grande silvery minnow (*Hybognathus amarus*)

Species Ecology/Threats

Rio Grande silvery minnow requires shallow waters with a sandy and silty substrate that is generally associated with a meandering river. However, physical modifications to the Rio Grande over the last century, such as dam and levee construction and channelization, have altered much of the habitat that is necessary for the species to persist (USFWS 2003). Channelization has straightened and shortened the river reaches; increased the velocity of the current; and altered riparian vegetation, in-stream cover, and substrate composition. In the Middle Rio Grande, the spring runoff coincides with, and likely triggers, the silvery minnow's spawn (USFWS 2003).

However, diversion dams act as in-stream barriers and prevent silvery minnows from moving upstream after hatching. The continued downstream displacement and decline of the silvery minnow in the Middle Rio Grande is well documented. This species was historically among the most abundant and widespread fishes in the Rio Grande Basin, occurring from Española, New Mexico to the Gulf of Mexico (Bestgen and Platania 1991). It was also found in the Pecos River, from Santa Rosa, New Mexico, downstream to its confluence with the Rio Grande.

The silvery minnow is extirpated from the Pecos River and the Rio Grande downstream of Elephant Butte Reservoir and upstream of Cochiti Reservoir (Bestgen and Platania 1991, USFWS 2003). Its current distribution is limited to the Rio Grande between Cochiti Dam and Elephant Butte Reservoir. Throughout much of its historic range, the decline of the silvery minnow has been attributed to modification of the flow regime and channel drying by dams, water diversion for agriculture, stream channelization, interactions with non-native fish, and decreasing water quality (Bestgen and Platania 1991, USFWS 2003).

Critical Habitat

On February 19, 2003, the USFWS published a final rule establishing critical habitat for the Rio Grande silvery minnow within the remaining portion of their historic range in the Middle Rio Grande from Cochiti Dam to the utility line crossing the Rio Grande, a permanent identified landmark in Socorro County (USFWS 2003). The USFWS determined that 212 miles of the Rio Grande be designated as critical habitat for the silvery minnow. The width of critical habitat along the Rio Grande is defined as those areas bound by existing levees or, in areas without levees, 300 feet of the riparian zone adjacent to the bankfull stage of the river. The project area is not located within designated silvery minnow critical habitat.

Data Sources (including surveys conducted)

Information was collected from the New Mexico Department of Game and Fish (NMDGF), USFWS, and relevant literature.

Affected Habitat Description
The project area occurs approximately 5.4 miles from the eastern bank of the Rio Grande at the NDC, where low-flow connections are restricted by fill within the sediment basin. It is not located within the Rio Grande floodplain nor within designated critical habitat for this species. However, since the project area connects to the river via the NDC, potential indirect effects due to surface water quality reduction or habitat modification due to construction are addressed.

Analysis of Effects
The project area occurs approximately 5.4 miles from the eastern bank of the Rio Grande at the NDC, where low-flow connections are restricted by fill within the sediment basin. It is not located within the Rio Grande floodplain nor within designated critical habitat for this species. However, since the project area connects to the river via the NDC, potential indirect effects due to surface water quality reduction or habitat modification due to construction are addressed.

Analysis of Effects
Project activities would include installation of a scour wall and fill soils, as well as excavation at an ephemeral waterway. Work in this area would be completed during periods of low or no flows. Since the project area occurs both within a natural channel and approximately 5.4 miles from the Rio Grande, and the NDC sediment basin area fill prevents low-flow connections, an unexpected release of sediment or chemical laden runoff from the project site that would reach the river is extremely unlikely if seasonal restrictions are placed on construction. The work would not result in restricted flows, increase or significantly reduce sediment, or reduce flows from contributing waters. No impacts are expected to the Rio Grande.

Determination of Effect/Recommendations for Mitigation
The USFWS has determined that the Angostura reach of the Rio Grande downstream of the project area is inhabited by the Rio Grande silvery minnow. The implementation of seasonal construction restrictions and applicable water quality protection measures will be required under CWA Sections 404/401 and 402 permitting during construction at the site, which is located over 5 arroyo miles from the river and buffered by the NDC outfall pond and sediment basin. The likelihood of an unintended release from the project resulting in contaminants entering the river is extremely low. The project is not expected to result in a reduction of surface water quality that could eventually enter the Rio Grande in a high-flow event. Therefore, the proposed project is expected to result in no effect to either the Rio Grande silvery minnow or its designated critical habitat.

Migratory Birds
The proposed project would not result in the removal of trees or structures suitable for use by migratory birds. However, some shrubby species, which could provide nest sites for smaller migratory birds, would be removed. No burrows suitable for owl nesting were observed in the permit area. The area could become occupied during future seasons. If construction is delayed beyond the 2017 calendar year, it is recommended the project proponent provide a preconstruction nest survey of the project area prior to earthwork/clearing to ensure compliance with the Migratory Bird Treaty Act.

CONCLUSIONS AND RECOMMENDATIONS

The project would impact a partially vegetated arroyo bank and channel in a currently developing residential area. There are no wetlands present. The project area includes an active but disturbed ephemeral arroyo. Downstream of the project area, north of Alameda, the arroyo is channelized and

covered in concrete. The project is expected to result in *no effect* to listed species or their critical habitat. The project area does not support active or previously occupied nests or burrows. One (1) Class C noxious weed species was present along the southern arroyo bank outside the project area. NV5 recommends implementing the following measures to reduce impacts to natural resources:

- Require the contractor to develop and implement a sediment and an erosion control plan to prevent surface water quality during construction.

- Require equipment refueling, storage, and maintenance activities to occur in designated areas outside the arroyo floodplain.

- Clean all heavy equipment used in the project area prior to the start of the project, and inspect equipment daily for leaks.

- Regrade disturbed open soils to preconstruction contours and revegetate previously vegetated areas that remain open after construction with native species.

- Bury any trenching or excavation concurrently to reduce trapping small mammals and reptiles or provide escape ramps in deep trenches for small mammals and reptiles to escape.

- Construct outside the migratory bird nesting season for the Albuquerque area (March 15 to September 1) or provide preconstruction nest surveys prior to clearing vegetation. If occupied nests of migratory species would be impacted, a permit must be obtained prior to constructing.

PHOTOS

Photo A – Representative habitat at the project permit area facing west from Ventura road (2017)

Photo B – Project permit area facing east (2017)

Photo C – Permit area facing east, post disturbance (2018)

Photo D – Arroyo channel upstream of Ventura Street chowing lesser disturbance and locations of low flow channel, terrace, and OHWM

REFERENCES

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