Appendix L

Special-Status Animal Species Observed or with Potential to Occur

Species	Status[1]	Habitat Associations	Potential to Occur[2]
INVERTEBRATES			
San Diego fairy shrimp (*Branchinecta sandiegonensis*)	FE/-- County Group 1 MSCP NE MSCP Covered	Restricted to vernal pools and other ephemeral basins in southern California from coastal Orange County to San Diego County. Found in seasonally astatic pools which occur in tectonic swales or earth slump basins and other areas of shallow, standing water often in patches of grassland and agriculture interspersed in coastal sage scrub and chaparral.	**None**. No vernal pools or other suitable habitat to support the species is present within the project site. The closest reported occurrence of the species is located over 2.8 miles southwest of the site.
Thorne's hairstreak (*Callophrys thornei*)	--/-- County Group 1 MSCP Covered MSCP NE	Occupies Tecate cypress forests, which larvae exclusively feed upon. Tecate cypress is a relict species from a time when southern California's climate was cooler and wetter. There are five remaining populations of the species, all are located within the Otay Mountain wilderness.	**None**. The species' host plant does not occur within the project site, or within adjacent areas. The project is located outside of the known range of the species, Otay Mountain wilderness, which occurs approximately 10 miles to the south.
Monarch butterfly (*Danaus plexippus*)	--/-- County Group 2	The population west of the Rocky Mountains migrates to, and overwinters, along the coast of central and southern California. Inhabits a wide variety of open habitats including fields, meadows, marshes, and roadsides and roosting on wind-protected tree groves (such as eucalyptus [*Eucalyptus* spp.], Monterey pine [*Pinus radiata*], cypress [*Hesperocyparis* sp.]), with nectar and water sources nearby. Breeds in areas that have a suitable abundance of their host plant, milkweed (*Asclepias* sp.).	**Present.** Individuals were observed flying within non-native woodland in the southeastern portion of the project site and at the northern edge of riparian habitat located east of Steele Canyon Road. An additional individual was observed just outside of the project boundary, to the south of the patch of riparian habitat east of Steele Canyon Road.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Quino checkerspot butterfly (*Euphydryas editha quino*)	FE/-- County Group 1 MSCP NE	Occurs in California from western Riverside County southwards to southern San Diego County. Inhabits open and sparsely vegetated areas that contain larval host plant species (principally dot-seed plantain [*Plantago erecta*], woolly plantain [*Plantago patagonia*] but also Coulter's snapdragon [*Antirrhinum coulterianum*], and rigid bird's beak [*Cordylanthus rigidus*]) and nectar sources. Often found on rounded hilltops, ridgelines, and occasionally rocky outcrops. Occurs within a wide range of open-canopied habitats including vernal pools, sage scrub, chaparral, grassland, and open oak and juniper woodland communities.	**None**. The project site is a developed golf course lacking suitable habitat for the species. Potential habitat for the species occurs outside of the project boundary to the southwest and southeast of the site within lands preserved by the SDNWR and other open space areas.
Harbison's Dun skipper (*Euphyes vestris harbisoni*)	--/-- County Group 1 MSCP NE	Occurs in the foothills of northern and southern San Diego County, extreme western Riverside County, and southern Orange County. Prefers oak woodlands but is also found within chaparral or riparian areas that have narrow canyons or drainages where the species host plant, San Diego sedge (*Carex spissa*) is found. Generalist feeder with a preference for milkweeds and thistle. Nectaring resources include morning glory (*Calystegia macrostegia tenuifolia*), red thistle (*Cirsium occidentale*), loosestrife (*Lythrum californicum*), and less frequently golden yarrow (*Eriophyllum confertiflorum*) and black mustard (*Brassica nigra*).	**None**. The site lacks narrow canyons and drainages where the species is typically found, and the host plant was not documented within the project site.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Hermes copper butterfly (*Lycaena hermes*)	--/-- County Group 1	Found in coastal sage scrub and southern mixed chaparral habitats with mature specimens of its larval host plant, spiny redberry (*Rhamnus crocea*). This species appears to utilize redberry stands growing in deeper, well drained soils of canyon bottoms and north-facing hillsides. Nectaring resources include California buckwheat (*Eriogonum fasciculatum*), chamise (*Adenostoma fasciculatum*), and California sunflower (*Encelia californica*), among others.	**None**. The species host plant, redberry, does not occur within the project site. Potentially suitable habitat for the species occurs to the southeast and southwest of the site within the SDNWR and other open space areas.
Robinson's rain scarab beetle (*Phobetus robinsoni*)	--/-- County Group 2	Only known from three localities in San Diego (Scissor's crossing) and Orange County (O'Neill Park and Laguna Beach).	**None**. The project site is located outside of the known range of the species.
VERTEBRATES			
Amphibians			
Arroyo toad (*Anaxyrus californicus*)	FE/SSC County Group 1 MSCP NE MSCP Covered	Inhabits low gradient, medium to large streams and rivers with intermittent and perennial flow in coastal and desert drainages of central and southern California. Breeding habitat specialists that require slow-moving streams composed of sandy soils with sandy streamside terraces. May occupy first-order streams, though most populations inhabit second-sixth-order streams that have extensive braided channels and sediment deposits of sand, gravel, or pebbles that are redistributed by flooding. Utilizes shallow pools (at least 1-inch deep) for breeding, egg-laying, and tadpole development. Vulnerable to habitat destruction and alteration due to changes in hydrology, including construction of dams and water diversions. Impacted by the presence of non-native predators such as American bullfrog (*Lithobates catesbeianus*).	**Low.** The species was not detected during the 2019 protocol surveys. Though Sweetwater River is within the historical range of the species and potentially suitable habitat is present on site, the site has been significantly degraded by previous golf course development and is subject to on-going disturbances related to golf course maintenance and operations. Furthermore, the hydrological regime of the region has been heavily altered by development of artificial impoundments upstream (Loveland Reservoir) and downstream (Sweetwater Reservoir) of the site. Arroyo toads have been observed downstream of Loveland Reservoir but have not been documented west of Sloan Canyon Road since 1997. Focused surveys for the species were conducted at the site in 2003 by USGS; no arroyo toads were observed (USGS 2005).

Species	Status[1]	Habitat Associations	Potential to Occur[2]
California red-legged frog (*Rana draytonii*)	FT/SSC County Group 1 MSCP Covered MSCP NE	The species has been extirpated from 70 percent of its former range. Current distribution includes coastal drainages of central California, from Marin County south to northern Baja California, and in isolated drainages in the Sierra Nevada, northern Coast, and northern Transverse Ranges at elevations below 5,000 feet. Inhabits a variety of aquatic habitats including pools and backwaters within streams and creeks, ponds, marshes, springs, sag ponds, dune ponds and lagoons. Breeds in artificial impoundments such as stock ponds.	**None.** Though the site contains suitable aquatic habitat that could potentially support the species, there are no known occurrences of the species within the region.
Western spadefoot toad (*Spea hammondii*)	--/SSC County Group 2	Occurs from northern California southward to San Diego County, and west of the Sierra Nevada at elevations below 4,500 feet. This terrestrial species requires temporary pools for breeding. Suitable upland habitats include coastal sage scrub, chaparral, and grasslands. Most common in grasslands with vernal pools or mixed grassland-coastal sage scrub areas. Breeds in temporary pools formed by heavy rains, but also found in riparian habitats with suitable water resources. Breeding pools must lack exotic predators such fish, bullfrogs, and crayfish for the species to successfully reproduce. Estivates in burrows within upland habitats adjacent to potential breeding sites.	**High.** Potentially suitable habitat occurs within the project site along the Sweetwater River. However, the site has been heavily degraded and disturbed by previous golf course development and is subject to on-going disturbances related to golf course maintenance and operations. Occurrences of the species are reported just south of the site within the SDNWR.
Reptiles			

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Southwestern pond turtle (*Actinemys pallida*)	--/SSC County Group 1 MSCP Covered	Found in California from the central coast south of the San Francisco Bay area to San Diego County, including the Mojave River. Habitat generalist that occurs within many types of water from freshwater to brackish environments and permanent to intermittent waterbodies. Inhabit creeks, slow moving rivers, marshes, ponds, lakes, reservoirs, vernal pools, canals and even sewage treatment plants. Prefers habitats with slow flowing water particularly where basking sites (such as rocks, downed logs, or emergent vegetation), deep water retreats, and egg laying areas are readily available.	**Low**. This species was not detected during the 2022 focused surveys. Artificial ponds could potentially provide suitable habitat for the species. However, no records of the species occur within the project vicinity. The closest location is over 5 miles northeast of the site, along Sweetwater River, downstream of Loveland Reservoir near the river's confluence with Lawson Creek. Furthermore, USGS conducted visual and trapping surveys for the species in 2002 throughout the local area. No pond turtles were detected along portions of the Sweetwater River within the SDNWR, or at Sweetwater Reservoir during surveys (USGS 2005b and 2003).
San Diegan legless lizard (*Anniella stebbinsi*)	--/SSC County Group 2	Occurs in sparsely vegetated areas with moist warm, loose soil with plant cover; moisture is essential. Common in several habitats but especially in beach dunes, coastal scrub, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Found primarily in areas with sandy or loose organic soils or where there is plenty of leaf litter. Sometimes found in suburban gardens in southern California.	**Moderate.** Potentially suitable habitat occurs along the Sweetwater River. However, the site has been heavily degraded by previous golf course development and is subject to on-going disturbances related to golf course maintenance and operations. The species is reported to occur over 1 mile west of the site along Sweetwater River within the SDNWR.
California glossy snake (*Arizona elegans occidentalis*)	--/SSC	Occurs along the coastal regions of California from San Francisco south to San Diego County; though it is absent along the central coast. Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas and areas with soils loose enough for easy burrowing.	**Moderate:** Potentially suitable habitat and soils occurs within the project site. However, no records of the species occur within the project vicinity. The closest documented location of the species consists of a historical observation located over 4 miles north of the site. Furthermore, the site has been heavily degraded by previous golf course development and is subject to on-going disturbances related to golf course maintenance and operations.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*)	--/WL County Group 2 MSCP Covered	Found within the southwestern portion of California in southern San Bernardino, western Riverside, Orange, and San Diego Counties on the western slopes of the Peninsular ranges below 3,500 feet. Suitable habitat includes coastal sage scrub, chaparral, juniper woodland, oak woodland, and grasslands along with alluvial fan scrub and riparian areas. Occurrence of the species correlated with the presence perennial plants (such as California buckwheat, California sagebrush, black sage, or chaparral) to provide a food base for its major food source, termites.	**Present.** Individuals were observed on several occasions in the northeastern portion of the site between Willow Glen Drive and Sweetwater River, and adjacent to the patch of riparian habitat east of Steele Canyon Road.
San Diego tiger whiptail (*Aspidoscelis tigris stejnegeri*)	--/SSC County Group 2	Occurs along the coastal region of southern California from San Luis Obispo south to San Diego County. Inhabits a wide variety of habitats, primarily in hot and dry open areas with sparse vegetation, from sea level to 4,900 feet. Associated habitats include coastal sage scrub, chaparral, riparian areas, woodlands, and rocky areas with sandy or gravel substrates.	**Moderate.** Potentially suitable coastal sage scrub habitat occurs in the extreme southwestern and southeastern portions of the project site. However, these remnant patches these areas are small in size, have been disturbed by previous golf course development and are subject to on-going disturbances related to golf course maintenance and operations. The species is reported to occur over 1 mile west of the site within the SDNWR.
San Diego banded gecko (*Coleonyx variegatus abbotti*)	--/SSC County Group 1	Occurs in the coastal regions of southern California from interior Ventura County to San Diego County, although the species is absent from the extreme outer coast. Inhabits coastal sage scrub and chaparral habitats, most often occurring in granite or rocky outcrops.	**Low.** Two remnant patches of coastal sage scrub occur in the extreme southwestern and southeastern portions of the project site. However, these areas are small in size, have been previously disturbed by golf course development, are subject to on-going disturbances related to golf course maintenance and operations, and lack suitable structural habitat (i.e., rocky areas) associated with this species. No occurrences of the species are reported in the project vicinity.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Red diamond rattlesnake (*Crotalus ruber*)	--/SSC County Group 2	Occurs in southwestern portion of California from San Bernardino County southward to San Diego County at elevations below 5,000 feet. Has a wide tolerance for varying environments including the desert, dense foothill chaparral, warm inland mesas and valleys, and cool coastal zones. Most commonly found near heavy brush with large rocky microhabitats. Chamise and red shank chaparral associations may offer better structural habitat for refuges and food resources.	**Low.** Two remnant patches of coastal sage scrub occur in the extreme southwestern and southeastern portions of the project site. However, these areas are small in size, have been previously disturbed by golf course development, are subject to on-going disturbances related to golf course maintenance and operations, and lack suitable structural habitat (i.e., rocky areas) associated with this species.
San Diego ring-necked snake (*Diadophis punctatus similis*)	--/-- County Group 2	Found mainly in San Diego County along the coast to the west of the mountain and desert regions, and in extreme southwestern Riverside County. Prefers moist habitats and often found near intermittent streams. Suitable habitat includes wet meadows, rocky hillsides, farmland, grassland, chaparral, mixed coniferous forests, and woodlands. Secretive with individuals usually found under the cover of rocks, wood, boards and other surface debris, but occasionally seen moving on the surface on cloudy days, dusk, or at night.	**Moderate.** Potentially suitable riparian habitat occurs along the Sweetwater River. However, the site has been disturbed by golf course development and are subject to on-going disturbances related to golf course maintenance and operations. The species is reported to occur over 1 mile west of the site along Sweetwater River within the SDNWR.
Blainville's horned lizard (*Phrynosoma blainvillii*)	--/SSC County Group 2 MSCP Covered	Occurs from southern California to northern Baja California. In California, the species predominately occurs from Kern County south to San Diego County west of the desert at elevations below 8,000 feet. Inhabits a wide variety of vegetation types including sagebrush scrub, chaparral, grasslands, forests, and woodlands but is restricted to areas with suitable sandy, loose soils with open areas for basking. Diet primarily composed of native harvester ants (*Pogonmyrmex* sp.) and are generally excluded from areas invaded by Argentine ants (*Linepithema humile*).	**Low.** Though the species has been observed within the project vicinity, potentially suitable coastal sage scrub habitat is limited to remnant patches of habitat along the site's southwestern and southeastern boundary. However, these areas are small in size, have been previously disturbed by golf course development, and are subject to on-going disturbances related to golf course maintenance and operations. No harvester ants were observed during the biological surveys.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Rosy boa (*Lichanura orcutti*)	--/-- County Group 2	Occurs in throughout southern California south of Los Angeles County from the coast east towards the Mojave and Colorado deserts, and south to San Diego County, though the species is absent from most of Imperial County. Inhabits arid scrublands, semi-arid shrublands, rocky shrublands, rocky deserts, canyons, and other rocky areas. Appears to be common in riparian areas but does not require permanent water.	**Low.** Potentially suitable coastal sage scrub and riparian habitats occur within the project site but lacks rocky areas associated with the species. The site has also been previously disturbed by golf course development and is subject to on-going disturbances related to golf course maintenance and operations. The species is reported to occur over 1 mile west of the site along Sweetwater River within the SDNWR.
Coronado skink (*Plestiodon skiltonianus interparietalis*)	--/WL County Group 2	Occurs from in coastal and inland portions of southern San Diego County, though can occur up into Riverside County where it intergrades with Skilton's skink (*Plestiodon skiltonianus skiltonianus*). Suitable habitats include grassland, woodlands, pine forests, and chaparral, especially in open sunny areas such as clearings and edges of creeks or rivers. Prefers rocky areas near streams with lots of vegetation but can also be found in areas away from water. Occasionally seen foraging in leaf litter but more commonly found underneath surface objects, such as bark or rocks, where it lives in extensive burrows.	**Low.** Potentially suitable coastal sage scrub and riparian habitats occur within the project site but lacks rocky areas associated with the species. The site has also been previously disturbed by golf course development and is subject to on-going disturbances related to golf course maintenance and operations. No occurrences of the species are reported in the project vicinity.
Coast patch-nosed snake (*Salvadora hexalepis virgultea*)	--/SSC County Group 2	Occurs in the coastal regions of California from the northern Carrizo Plains in San Luis Obispo County south to San Diego County at elevations below 7,000 feet. Inhabits semi-arid shrubby areas such as chaparral and desert scrub. Also found along washes, sandy flats, canyons, and rocky areas. Takes refuge and overwinters in burrows and woodrat nests.	**Low.** Remnant patches of coastal sage scrub occur in the extreme southwestern and southeastern portions of the project site. However, these areas are small in size, have been previously disturbed by golf course development, and are subject to on-going disturbances related to golf course maintenance and operations. The nearest reported occurrences of the species are located over 3 miles southwest of the project near Sweetwater Reservoir.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Two-striped garter snake (*Thamnophis hammondii*)	--/SSC County Group 1	Found in California from Monterey County south along the coast to San Diego County at elevations below 7,000 feet. Commonly inhabits perennial and intermittent streams with rocky beds bordered by riparian habitats dominated by willows and other dense vegetation. The species has also been found in stock ponds and other artificially created aquatic habitats if bordered by dense vegetation and potential prey, such as amphibians and fish, are present.	**High.** Potentially suitable riparian habitats occur within the project site along Sweetwater River, but the site lacks rocky streambed habitat typically associated with the species. Artificial ponds within the site are open, lacking sufficient vegetative cover for the species. The patch of riparian habitat east of Steele Canyon Road along the southern boundary contains potentially suitable ponded areas bordered by dense riparian habitat. The species is reported to occur west of the site along Sweetwater River within the SDNWR, and a single SanBIOS record from 2003 is located within or adjacent to the southwestern portion of the site.
South Coast garter snake (*Thamnophis sirtalis infernalis*)	--/SSC County Group 2	This unformal subspecies occurs within scattered localities of California from Ventura County south San Diego County at elevations below 2,880 feet. Inhabits marsh and uplands habits near permanent water sources and suitable riparian habitats.	**Low.** Potentially suitable riparian habitats occur within the project site along Sweetwater River, but the site lacks rocky streambed habitat typically associated with the species. There are no reported occurrences of the species within the project vicinity.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Birds			
Cooper's Hawk (*Accipiter cooperii*)	--/WL County Group 1 MSCP Covered	In California, the species breeds from Siskiyou County south to San Diego County and east towards Owens Valley at elevations below 9,000 feet. Inhabits forests, riparian areas, and more recently suburban and urban areas. Nests within dense woodlands and forests and isolated trees in open areas.	**Present.** Species observed on multiple occasions perched in trees within the developed golf course and riparian habitat and flying over the site. Species has the potential to nest within, or in the vicinity of, the project site.
Sharp-shinned Hawk (*Accipiter striatus*)	--/WL County Group 1	Primarily winters and migrates throughout California with breeding records in the northern and central portions of the State, but the species breeding range in California is poorly known. Breeds within most closed-canopy woodlands and forests, including riparian habitats, from sea level to near alpine elevations, generally nesting in trees near openings. Wintering habitat similar to breeding habitat but more expansive to include suburban and agricultural areas.	**High**. Species would only be present as a wintering or migrating individual. Multiple eBird sightings of the species occur within the surrounding area, including the SDNWR to the southwest. The species would likely utilize preserved and open space areas found to the east, south, and west of the site that provide higher quality foraging habitat.
Tricolored Blackbird (*Agelaius tricolor*)	BCC/SCE, SSC County Group 1 MSCP Covered	Highly colonial, nomadic species occurring as a year-round resident of California from Sonoma County to San Diego. Common locally in the Central Valley and sporadically throughout the state. Breeds in dense colonies. Breeding habitat typically characterized by emergent freshwater marsh dominated by tall, dense cattails and bulrush (*Schoenoplectus* spp.; *Scirpus* ssp.), though also utilizes willows, blackberries (*Rubus* spp.), thistles (*Cirsium* and *Centaurea* spp.), nettles (*Urtica* sp.), and agricultural crops. Forages in grasslands and cropland habitats adjacent to breeding areas.	**Low.** Freshwater marsh habitat on site is limited and too small in size to support the species. The most recent documented occurrences of this species are located further west of the site at Sweetwater Reservoir.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)	--/WL County Group 1 MSCP Covered	Restricted to southwestern California occurring from Santa Barbara County southwards to San Diego County at elevations below 5,000 feet. Generally found on moderate to steep slopes vegetated with grassland, coastal sage scrub, and chaparral. Prefer areas with California sagebrush but are generally absent from areas with dense stands of coastal sage scrub or chaparral. May occur on steep grassy slopes without shrubs if rock outcrops are present.	**None.** The project site is generally flat, lacking suitable sloped hillsides inhabited by the species. Occurrences of the species are found further southeast and southwest of the site along the foothills and hillsides of Mt. San Miguel and McGinty Mountain.
Grasshopper Sparrow (*Ammodramus savannarum*)	--/SSC County Group 1	Occurs west of the Cascade and Sierra Nevada mountains from Mendocino County south to San Diego County at elevations below 5,000 feet. Prefers moderately open grasslands and prairies with scattered shrubs. Generally avoids grasslands with extensive shrub cover.	**None**. The site lacks grassland habitat that is required by the species.
Golden Eagle (*Aquila chrysaetos*)	BCC/WL, FP County Group 1 MSCP Covered	Uncommon permanent resident and migrant throughout California, except the center of the Central Valley. More common in southern California than in northern regions. Inhabits a variety of habitats, nesting in cliffs or trees and rugged terrain and foraging over plains, grasslands, or low and open shrublands including chaparral and coastal sage scrub. Typically absent from heavily forested areas or on the immediate coast and are almost never detected in urbanized environments.	**Low.** The site lacks suitable nesting habitat for the species, and no known nests occur within 4,000 feet of the project site. The species has been observed within the surrounding area but would not be expected to utilize the site for foraging opportunities based on the presence of development and other human disturbances. Additionally, extensive, higher quality habitat is present within preserved and open space areas off site, including the SDNWR.
Great Blue Heron (*Ardea herodias*)	--/-- County Group 2	Year-round resident of California occurring throughout most of the State in saline and freshwater wetlands and shallow estuaries. Nests as single pairs and in small colonies with nests located on the ground, in trees and bushes, and on artificial structures that are usually adjacent to water and secluded from human disturbance. Found in a wide variety of habitats foraging in various wetland habitats, water bodies, and occasionally uplands.	**Present.** Individuals observed foraging in three separate locations within the project site. One individual was detected within the patch of riparian habitat just east of Steele Canyon Road and two other individuals were detected adjacent to artificial ponds to the west of Steele Canyon Road.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Bell's sparrow (*Artemisiospiza belli*)	BCC/WL County Group 1	Non-migratory resident on the coastal ranges of California and western slopes of the central Sierra Nevada mountains. Occurs year-round in southern California. Breeds in dry coastal sage scrub and chaparral, desert scrub, and similar other open, scrubby habitats. In foothill chaparral, they tend toward younger, less dense stands that are recovering from recent fires; less common in older, taller stands that have remained unburned.	**Low.** Small patches of remnant coastal sage scrub occur in the extreme southwestern and southeastern portions of the project site. The closest records of the species are over 2.5 miles south within higher quality coastal sage and chaparral habitat in the SDNWR.
Long-eared Owl (*Asio otus*)	--/SSC County Group 1	Occurs throughout California, particularly in the Central Valley and southern California deserts. Found in dense riparian habitats and oak woodlands adjacent to open foraging areas. Typically nests in abandoned raptor nests in willows and oaks and atop woodrat nests and accumulations of debris trapped in the crotches of large oaks. Winters in communal roosts in dense willow thickets, tamarisk groves, palo verde, and conifers.	**Low**. Suitable riparian habitat occurs in the southwestern portion of the site along Sweetwater River. However, no records of the species occur within the project vicinity.
Burrowing Owl (*Athene cunicularia*)	BCC/SSC County Group 1 MSCP NE MSCP Covered	Found from central California east to the Mojave Desert and south to coastal San Diego County. Primarily a grassland species that prefers areas with level to gentle topography and well-drained soils. Species can also occupy agricultural areas, vacant lots, and pastures. Requires underground burrows for nesting and roosting that are typically dug by other species such as California ground squirrel (*Spermophilus beecheyi*). Also utilizes natural rock cavities, debris piles, culverts, and pipes for nesting and roosting.	**Low**. The site consists of a developed golf course that is subject to on-going maintenance activities (such as irrigation and mowing) and human disturbance. There are no observations of the species within the project vicinity. The closest occurrence record for the species is located over 5 miles west, to the south of Sweetwater Reservoir.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Oak Titmouse (*Baeolophus inornatus*)	BCC/--	Year-round resident found from southern Oregon south through California to northwestern Baja California, Mexico. Occurs throughout most of California but is generally absent from the northwestern coastal region and San Joaquin Valley. Inhabits dry oak and oak-pine woodlands and may use scrub oaks and other scrub habitat near woodlands. Also found in juniper woodlands and open pine forests.	**Present.** Individuals were detected foraging within trees at two separate locations to the east and west of Steele Canyon Road.
Canada Goose (*Branta canadensis*)	--/-- County Group 2 MSCP Covered	Winters in southern California within mixed fresh and brackish water habitats with low grass or succulent leaves. Typically roosts on open water of lakes or ponds. Feeds mainly on cultivated grains, wild grasses, and forbs, but also aquatic plants. Often seen in flocks.	**High.** Artificial ponds and developed golf course areas provide suitable overwintering and foraging habitat for the species and the species is known to occur within the project vicinity.
Red-shouldered Hawk (*Buteo lineatus*)	--/-- County Group 1	In California, the species occurs to the west of Sierra Nevada occupying mature oak and riparian woodlands, eucalyptus groves, and suburban areas near forested areas. Nests in trees, both native and non-native, often located near a water source such as stream or pond.	**Present.** Multiple individuals observed perched in trees or flying overhead within both the eastern and western portions of the site.
Ferruginous Hawk (*Buteo regalis*)	BCC/WL County Group 1 MSCP Covered	Relatively uncommon wintering visitor to California. Occurs at lower elevations in the Modoc Plateau, Central Valley, and Coast Ranges. Inhabits open terrains including grasslands, agricultural areas, and deserts.	**Low**. The species would only occur as wintering and migrating individuals. There are no reported sightings of the species within the project vicinity. The nearest occurrence of the species is located over 5 miles west, near the Sweetwater Reservoir.
Green Heron (*Butorides virescens*)	--/-- County Group 2	In California, the species is a year-round found generally west of the Sierra Nevada and within the southern deserts. Found in a wide variety of wetland habitats such as swamps, marshes, riparian habitat along creeks and streams, lake edges, and man-made ditches, canals, and ponds preferring thick vegetation and avoiding open areas.	**Present.** The species was detected in four separate locations within the project site in association with artificial ponds and existing patches of riparian habitat. Observations included single individuals and at least one pair.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Coastal Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*)	BCC/SSC County Group 1 MSCP NE MSCP Covered	One of seven subspecies occurring in southern California from southern Orange County south to San Diego County. Occupies native scrub vegetation with thickets of mature cacti consisting of cholla (*Cylindropuntia* spp.) or prickly-pear cactus (*Opuntia littoralis*). Cacti must be tall enough to support and protect the bird's nest (typically 3 feet or more in height). Surrounding vegetation usually consists of coastal sage scrub habitat with shrubs normally below the level of nest placement.	**Not expected.** Small patches of remnant coastal sage scrub occur in the extreme southwestern and southeastern portions of the project site but lack mature cacti stands required by the species for nesting. The closest documented location of the species is over 2 miles west of the site, adjacent to the SDNWR.
Turkey Vulture (*Cathartes aura*)	--/-- County Group 1	Observed throughout San Diego County with the exception of extreme coastal San Diego where development is heaviest. Foraging habitat includes most open habitats with breeding occurring in crevices among boulders. Roosts communally preferring stands of large trees or hilly areas, usually away from human disturbance.	**Present**. A single individual was observed soaring overhead in the southwestern portion of the site. No potentially suitable breeding habitat is present on site.
Northern Harrier (*Circus cyaneus*)	--/SSC County Group 1 MSCP Covered	Occurs as a year-round resident in California. Inhabits open areas including wetlands, marshes, marshy meadows, grasslands, riparian woodlands, desert scrub, and pastures and agricultural areas. Breeding populations in southern California from Ventura County to San Diego County are highly fragmented with many local populations extirpated mostly likely as a result of habitat loss and degradation. Nests on the ground in wetlands and uplands within patches of dense, often tall, vegetation in undisturbed areas.	**Moderate.** Potentially suitable riparian habitat occurs along Sweetwater River, but the site has been heavily disturbed previously disturbed by golf course development and is subject to on-going disturbances related to golf course maintenance and operations. Individuals would likely utilize higher quality habitat located offsite within the SDNWR. There are multiple occurrences of the species are reported within the surrounding area.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)	FT, BCC/SE County Group 1 MSCP NE	Uncommon summer resident of California. Current breeding distribution is restricted to isolated sites in Sacramento, Amargosa, Kern, Santa Ana, and Colorado River valleys. Riparian obligates that nest in riparian woodlands with native broadleaf trees and shrubs, such as cottonwoods and willows, at least 50 acres or more in size within the arid to semiarid landscapes. Most likely to be found in patches of riparian habitat greater than 200 acres.	**None**. The site does not contain a sufficient amount of suitable riparian habitat to support this species. Additionally, there are no known breeding records of the species within the project vicinity or greater region.
White-tailed Kite (*Elanus leucurus*)	--/FP County Group 1	Year-long resident of California residing along the coasts and valleys west of the Sierra Nevada foothills and southeast deserts, though the species has also been documented breeding in arid regions east of the Sierra Nevada and within Imperial County. Inhabits low elevation grasslands, wetlands, oak woodlands, open woodlands, and is associated with agricultural areas. Breeds in riparian areas adjacent to open spaces nesting in isolated or relatively large stands of trees.	**Present.** A single individual was observed on numerous occasions during the 2022 biological surveys foraging off-site within the SDNWR. Suitable riparian habitat occurs in the southwestern portion of the site along Sweetwater River. However, the species would most likely nest in more extensive higher quality habitat off site, such as riparian habitat within the SDNWR.
Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	FE/SE County Group 1 MSCP NE MSCP Covered	Breeds in southern California, Arizona, New Mexico, southwestern Colorado, and extreme southern portions of Nevada and Utah. Riparian obligates that breed in relatively dense riparian habitats along rivers, streams, or other wetlands where surface water is present, or soils are very saturated. Breeding habitat can consist of monotypic stands of willows, a mixture of native broadleaf trees and shrubs, monotypic stands of exotics such as tamarisk (*Tamarix* spp.) or Russian olive (*Elaeagnus angustifolia*), or mixture of native broadleaf trees and shrubs with exotics. Restricted in San Diego County to two modest colonies at San Luis Rey River and Santa Margarita River, with a few scattered pairs.	**Low.** Critical habitat for the species is mapped to the west of the site along the Sweetwater River; however, the species was not detected to protocol surveys conducted in 2019 and 2022. Low quality riparian habitat occurs in the southwestern portion of the project along Sweetwater River; however, there are no reported sightings of the species in the area. The last recorded breeding occurrence in the project vicinity was over 2.5 miles west of the site along Sweetwater River, east of Sweetwater Reservoir. Migrating individuals may utilize the site or adjacent off-site areas as stop-over habitat, but breeding pairs are not anticipated based on the lack of recent observations and declining status of the species in the San Diego region.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
California Horned Lark (*Eremophila alpestris actia*)	--/WL County Group 2	In California occurs along the coastal ranges of from San Joaquin Valley south to U.S./Mexico border. Inhabits a wide variety of open habitats with low, sparse vegetation where trees and large shrubs are generally absent. Suitable habitats include grasslands along the coast, deserts within the inland regions, shrub habitat at higher elevations, and agricultural areas.	**High.** Active and abandoned golf course areas provide suitable foraging habitat for the species and the species is known to occur within the project vicinity.
Merlin (*Falco columbarius*)	--/WL County Group 2	Uncommon winter migrant in California occurring from September to May at elevations below 5,000 feet. Often found in open woodland, grasslands, cultivated fields, marshes, estuaries and seacoasts; rarely found in heavily wooded areas or over open deserts.	**High.** The project site provides suitable overwintering and foraging habitat for this species which can also be found within urbanized areas. There are numerous eBird sightings of the species in the project vicinity.
Prairie Falcon (*Falco mexicanus*)	BCC/WL County Group 1	In California, the species is an uncommon permanent resident and migrant that ranges from southeastern deserts northwest along the inner coastal mountains and Sierra Nevada but is absent from northern coastal fog belt. Primary habitats include grasslands, savannahs, alpine meadows, some agricultural fields during the winter season, and desert scrub areas where suitable cliffs or bluffs are present for nest sites. Requires sheltered cliff ledges for cover and nesting which may range in height from low rock outcrops of thirty feet to cliffs up to and higher than 400 feet.	**Low**. The project site does not contain suitable nesting habitat for the species. Few occurrences of the species are present to the west of the site within SDNWR lands surrounding Sweetwater Reservoir.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
American Peregrine Falcon (*Falco peregrinus anatum*)	BCC/FP County Group 1 MSCP NE MSCP Covered	In California, the species is a very uncommon breeding resident and migrant throughout the State. Active nesting sites of this species within California are known from along the coast north of Santa Barbara, in the Sierra Nevada, and other mountains of northern California. Few nest sites are known anecdotally for southern California mostly at coastal estuaries and inland oases. Inhabits a large variety of open habitats including marshes, grasslands, coastlines, and woodlands but is generally absent from desert areas. Typically nest on cliff faces in remote rugged sites where adequate food is available nearby, but the species can also be found in urbanized areas nesting on man-made structures.	**Present**. A pair was observed flying overhead on May 5, 2019. The pair flew north and perched on a transmission tower located the hillside north of the project site. An individual was later observed perched on a tree in the western portion of the site before flying further west and off-site. The pair is presumed to have been foraging individuals moving through the area. No suitable nesting habitat for the species is present within or immediately adjacent to the project site, and no nesting individuals were observed during project surveys.
Yellow-breasted Chat (*Icteria virens*)	--/SSC County Group 1	In California, occurs as a migrant and summer resident breeding from the coastal regions in northern California, east of the Cascades, and throughout the central and southern portions of the State. Breeds in early successional riparian habitats with well-developed shrub layer and an open canopy nesting on the borders of streams, creeks, rivers, and marshes.	**Present.** Two individuals were heard signing in the southwestern portion of the site within the patch of riparian habitat along Sweetwater River. Additional individuals were detected further west of the site within the SDNWR.
Loggerhead Shrike (*Lanius ludovicianus*)	BCC/SSC County Group 1	In California, found year-round throughout the foothills and lowlands from coastal regions to the dessert. Winter migrants found coastally north of Mendocino County. Inhabits a variety of habitats seen foraging over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs. Individuals forage by perching to search for prey (such as large insects, small mammals, amphibians, reptiles, and fish) and using impaling as a means of handling prey.	**High.** The site contains suitable habitat for the species. Reported eBird sightings of the species occur to the west of the site within the SDNWR.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
California Gull (*Larus californicus*)	--/WL County Group 2	In California, winters along coastal regions with breeding populations localized at Mono Lake and southern San Francisco Bay. Breeding colonies nearly always occur on islands in natural lakes, rivers, or reservoirs. In the winter, the species is found along coastal California at beaches, rocky coasts, mudflats, coastal estuaries, and deltas of rivers and streams.	**Low.** Suitable wintering and breeding habitat is absent from the project site. Reported sightings of the species are located further west at Sweetwater Reservoir.
Coastal California Gnatcatcher (*Polioptila californica californica*)	FT/SSC County Group 1 MSCP Covered	Year-round resident of California occurring from Ventura County south to San Diego County, and east within the western portions of San Bernardino and Riverside Counties. Typically occurs in arid, open sage scrub habitats on gently sloping hillsides to relatively flat areas at elevations below 3,000 feet. The composition of sage scrub in which gnatcatchers are found varies; however, California sagebrush is at least present as dominant or co-dominant species. Mostly absent from areas dominated by black sage, white sage, or lemonadeberry, though may occur more regularly in inland regions dominated by black sage.	**Present.** A female gnatcatcher was observed foraging with and feeding one fledgling in the extreme southwestern portion of the site on June 11, 2019. Additional observations of the species in 2019 include a single juvenile calling within the patch of riparian habitat along Sweetwater River in the southwestern portion of the site on July 1 and another female/juvenile type foraging in the same general area on July 17. In 2022, two single males were detected off-site to the southeast of the southeastern portion of the site, and one male with juvenile was observed off-site to the southwest of the southwestern portion of the site. Though the species was observed within the project site, suitable habitat present is limited to small remnant patches of coastal sage scrub in the extreme southwestern and southeastern portions of the site that connect to larger blocks of coastal sage scrub that continue off site. The species may utilize these areas for foraging opportunities but would most likely breed off site in more extensive, higher quality habitat.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Vermilion Flycatcher (*Pyrocephalus rubinus*)	--/SSC County Group 1	Scarce breeding records occur in southern California with a few individuals wintering regularly along the California coast from Ventura County south to San Diego County. Suitable habitat includes arid scrub, farmlands, parks, golf courses, desert, savanna, cultivated lands, and riparian woodland, usually near water. Wintering individuals can be found in open and semi-open areas with hedges, scattered trees and bushes, and often near water. The species is known to breed and winter at selected sites within San Diego.	**Present.** Multiple individuals and pairs were observed within and throughout the project site during project surveys. At least 2 breeding pairs were confirmed to occupy the site during 2019 and a pair was observed with an active nest in 2022. Observations included adult male and females, immature males and females, and numerous fledglings
Yellow Warbler (*Setophaga petechia*)	BCC/SSC County Group 2	Common to locally abundant species breeding throughout California at elevations below 8,500 feet, excluding most of the Mojave Desert, and all of the Colorado Desert. Breeds in riparian areas dominated by willows and cottonwoods, near rivers, streams, lakes, and wet meadows. Also breeds in montane shrub and conifer forests at higher elevation areas.	**Present.** Multiple individuals were detected throughout the project site within riparian habitat and the developed golf course. Observations include both migrating and breeding individuals.
Western Bluebird (*Sialia mexicana*)	--/-- County Group 2 MSCP Covered	Common year-round resident throughout California, but absent from the higher mountains and eastern deserts. Breeds in open woodlands, riparian habitats, grasslands, and farmlands. Nests and roosts in cavities of trees and snags, often in holes previously created by woodpeckers, and nest boxes. Winters in a wider variety of habitats.	**Present.** Multiple individuals were detected throughout the project site within riparian habitat and the developed golf course. Suitable breeding habitat is present on site.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Lawrence's Goldfinch (*Spinus lawrencei*)	BCC/--	Resident of California breeding from Tehama, Shasta, and Trinity Counties to the foothills surrounding Central Valley, south through the southern Coast Range to Santa Barbara County continuing into San Diego County and east to the western edge of the southern Mojave and Colorado Deserts. Found year-round in areas south of Kern County with wintering individuals observed further east into the desert regions and Colorado River valley. Inhabits arid and open woodlands adjacent to scrub or chaparral habitats, grasslands or meadows, and water resources such as a stream, pond, or lake from sea level up to 10,000 feet.	**Present.** A small flock was observed foraging within the eastern portion of the project along the southern boundary. The species is highly nomadic, flocking to areas where food sources are abundant, and most likely utilizes the site for foraging opportunities.
Barn Owl (*Tyto alba*)	--/-- County Group 2	Common, yearlong resident of California found in open habitats such as grassland, chaparral, riparian, and wetlands avoiding dense forests and open desert habitats. Also found in urban and suburban areas. Nest in sheltered areas of cliffs or man-made structures, on ledges, in crevices, culverts, nest boxes, and in cavities in trees. Roosts in dense vegetation, cliffs, and buildings and other man-made structures.	**Present.** A single individual was observed foraging in the eastern portion of the site during an evening toad survey.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Least Bell's Vireo (*Vireo bellii pusillus*)	FE/SE County Group 1 MSCP NE MSCP Covered	In California, breeds along the coast and western edge of the Mojave Desert from Santa Barbara County south to San Diego County, and east to Inyo, San Bernardino, and Riverside Counties. Breeding habitat consists of early to mid-successional riparian habitat, often where flowing water is present, but also found in dry watercourses within the desert. A structurally diverse canopy and dense shrub cover is required for nesting and foraging. Dominant species within breeding habitat includes cottonwood and willows with mule fat, oaks, and sycamore, and mesquite (*Prosopis glandulosa*) and arrowweed (*Pluchea sericea*) within desert habitats. The species can be tolerant of the presence of non-native species such as tamarisk.	**Present.** A total of two vireo pairs, and six additional male vireos were detected during the 2019 protocol surveys. One LBVI pair and three male vireos were detected within the project site. The LBVI pair was observed foraging with and feeding three fledglings on May 30, 2019 in the patch of riparian habitat directly east of Steele Canyon Road. Additionally, one LBVI pair and three male vireos were detected outside of the project site. The pair was observed to the west within the San Diego National Wildlife Refuge, two of the males were detected within the Steele Canyon Golf Course, and one male was observed to the west within the San Diego National Wildlife Refuge. Surveys conducted in 2022 confirmed least Bell's vireos were present in the same general locations. Critical habitat for the species occurs both on-site and off-site along Sweetwater River.
Mammals			
Pallid bat (*Antrozous pallidus*)	--/SSC County Group 2	Locally common species found at low elevations in California. Associated with arid and open habitats including grasslands, shrublands, woodlands, and forests, often with open water nearby. Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Day roosts in caves, crevices, mines, and occasionally hollow trees and buildings. Appears to be intolerant of most human disturbances, being mostly absent from urban and suburban areas.	**Low.** The species preferred roosting sites do not occur within the project site, and the site is subject to anthropogenic disturbances related to golf course activities and residential development occurs within much of the surrounding region. This species was not documented within the project site during the 2022 bat surveys.
Ringtail (*Bassariscus astutus*)	--/FP County Group 2	Wide-ranging species found throughout California. Inhabits riparian areas and stands of most forest and shrub habitats in close association with rocky areas or riparian habitats.	**Low.** Though suitable habitat occurs on site, there are few documented occurrences of the species west of the Cuyamaca and Laguna Mountains. The nearest sighting of the species is located further east near Crestwood Ecological Reserve and Harbison Canyon.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Dulzura pocket mouse (*Chaetodipus californicus femoralis*)	--/SSC County Group 2	Occurs in the foothills and mountains of San Diego County, although can also be found on the upper portions of mountain slopes extending into the desert regions. Ranges from the coastal regions (Oceanside to Del Mar, and possibly south to the Tijuana River Valley), eastwards to the Palomar and Cuyamaca Mountains, and extends to the desert slopes of San Felipe Valley, Cigarette Hills, and McCain Valley. Prefers gravelly substrates with sun exposure and can be found within open to dense vegetation. Inhabits chaparral habitats, but is occurs within coastal sage scrub, oak woodland, and at the edge of grasslands.	**Low.** The project site is an active golf course. Though remnant patches of coastal sage scrub occur at the extreme southeastern and southwestern portions of the site, these areas are small in size lacking gravelly and rocky substrates and preferred shrub cover. Recorded observations of the species occur further west within the SDNWR.
Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)	--/SSC County Group 2	Occurs throughout southwestern California from western Riverside County south to San Diego County at elevations below 6,000 feet. Inhabits coastal sage scrub, grasslands, and chaparral communities, and generally exhibits a strong microhabitat affinity for moderately gravelly and rocky substrates. Forage for seeds from California sagebrush, California buckwheat, lemonade berry, and grasses under shrub and tree canopies, or around rock crevices.	**Low.** The project site is an active golf course. Though remnant patches of coastal sage scrub occur at the extreme southeastern and southwestern portions of the site, these areas are small in size lacking gravelly and rocky substrates and preferred shrub cover. Recorded observations of the species occur further west within the SDNWR.
Mexican long-tongued bat (*Choeronycteris mexicana*)	--/SSC County Group 2	Found in arid habitats at elevations from sea level to 1,640 feet in San Diego County. This species is associated with urban coastal areas and inland valleys. Found near ornamental plants that offer nectar as a food source. Primarily roosts in caves, but can also be found roosting in crevices, mines, buildings, and under exposed roots of trees.	**High.** Occurrences of the species in small numbers are found approximately 3 miles northwest of the site within the communities of El Cajon and Mt. Helix. Suitable nectaring resources may occur within adjacent residential areas and buildings within the project could potentially provide suitable roosting habitat. This species was not documented within the project site during the 2022 bat surveys.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Townsend's big-eared bat (*Corynorhinus townsendii pallescens*)	--/SSC County Group 2	Occurs throughout California but distribution is strongly correlated with the availability of caves and cave-like roosting habitat. Found in a variety of habitats with presence of caves or cave-like structures (such as buildings). In San Diego County, presumed absent from coastal areas being found more commonly in historic mining districts and boulder-strewn regions (i.e., Escondido, Lakeside, Dulzura, Jacumba, etc.).	**Present.** This species was detected by AnaBat detectors within the eastern and western portions of the project site. The species likely utilizes the site for foraging opportunities but is unlikely to roost within the project site as preferred roosting sites are not present. Although buildings within the project suite could provide potential roosting habitat, this species is highly susceptible to disturbance and will abandon its roost if disturbed.
Stephens' kangaroo rat (*Dipodomys stephensi*)	FE/ST County Group 1	Occurs in southern California within the San Jacinto Valley, western Riverside County, and southwestern San Bernardino County, and northwestern San Diego county at elevations between 4,100 feet. Inhabits native to open grasslands and sparse coastal sage scrub (less than 30 percent cover) on relatively flat or gently sloping ground. Dominant species include native and non-native herbaceous species such as filaree (*Erodium* sp.), non-native grasses (*Bromus* ssp.), California sagebrush, and California buckwheat.	**None.** The project site occurs outside of the known range of the species and lacks suitable grassland habitat in which the species occurs.
Spotted bat (*Euderma maculatum*)	--/SSC County Group 2	In California, found in a small number of localities in the foothills, mountains, and desert regions at elevations below 10,000 feet. Inhabits rocky arid and semi-arid environments including forested mountains, open shrublands, and deserts. Roosts in rock crevices along cliffs adjacent to wide expanses of open habitat. Occasionally roosts in caves and buildings.	**None.** Suitable rocky habitats for the species are absent from the project site and there are no documented occurrences of the species within the project vicinity. This species was not documented within the project site during the 2022 bat surveys.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Western mastiff bat (*Eumops perotis californicus*)	--/SSC County Group 2	In California, the species occurs from Monterey County to San Diego County from the coast eastward to the Colorado Desert. Found in open, semi-arid to arid habitats including coastal and desert scrub, grasslands, woodlands, and palm oases. Prefers to roost in high situations above the ground on vertical cliffs, rock quarries, outcrops of fractured boulders, and occasionally tall buildings.	**Present.** This species was detected by AnaBat detectors within the western portion of the project site. The species likely utilizes the site for foraging opportunities but is unlikely to roost within the project site as preferred roosting sites are not present.
Mountain lion (*Felis concolor*)	--/-- County Group 2 MSCP Covered	Uncommon permanent resident found throughout California in nearly all habitats, expect xeric regions of Mojave and Colorado deserts. Requires extensive riparian vegetation and brushy habitats with interspersed irregular terrain, rocky outcrops, and tree or brush edges. Main prey is mule deer.	**Low**. The project is an active golf course with residential development to the north and south. The site is not located within a high functioning wildlife corridor or linkage and in its current condition is unlikely to facilitate movement and connect the species to adjacent open spaces areas in the region.
Western red bat (*Lasiurus blossevillii*)	--/SSC County Group 2	In California, the species is locally common occurring from Shasta County south to San Diego County and west of the Sierra Nevada/Cascade Range and deserts. Mainly occurs in riparian woodlands populated by willows, cottonwoods, sycamores, and oak trees but can be found in non-native vegetation such as tamarisk, eucalyptus, and orchards. Primarily roosts in trees preferring heavily shaded areas which are open underneath.	**Present.** This species was detected by AnaBat detectors within the western portion of the project site. This tree roosting species has potential to roost within riparian habitat and planted trees within the project site. The species would also be expected to utilize the site for foraging opportunities.
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	--/SSC County Group 2	Occurs along the coastal regions of southern California south to northern Baja California. Found in arid regions preferring grasslands, agricultural fields, and sparse scrub. Typically absent from areas with high-grass or dense brush, such as closed-canopy chaparral, primarily occupying short-grass and open scrub habitats.	**Low.** The project site is an active golf course. Though remnant patches of coastal sage scrub occur at the extreme southeastern and southwestern portions of the site, these areas are small in size lacking gravelly and rocky substrates and preferred shrub cover. Recorded observations of the species occur further southeast and southwest within the SDNWR.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
California leaf-nosed bat (*Macrotus californicus*)	--/SSC County Group 2	In California, ranges from Ventura County south to the U.S./Mexico Border. Within San Diego County, primarily occurs as a desert species within the Anza-Borrego Desert, but has also been documented in the western foothills along the Santa Margarita River and inland valley of Dulzura. Uses caves and similar structures for roosting including buildings, bridges, and fallen palm trunks. Forages along desert washes and floodplains in the east, and sandy river valleys along the coast.	**None.** The project site is located outside of the known habitat and distribution of the species. This species was not documented within the project site during the 2022 bat surveys.
Small-footed myotis (*Myotis ciliolabrum*)	--/-- County Group 2	Found throughout California occurring in desert, chaparral, riparian areas, and forests. Presence of riparian areas and waters appears to be important in distribution. Strongly associated with chaparral and montane habitats in San Diego County. Roosts solitarily or in small numbers in rocky crevices, caves, mines, snags, buildings, and bridges.	**Present.** This species was detected by AnaBat detectors within the eastern portion of the project site. The species likely utilizes the site for foraging and has potential to roost within trees and buildings present within the project site.
Long-eared myotis (*Myotis evotis*)	--/-- County Group 2	Widespread in California, but generally believed to be uncommon in most of its range. Avoids the arid Central Valley and hot deserts, occurring along the entire coast and in the Sierra Nevada, Cascades, and coastal mountain ranges below 9,000 feet. Occurs in riparian zones and chaparral but is found primarily in oak woodlands and pine forests in the foothills and mountains. It roosts in crevices and cavities in rocks and trees and is sometimes found in man-made structures such as buildings, bridges, and mines.	**Moderate.** Limited suitable riparian habitat occurs in the southwestern portion of the site along Sweetwater River. More extensive higher quality habitat occurs off site within the SDNWR. The species was recorded in 2003 approximately 1 mile west of the site adjacent to Campo Road along Sweetwater River. This species was not documented within the project site during the 2022 bat surveys.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Yuma myotis (*Myotis yumanensis*)	--/-- County Group 2	Widespread in California but uncommon in the Mojave and Colorado Deserts, except in the mountain ranges bordering the Colorado River valley. Found in a variety of habitats including juniper and riparian woodlands, riparian forests, and desert regions where bodies of water (i.e., rivers, streams, ponds, lakes, etc.) are present. Closely associated with water which it uses for foraging and sources of drinking water. Roosts in caves, attics, buildings, mines, underneath bridges, and other similar structures.	**Present.** This species was detected by AnaBat detectors and during the nighttime emergence survey within the western and eastern portions of the project site. The species likely utilizes the site for foraging and has potential to roost within trees and buildings present within the project site. Bridges suitable for roosting were not observed on site.
San Diego Bryant's (formerly desert) woodrat (*Neotoma bryanti [formerly lepida] intermedia*)	--/SSC County Group 2	Occurs along the coastal regions of California being found as far north as San Luis Obispo County, south to San Diego County, and in the western portions of San Bernardino and Riverside Counties. Inhabits a variety of shrub and desert habitats such as coastal sagebrush scrub, chaparral, pinyon-juniper woodland, and Joshua tree woodland among others. Often associated with rock outcroppings, boulders, cacti patches, and areas with dense understories. Construct dens used for shelter, food storage, and nesting around rock outcroppings and cacti using various materials such as twigs, sticks, and other debris.	**Low.** The project site is an active golf course. Though remnant patches of coastal sage scrub occur at the extreme southeastern and southwestern portions of the site, these areas are small in size lacking preferred shrub cover and rocky areas inhabited by the species.
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	--/SSC County Group 2	Rare in California occurring from Los Angeles County eastwards to San Bernardino County, and southwards to San Diego County. Closely associated with their preferred roosting habitats consisting of vertical cliffs, quarries, and rocky outcrops. Sometimes roosts under tiled roofs and observed utilizing bat boxes. Habitat generalists foraging in grasslands, shrublands, riparian areas, oak woodlands, forests, meadows, and ponds favoring larger water bodies for drinking.	**Low.** The site lacks suitable roosting habitat, though the species could utilize the site for foraging opportunities. The species was recorded in 2002 approximately 1 mile west of the site adjacent to Campo Road along the Sweetwater River. This species was not documented within the project site during the 2022 bat surveys.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
Big free-tailed bat (*Nyctinomops macrotis*)	--/SSC County Group 2	Rare in California with species found in urban areas of San Diego County. Closely associated with their preferred roosting habitats consisting of vertical cliffs, quarries, and rocky outcrops. Also roosts in buildings and occasionally holes in trees. Associated with coastal and desert scrub, forests, riparian zones, and montane woodlands. Probably does not breed in California.	**Low.** The site lacks suitable roosting habitat, though the species could utilize the site for foraging opportunities. The species was recorded in 2002 approximately 1 mile west of the site adjacent to Campo Road along the Sweetwater River. This species was not documented within the project site during the 2022 bat surveys.
Southern mule deer (*Odocoileus hemionus fuliginatus*)	--/-- County Group 2 MSCP Covered	Found throughout California with the species lacking from only completely urbanized areas and the desert floor. Distribution determined by vegetation type, water availability, and quality and quantity of foraging habitat. Inhabits a wide array of habitats from grasslands, meadows, coastal sage scrub, chaparral, riparian and montane forests. Crepuscular activity and movements are along routes that provide the greatest amount of protective cover.	**Low**. The project is an active golf course with residential development to the north and south. The site is not located within a high-functioning wildlife corridor or linkage and in its current condition is unlikely to facilitate movement and connect the species to adjacent open spaces areas in the region.
Southern grasshopper mouse (*Onychomys torridus ramona*)	--/SSC County Group 2	Ranges from the San Joaquin Valley of Los Angeles County south to northwest Baja California. Typically found in open valleys on the coastal side of the mountains but may extend a short distance onto the eastern desert slopes. Within San Diego County, has only been found on the eastern desert slopes within Dameron Valley, San Felipe Valley, and Scissors Crossing. Prefers open habitats with soft terrain and friable soils within grasslands, coastal sage scrub, alluvial fans, and desert scrub.	**None.** The project site is located outside of the known distribution of the species.

Species	Status[1]	Habitat Associations	Potential to Occur[2]
American badger (*Taxidea taxus*)	--/SSC County Group 2 MSCP Covered	Uncommon, permanent resident found through California, except for the extreme north coast areas. Associated with large blocks of undeveloped land composed of open valleys, alluvial fans, meadows, grasslands, and sandy desert. Dens function as sites for resting and parturition. Friable, easily crumbled soils are important for denning.	**Low.** The project site is an active golf course with residential development occurs to the north and south. There are no recent records of the species within the project vicinity.

[1] F = Federal; S = State of California; E = Endangered; T = Threatened; CE = Candidate Endangered; R = Rare; BCC = Federal Bird of Conservation Concern; SSC = State Species of Special Concern; FP = State Fully Protected; WL = Watch List

County of San Diego Sensitivity Status: Animals are divided into Groups I and II on the Sensitive Animal List. Group I Animals include those that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements that must be met. Group 2 Animals include those species that are becoming less common but are not yet so rare that extirpation or extinction is imminent without immediate action. These species tend to be prolific within their suitable habitat types.

MSCP Covered Species: Covered Species under County's Subarea Plan.

[2] Potential to Occur is assessed as follows. **None**: The project site is located outside of the species known range and distribution, or the species is so limited to a particular habitat that it cannot disperse on its own, and habitat suitable for its establishment and survival does not occur in the project site; **Not Expected**: There are no present or historical records of the species occurring on or in the immediate vicinity of the project site. The species moves freely and might disperse through or across the study area, but suitable habitat for residence or breeding does not occur; **Low**: Suitable habitat is present in the project site and there is a historical record of the species in the project vicinity, but no sign of the species was observed during surveys. Existing conditions such as elevation, species composition, density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, and/or isolation may substantially reduce the possibility that the species may occur; **Moderate**: Diagnostic habitats associated with the species occur on or adjacent to the project site, but there is no recent documented occurrence of the species within the immediate vicinity. Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity; **High**: Suitable habitat associated with the species occurs in the project site and the species has been recorded recently on or near the project but was not observed during biological surveys; Present: The species was observed during biological surveys for the project and is assumed to occupy the project site.

Appendix M

Explanation of Status Codes for Plant and Animal Species

FEDERAL, STATE, AND LOCAL CODES

U.S. FISH AND WILDLIFE SERVICE (USFWS)

FE Federally listed endangered
FT Federally listed threatened
BCC Birds of Conservation Concern (discussed in more detail below)
BGEPA Bald and Golden Eagle Protection Act (discussed in more detail below)

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW)

SE State listed endangered
ST State listed threatened
SSC State species of special concern
WL Watch List

Fully Protected — Fully Protected species refer to all vertebrate and invertebrate taxa of concern to the Natural Diversity Data Base regardless of legal or protection status. These species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFW.

COUNTY OF SAN DIEGO

Plant sensitivity

List A — Plants rare, threatened, or endangered in California or elsewhere
List B — Plants rare, threatened, or endangered in California but more common elsewhere
List C — Plants that may be quite rare, but more information is needed to determine rarity status
List D — Plants of limited distribution and are uncommon, but not presently rare or endangered

Animal sensitivity

Group 1 — Animals that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements that must be met
Group 2 — Animals that are becoming less common but are not yet so rare that extirpation or extinction is imminent without immediate action. These species tend to be prolific within their suitable habitat types

MULTIPLE SPECIES CONSERVATION PROGRAM (MSCP) COVERED

Multiple Species Conservation Program covered species for which the County has take authorization within the MSCP area.

MSCP NARROW ENDEMIC (NE)

Narrow endemic species are native species that have "restricted geographic distributions, soil affinities, and/or habitats." The MSCP participants' subarea plans have specific conservation measures to ensure impacts to narrow endemics are avoided to the maximum extent practicable.

OTHER CODES AND ABBREVIATIONS

USFWS BIRDS OF CONSERVATION CONCERN (BCC)

The primary legal authority for Birds of Conservation Concern (2008) is the Fish and Wildlife Conservation Act of 1980 (FWCA), as amended. Other authorities include the Endangered Species Act, Fish and Wildlife Act (1956) and 16 USC §701. A FWCA 1988 amendment (Public Law 100-653, Title VIII) requires the Secretary of the Interior through the USFWS to "identify species, subspecies, and populations of all migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973." The 2008 BCC report is the most recent effort by the USFWS to carry out this proactive conservation mandate.

The BCC report aims to identify accurately the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the USFWS' highest conservation priorities and draw attention to species in need of conservation action. The USFWS hopes that by focusing attention on these highest priority species, the report will promote greater study and protection of the habitats and ecological communities upon which these species depend, thereby ensuring the future of healthy avian populations and communities. Birds of Conservation Concern 2008 lists are available online at https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php.

USFWS BALD AND GOLDEN EAGLE PROTECTION ACT (BGEPA)

In 1782, Continental Congress adopted the bald eagle as a national symbol. During the next one and a half centuries, the bald eagle was heavily hunted by sportsmen, taxidermists, fisherman, and farmers. To prevent the species from becoming extinct, Congress passed the Bald Eagle Protection Act in 1940. The Act was extremely comprehensive, prohibiting the take, possession, sale, purchase, barter, or offer to sell, purchase, or barter, export or import of the bald eagle "at any time or in any manner."

In 1962, Congress amended the Eagle Act to cover golden eagles, a move that was partially an attempt to strengthen protection of bald eagles, since the latter were often killed by people mistaking them for golden eagles. The golden eagle, however, is accorded somewhat lighter protection under the Act than the bald eagle. Another 1962 amendment authorizes the Secretary of the Interior to grant permits to Native Americans for traditional religious use of eagles and eagle parts and feathers.

CALIFORNIA NATIVE PLANT SOCIETY (CNPS) CALIFORNIA RARE PLANT RANKING (CRPR)

Lists

1A = Presumed extinct.

1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.

2 = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.

3 = Distribution, endangerment, ecology, and/or taxonomic information needed. Some eligible for state listing.

4 = A watch list for species of limited distribution. Needs monitoring for changes in population status. Few (if any) eligible for state listing.

List/Threat Code Extensions

.1 – Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 – Fairly endangered in California (20 to 80 percent occurrences threatened)

.3 – Not very endangered in California (less than 20 percent of occurrences threatened, or no current threats known)

A "CA Endemic" entry corresponds to those taxa that only occur in California.

All List 1A (presumed extinct in California) and some List 3 (need more information; a review list) plants lacking threat information receive no extension. Threat Code guidelines represent only a starting point in threat level assessment. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Code.

Appendix N

Conceptual Revegetation Plan

Cottonwood Sand Mine Project

Conceptual Revegetation Plan

PDS2018-MUP-18-023
PDS2018-RP-18-001
PDS2018-ER-18-19-007

Prepared for:

County of San Diego
Planning and Development Services
5510 Overland Avenue, Suite 310
San Diego, CA 92123

Project Proponent:

New West Investment Group, Inc.
565 N. Magnolia Avenue
El Cajon, CA 92020

Prepared by:
HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

~~March 2023~~May 2025 | 02975.00002.002

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ACRONYMS AND ABBREVIATIONS

AMSL	above mean sea level
BOS	Biological Open Space
BTR	Biological Technical Report
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CFG	California Fish and Game
County	County of San Diego
CWA	Clean Water Act
CWMW	California Wetlands Monitoring Workgroup
CY	cubic yards
DCSS	Diegan Coastal Sage Scrub
GPS	global positioning system
ft	feet
HELIX	HELIX Environmental Planning, Inc.
m	meter
MSCP	Multiple Species Conservation Program
MUP	Major Use Permit
NRCS	Natural Resources Conservation Service
PAMA	Pre-Approved Mitigation Area
POC	Point of Connection
Project	Cottonwood Sand Mine Project
RPO	Resource Protection Ordinance
RWQCB	Regional Water Quality Control Board
SDG&E	San Diego Gas & Electric
SDNWR	San Diego National Wildlife Refuge
SHBs	shot-hole borers
SMARA	Surface Mining and Reclamation Act
SR	State Route
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

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1.0 INTRODUCTION

This report presents a revegetation plan for impacts resulting from the Cottonwood Sand Mine Project (project) located in the unincorporated community of Rancho San Diego in eastern San Diego County, California. This plan addresses revegetation of areas temporarily impacted as part of mining activities pursuant to the Surface Mining and Reclamation Act (SMARA) and Sections 1810 and 6550-6556 of the County of San Diego (County) Zoning Ordinance, as well as restoration of wetland buffer areas disturbed as part of mining activities in accordance with Section 86.605(d) of the County's Resource Protection Ordinance (RPO) requirements (County 2011). Included in this document is an implementation, maintenance, and monitoring plan for the on-site revegetation of approximately 108.87 acres of wetland and riparian associated habitat, 11.92 acres of Diegan coastal sage scrub (DCSS) habitat, and 97.90 acres of stabilized non-sensitive uplands (i.e., erosion control areas). This report has been prepared in conformance with the County's Report Format and Content Requirements for Revegetation Plans (County 2007).

Revegetation is proposed to ensure that areas disturbed as part of mining activities are reclaimed (i.e., adequately revegetated and stabilized) in accordance with SMARA and County requirements, and that existing wetland buffer areas are appropriately restored pursuant to the County RPO (County 2011). A portion of the reclaimed site will also provide compensatory mitigation for impacts to wetland and water resources under the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA; 33 USC 1344), Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA, and California Department of Fish and Wildlife (CDFW) pursuant to Sections 1600 et seq. of the California Fish and Game (CFG) Code, and to areas considered County RPO wetlands. Restoration of the mitigation area is addressed separately from this plan within the project's Conceptual Wetland Mitigation Plan (HELIX Environmental Planning, Inc. [HELIX] 2025~~3~~a). The wetland mitigation area and native revegetation areas will be concurrently preserved within the project's biological open space area.

Nomenclature used in this report follows Holland (1986) and Oberbauer (2008) for vegetation; Jepson eFlora (2023) and Calflora (2023) for plants; Pelham (2022) and Davenport (2018) for butterflies; Society for the Study of Amphibians and Reptiles (2023) for reptiles and amphibians; American Ornithological Society (2022) for birds; and Bradley et al. (2014) and Tremor et al. (2017) for mammals.

2.0 PROJECT DESCRIPTION

2.1 RESPONSIBLE PARTIES

New West Investment, Inc. (or its successor in interest) will be responsible for financing the installation and maintenance and monitoring of the revegetation proposed in this plan. Contact information is provided below:

Contact: Jim Conrad, Owner's Representative
New West Investment, Inc.
565 N. Magnolia
El Cajon, CA 92020
619-441-1463

2.2 PROJECT LOCATION

The approximately 280-acre project site is located in the unincorporated community of Rancho San Diego in eastern San Diego County, California (Figure 1, *Regional Location*). It is depicted within unsectioned lands of Township 16 South, Ranges 1 West and 1 East of the Jamul Mountains and El Cajon, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps (Figure 2, *USGS Topograph*y). The site lies north of State Route (SR) 94 and east of SR 54 within the Cottonwood Golf Club. More specifically, the site occurs southeast of Willow Glen Drive, north of Jamul Drive, east of Jamacha Road, and west of Hillsdale Road at 3121 Willow Glen Drive, El Cajon, California (Figure 3, *Aerial Vicinity*). Steele Canyon Road bisects the project site from north to south, near the center of the site. The project site occurs within the following 24 Assessor Parcel Numbers: 506-021-19-00, 506 020-52, 518-012-13, 518-012-14, 518-030-05 through 518-030-08, 518-030-10, 518-030-12, 518 030-13, 518-030-15, 518-030-21, 518-030-22-00, 519-010-15, 519-010-17, 519-010-20, 519-010-21, 519-010-33, 519-010-34, 519-010-37, 519-011-03, 506-021-31, and 506-021-30.

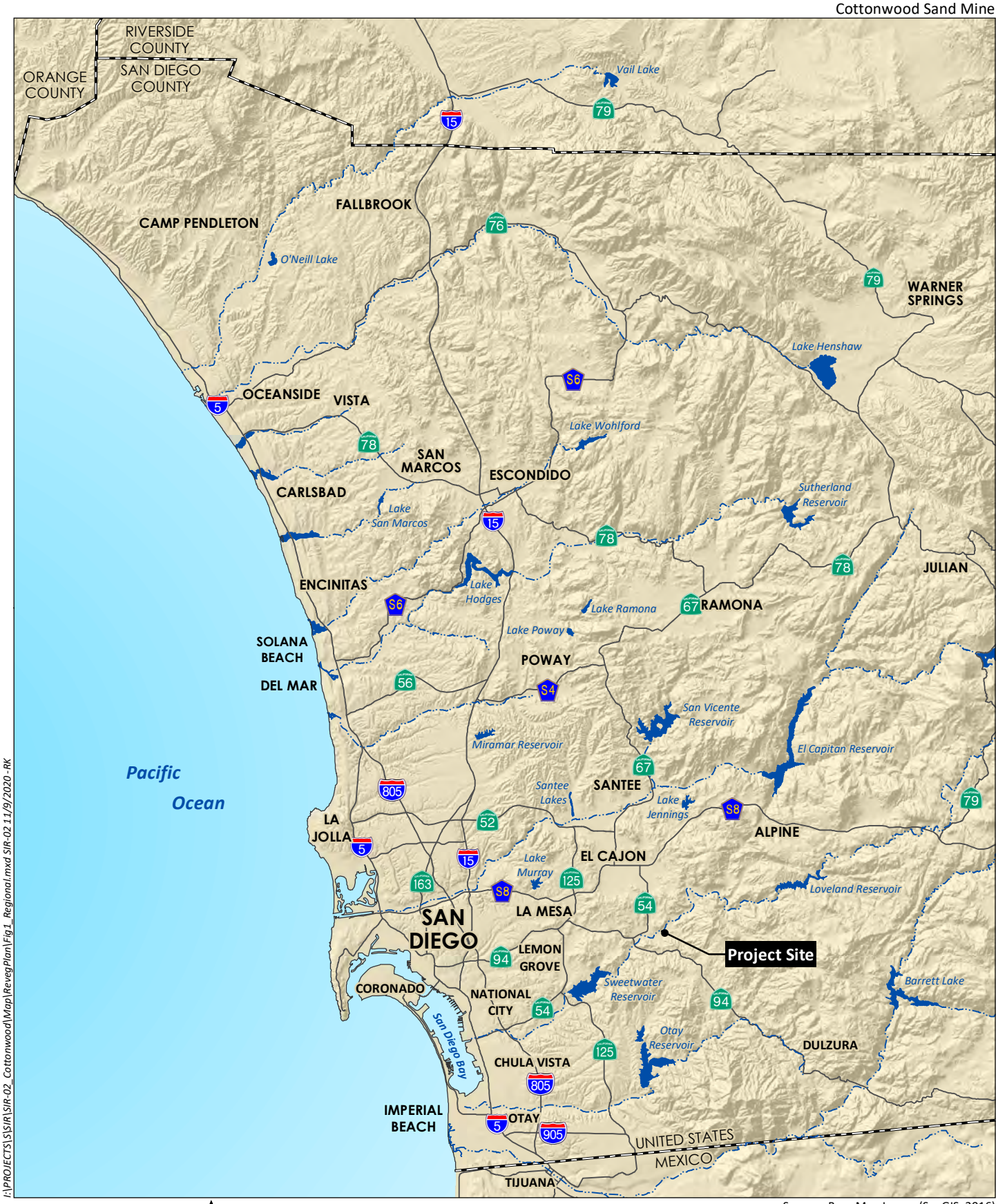
The site is located on unincorporated lands within the South County and Metro-Lakeside-Jamul segments of the County's Multiple Species Conservation Program (MSCP) Subarea Plan (Figure 4, *MSCP Designations*). Within the MSCP, portions of the site along the northeastern, southern, and southeastern boundaries occur within areas identified as Pre-Approved Mitigation Area (PAMA), and Minor Amendment lands occur in the southwestern portion of the site along the Sweetwater River (Figure 4).

2.3 PROJECT SUMMARY

2.3.1 Project Description

The project site is currently occupied by the Cottonwood Golf Club, which consists of two 18-hole golf courses, one east of Steele Canyon Road and the other located to the west. Currently, only the eastern course is operational; operation of the western course was suspended in 2017. The project proposes to convert the two golf courses into a sand mining operation that would be conducted in three phases over 10 years, with a fourth phase for cleanup, equipment removal, and final reclamation (Figure 5, *Site Plan and Mine Phasing*). The project's mining operations would extract, process, and transport sand using conventional earth-moving and processing equipment. Approximately 4.3 million cubic yards (CY; 6.40 million tons) of material are proposed to be extracted, with approximately 3.8 million CY (5.7 million tons) of sand and gravel for market use, with a 10 percent waste factor from the total amount extracted that includes wash fines and materials undesirable for processing (approximately 427,000 CY). These materials would be retained on-site and utilized for backfilling. In addition, approximately 2.5 million CY would be imported to the site to meet the backfill requirements. The imported material would consist of inert debris only. Inert debris would consist of excavated soil material from development projects, clean demolition materials, and possibly concrete, asphalt, and rock. The project would be conditioned to only accept materials suitable for the end use of the site.

Extraction operations would be limited to a maximum production of 380,000 CY (570,000 tons) of construction grade aggregate (sand) per calendar year. Material extracted and processed at the site would be suitable for construction uses and would be available to customers in San Diego County. Approximately 214.4 acres of the approximately 251.10 acre Major Use Permit (MUP) boundary are proposed for extractive use under a phased extraction program. Surface areas not disturbed by mining would either be left in their current condition or be subject to enhancement through the removal of



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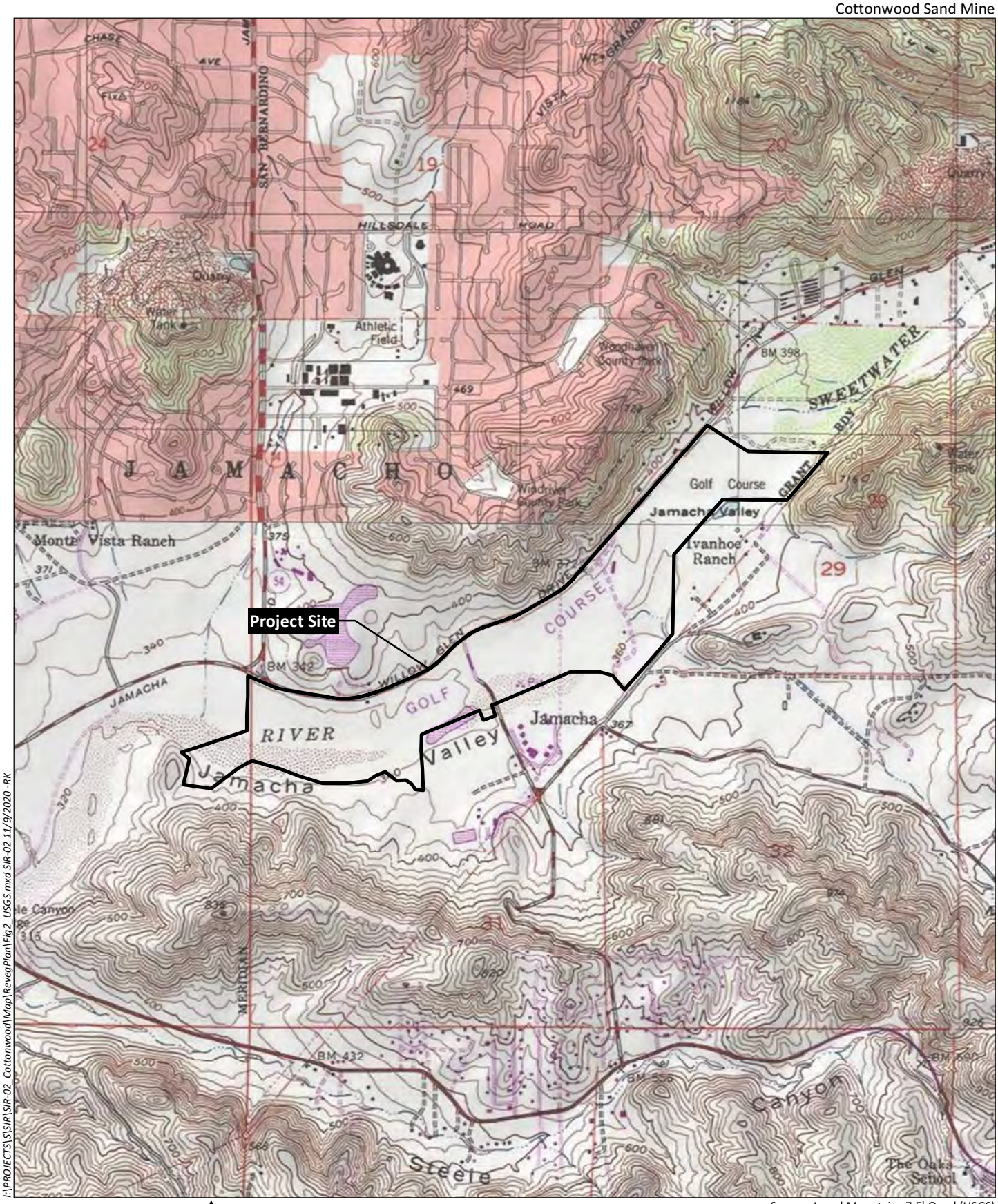
0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



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0 2,000 Feet

Source: Jamul Mountains 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

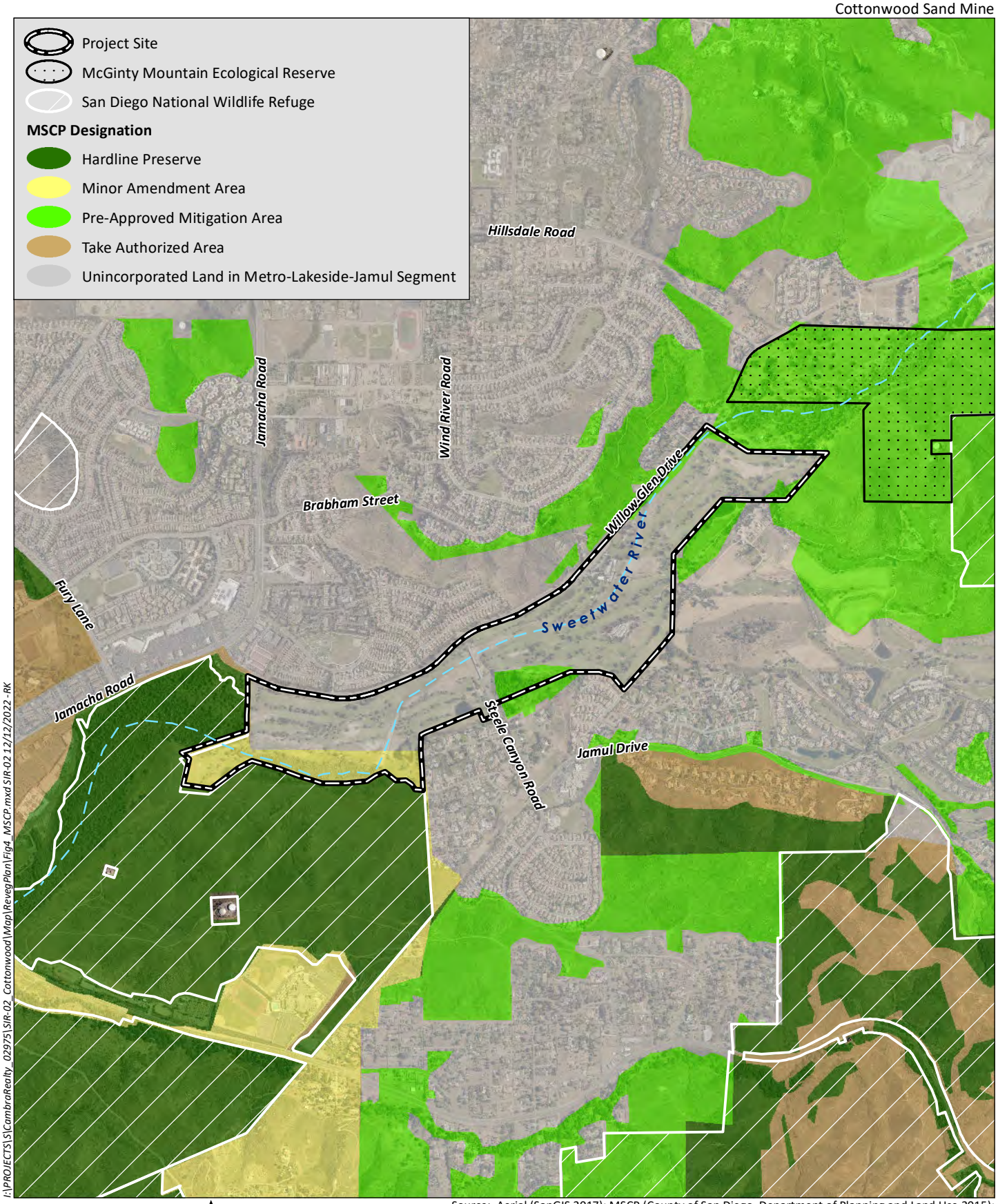
Figure 2

Source: Aerial (SanGIS 2019); NWR (U.S. Fish and Wildlife Service 2016)

HELIX Environmental Planning

Aerial Vicinity

Figure 3



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Source: Aerial (SanGIS 2017); MSCP (County of San Diego, Department of Planning and Land Use 2015); NWR (U.S. Fish and Wildlife Service 2016); Ecological Reserves (CDFW 2013)

HELIX Environmental Planning

MSCP Designations

Figure 4

Project Site
Major Use Permit Boundary
Phase 1
Phase 2
Phase 3
Phase 4/Proccessing Plant
Easements and Rights-of-way
San Diego Gas & Electric Towers

Jamacha Way
Private Road
Seca Street
Sonett Street
Wind River Road
Brabham Street
Hilton Head Road
Via Hacienda
Jamacha Road
Via Rancho San Diego
Willow Glen Drive
Processing Plant
Sweetwater River
Bridge
Right-of-way
Proposed Permanent
Site Access Point
SDG&E
Easement
Access Road
Heatherwood Drive
Steele Canyon Road
Par Four Drive
Ivanhoe Ranch Road
Cottonwood Springs Lane
Wentworth Drive
Jamul Drive
Greystone Drive

Nearmap, SANDAG, SanGIS

0 700 Feet

N

Source: Aerial (SanGIS 2019)

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HELIX
Environmental Planning

Site Plan and Mine Phasing

Figure 5

invasive species. The existing Sweetwater River channel and the majority of native habitat that currently exists on the site would be retained.

The project would be mined in three incremental, and partially overlapping phases, with three to four sub-phases in each major phase. Reclamation would begin after the first sub-phase of mining is complete and would be conducted on a continuous basis following the completion of each mining sub-phase. Pre-mining activities proposed prior to the initiation of Phase 1 include the restriping of Willow Glen Drive from Steele Canyon Road to the northeastern property boundary to provide Class II buffered bike lanes on both sides of the roadway, improvements to the access point from Willow Glen Drive to the Phase 1 excavation area, and installation of screening landscaping and a pedestrian pathway. To facilitate the deceleration of right-turning vehicles into the project ingress driveway, a dedicated right-turn lane would be constructed, which would serve as the primary access for mining operations, material sales, employees, and vendors. Additionally, a pedestrian pathway would be provided along the northern project frontage/Willow Glen Drive east of Steele Canyon Road to provide pedestrian access within the project vicinity where there are no existing sidewalks. Phase 1 would begin with the placement of the processing plant and the conveyor line from the plant to the western portion of the property, where excavation would begin. Processing facilities would be located near the center of the project area, adjacent to Willow Glen Drive and west of the existing golf course parking lot. The plant site would consist of the aggregate processing and washing facilities, three settling ponds, a loadout area, and support structures and buildings (e.g., scale, kiosk, and office trailer). A portable conveyor line would be installed to minimize the use of on-site roads to transport excavated materials from the excavation area to the processing plant.

Mining operations would commence in the western portion of the site as part of Phase 1 and proceed east as subsequent phases are initiated: Phase 1 would be located within the area currently occupied by the closed Lakes Course to the west of Steele Canyon Road; Phase 2 would be located in the center of the site, east of Steele Canyon Road, on the currently operating Ivanhoe Course; Phase 3 would be located to the east of Phase 2. Existing vegetation and infrastructure within the golf courses would be incrementally removed as mining operations proceed, with approximately 20 to 30 acres subject to mining at any one time. Each phase would include three to four sub-phases that are less than 30 acres each and would begin reclamation as soon as possible following the completion of extraction activities. Excavation in each sub-phase would be completed before moving the conveyor and excavation equipment to the next sub-phase, and reclamation would begin in the completed sub-phase. Upon approval of the project, the Ivanhoe Course would be closed. The existing golf clubhouse would be demolished near the end of Phase 2 mining. As each phase of mining is completed, final contours would be established via grading and backfilling, all final clean-up would be conducted and equipment removed, and the mined area would be reclaimed and revegetated. Following the completion of Phase 3 mining, the processing plant would be removed as part of a final Phase 4 consisting of final clean-up and equipment removal from the project site.

Prior to initiating work in a sub-phase, existing vegetation will be cleared, and topsoil will be salvaged. The existing banks of the low-flow Sweetwater River channel will remain undisturbed up to a minimum height of 3.5 feet to accommodate existing transfer flow rates. To maintain living soil microorganisms, topsoil will be stored on-site in windrows not more than three feet tall, in an area cleared of existing vegetation. The maximum excavation depth is proposed to be 40 feet below the existing land surface, with the average depth of excavation outside the main Sweetwater River channel expected to be approximately 20 feet below the existing land surface. Excavation would not occur within the bottom of the existing low-flow river channel ~~in order~~ to retain existing hydrologic characteristics. Up to three

temporary channel crossings would be utilized to transport heavy equipment across the low-flow river channel during mining operations. Channel crossings would only be used when there is no water flow in the channel. An operating procedure would be established to maintain communication with the Sweetwater Authority prior to, and during, water transfers to ensure channel crossings during water flows are avoided. As soon as excavation within a sub-phase is completed, the conveyor and excavation equipment would be moved to the next sub-phase, and reclamation of the completed sub-phase would begin.

The project proposes to restripe Willow Glen Drive between Steele Canyon Road and the project ingress driveway to provide Class II buffered bike lanes on both sides of the roadway per the County Roadway Standards and the General Plan Mobility Element roadway classification. To facilitate the deceleration of right-turning vehicles into the Project ingress driveway, a dedicated right-turn lane would also be constructed, which would serve as the primary access for mining operations, material sales, employees, and vendors. A new egress point would be established in the approximate center of the existing parking lot. The project also proposes to construct an acceleration lane between the ingress and egress driveways, which would serve as a refuge lane for trucks to complete their outbound maneuver. A pedestrian pathway would be provided along the northern project frontage/Willow Glen Drive east of Steele Canyon Road to provide pedestrian access within the project vicinity where there are no existing sidewalks. In addition, a new access point to the property from Willow Glen Drive west of Steele Canyon Road (Phase 1 area) would be necessary as the clearance height of the bridge that crosses the Sweetwater River on Steele Canyon Road would not allow most large trucks used by service vendors to pass beneath the bridge. Additional access points are proposed to be constructed at the intersection of Willow Glen Drive and Muirfield Drive. The new driveway would be restricted to servicing the mining operations.

The site would be progressively reclaimed following the completion of extraction activities within each subphase area in accordance with the mining and reclamation plan (EnviroMINE 2021). Reclamation would include: (1) removal of all artificial structures (with the exception of permanent erosion control features); (2) grading and backfilling to achieve final landforms; (3) incorporation of accumulated wash fines, imported material, and salvaged topsoil (as applicable); and (4) revegetation and monitoring. Final grading would begin after mining and backfilling have been completed within a given area, and as extractive operations proceed to the east. Reclamation would be an ongoing process that commences where mining operations have ceased within a given sub-phase area and continues until all mining-related disturbance is reclaimed.

Post-reclamation, the final landform of the overall mining area is proposed to be a relatively flat plain that gently slopes downward from east to west, with an expanded floodplain bisecting the length of the site. The expanded floodplain is expected to range in width from approximately 400 to 700 feet~~average approximately 450 to 720 feet in width~~ and would be slightly higher in elevation than the existing low-flow river channel~~lower in elevation than the existing ground level across the site~~. The existing low-flow river channel would be retained in place with banks up to a minimum height of 3.5 feet to accommodate annual water transfers from Loveland Reservoir to Sweetwater Reservoir that are controlled by the Sweetwater Authority. The low-flow river channel banks would slope down to the expanded floodplain, which will be at a similar elevation to the existing low-flow river channel or slightly higher. In some areas, benches may be constructed at the edges of the floodplain to accommodate varying vegetation types and/or multi-use trails. Slopes bordering the expanded floodplain would slope up to the plain surface at a 3:1 ratio or shallower, with an elevation difference of up to 25 feet between the top of slope and bottom of the ~~expanded floodplain~~low-flow river channel. Reclaimed and revegetated areas would

be restored to an end-use of ~~native vegetation within a widened floodplain~~open space, ~~recreational~~ multi-use trails, and land suitable for uses allowed by the ~~Open Space~~ General Plan land use designation and existing zoning classifications. Maintenance and monitoring of the restored and revegetated native habitat areas would continue until final performance standards are met in all revegetation areas. Following revegetation completion, nearly 54~~55~~ percent of the project site (~~150.7~~149.0 acres) ~~will~~ would be preserved in a biological open space (BOS) easement, which ~~will~~ would protect these lands in perpetuity, and ~~will~~ would restrict future uses to protect their biological value.

2.3.2 Current Environmental Setting and Site Conditions

The project site is generally located within the Sweetwater River Valley ecoregion of southeast San Diego County. It occurs within the boundaries of the Rancho San Diego Specific Plan Area of the Valle de Oro Community Planning Area. Generalized climate in the region is regarded as dry, sub-humid mesothermal, with warm dry summers and cold moist winters. Mean annual precipitation is between 14 and 18 inches, and the mean annual temperature is between 60- and 62-degrees Fahrenheit. The frost-free season is 260 to 300 days.

The project site has been subjected to past human disturbances and habitat modification associated with the development of the golf course and intermittent mining. Prior to the 1940s, the site was used for commercial ranching and agriculture, most of which had ended by the 1950s. A 1953 aerial photograph of the site indicates that the floodplain of the Sweetwater River was primarily undeveloped, with the presence of a small, wooden house/structure adjacent to Willow Glen Drive to the west of Steele Canyon Road. Since the 1960s, the project site has operated as a public golf course with intermittent mining. Construction of the golf course initially began in 1962 and was completed in 1964. Mining activities within the site began in the early 1950s to the south of the Sweetwater River and continued through the 1970s, allowing for the creation of water hazards and expanded fairways associated with golf course construction and improvements. The site currently operates as a public golf course, though golf play and irrigation of landscaped turf in the western portion of the site was discontinued in 2017.

Vegetation within the project site reflects the site's disturbed and developed nature. Approximately 244.8 acres (88 percent) of the site is currently occupied by a public golf course, or is otherwise disturbed by past land uses, including 1.7 acres of non-native woodland, 2.6 acres of eucalyptus woodland, 7.5 acres of non-native vegetation, 3.0 acres of artificial pond, and 230.0 acres of disturbed habitat and developed lands containing a combination of active and inactive golf course areas, in addition to a clubhouse, parking lot, maintenance facilities and other buildings, golf cart paths, and other areas of hardscape or maintained landscaping. Undeveloped areas are concentrated along the western and eastern edges of the site and consist primarily of native upland scrub and riparian forest communities. The dominant native habitat type present on-site is southern cottonwood-willow riparian forest, which covers approximately 12.87 acres (five percent) of the site. The Sweetwater River and associated floodplain have been severely modified as a result of previous golf course development. The river has been channelized through the site and its width has been constricted to allow for the development of golf course fairways. Additionally, the hydrological regime of the Sweetwater River has been heavily altered from the creation of several artificial impoundments upstream and downstream of the project site, such as the Loveland Reservoir and Sweetwater Reservoir, which are subject to water transfers and controlled releases by the Sweetwater Authority.

The project site occurs within both the northeastern portion of the South County Segment and the southwestern portion of the Metro-Lakeside-Jamul Segment of the adopted County MSCP Subarea Plan (County 1997). Three small areas of PAMA, totaling 16.40 acres (six percent), occur along the northeastern, southeastern, and southern project boundaries (Figure 4). Additionally, approximately 37.79 acres (14 percent) of the site at the southwestern boundary represent a Minor Amendment Area.

Land uses in the surrounding area include residential and rural residential developments to the north and south, extractive operations to the east, and an adjacent golf course to the southeast. Open space is present in the hills south, east, and west of the site. The San Diego National Wildlife Refuge (SDNWR) abuts the western project boundary along the Sweetwater River.

2.3.3 Topography and Soils

Elevations on-site generally decrease from east to west across the site, with the lowest elevations (approximately 320 feet (ft) above mean sea level [AMSL]) occurring along the southwestern boundary, and the highest elevations (approximately 380 ft AMSL) along the northeastern boundary. The Sweetwater River runs through the length of the site entering at the northeastern project boundary and continuing in a mostly east-west direction to the southern boundary, where it exits the site and continues southwest towards Sweetwater Reservoir. The Sweetwater River extends from its headwaters in the Cuyamaca Mountains (east of the site) to the Pacific Ocean, approximately 15 miles downstream of the site.

Six soil series, which comprise nine soil types, have been mapped on-site (Natural Resources Conservation Service [NRCS] 2022; Figure 6, *Soils*), with the majority classified as sandy loams. Soil types covering the most area on-site include~~s~~ Riverwash and those in the Tujunga series. The soil and geologic study conducted for the project by Geocon also found that the site was predominately comprised of alluvial channel and alluvial flood plain deposits (Geocon 2020).

2.3.4 Vegetation Communities

Fifteen vegetation communities/land use types occur on the project site (Table 1, *Existing Vegetation Communities/Land Use Types*; Figure 7, *Vegetation and Sensitive Resources/Impacts*). The numeric codes in parentheses following each community/land use type name are from the Holland classification system (Holland 1986) and as added to by Oberbauer (2008) as presented in the County's Biology Guidelines (County 2010).

Table 1
EXISTING VEGETATION COMMUNITIES/LAND USE TYPES

Vegetation Community[1]	Acres[2]		
	Within MUP	Outside MUP	Total
Tier I[3]			
Disturbed Wetland (11200)	10.25	0	10.25
Freshwater Marsh (52400)	0.22	0	0.22
Southern Cottonwood-willow Riparian Forest (61330)	9.43	2.42	11.85
Southern Cottonwood-willow Riparian Forest - disturbed (61330)	0.87	0.15	1.02
Southern Willow Scrub - disturbed (63320)	4.82	0	4.82
Tamarisk Scrub (63810)	1.20	0.03	1.23

Vegetation Community[1]	Acres[2]		
	Within MUP	Outside MUP	Total
Open Water (64140)[4]	1.68	0	1.68
Arundo-dominated Riparian (65100)	0.48	0.08	0.56
Tier II			
Diegan Coastal Sage Scrub (32500)	0.8	0.5	1.3
Diegan Coastal Sage Scrub – disturbed (32500)	0.5	<0.1	0.5
Tier IIIB			
Non-native Grassland (42200)	0	0.2	0.2
Tier IV			
Non-native Woodland (79000)	1.5	0.2	1.7
Eucalyptus Woodland (79100)	2.1	0.5	2.6
Non-native Vegetation (11000)	6.6	0.9	7.5
Disturbed Habitat (11300)	79.0	12.3	93.1
N/A			
Artificial Pond (64140)[4]	3.0	0	3.0
Developed Land (12000)	122.0	14.9	136.9
TOTAL	**244.45**	**32.18**	**276.63**

[1] Vegetation categories and numerical codes are from Holland (1986) and Oberbauer (2008).
[2] Upland habitats are rounded to the nearest 0.1 acre, while wetland habitats are rounded to the nearest 0.01; thus, totals reflect rounding.
[3] County Subarea Habitats and Tiers within the MSCP.
[4] The numerical Holland/Oberbauer code refers to Fresh Water which describes year-round bodies of fresh water in the form of lakes, streams, ponds, or rivers and is the most appropriate vegetation community that represents these areas.

Sensitive vegetation communities/habitat types mapped on the project site include disturbed wetland, freshwater marsh, southern cottonwood-willow riparian forest (including disturbed), disturbed southern willow scrub, tamarisk scrub, open water, arundo-dominated riparian, DCSS (including disturbed), and non-native grassland. Non-native woodland, eucalyptus woodland, non-native vegetation, disturbed habitat, artificial pond, and developed lands do not meet the definition of sensitive habitat under the County's Biology Guidelines (County 2010).

2.3.5 Flora

A total of 190 plant species were identified within the project site, of which 80 (42 percent) are native species, and 110 (28 percent) are non-native species (HELIX 2025~~3~~b).

2.3.6 Wildlife

A total of 129 animal species were observed or otherwise detected on the project site during recent biological surveys, including 14 invertebrate, one fish, four amphibian, six reptile, 85 bird, and 19 mammal species (HELIX 2025~~3~~b).

2.3.7 Special-~~-~~Status Species

No federal- or state-listed plant species were observed within the project site during recent surveys (HELIX 2025~~3~~b); however, four species with other special status were observed: San Diego sagewort (*Artemisia palmeri*), San Diego County viguiera (*Bahiopsis laciniata*), Palmer's goldenbush (*Ericameria*

palmeri var. *palmeri*), and southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*). Additionally, although not found on-site, U.S. Fish and Wildlife Service (USFWS) critical habitat for the federally endangered San Diego ambrosia (*Ambrosia pumila*) is present in the southwestern portion of the site (Figure 8, *Critical Habitat*).

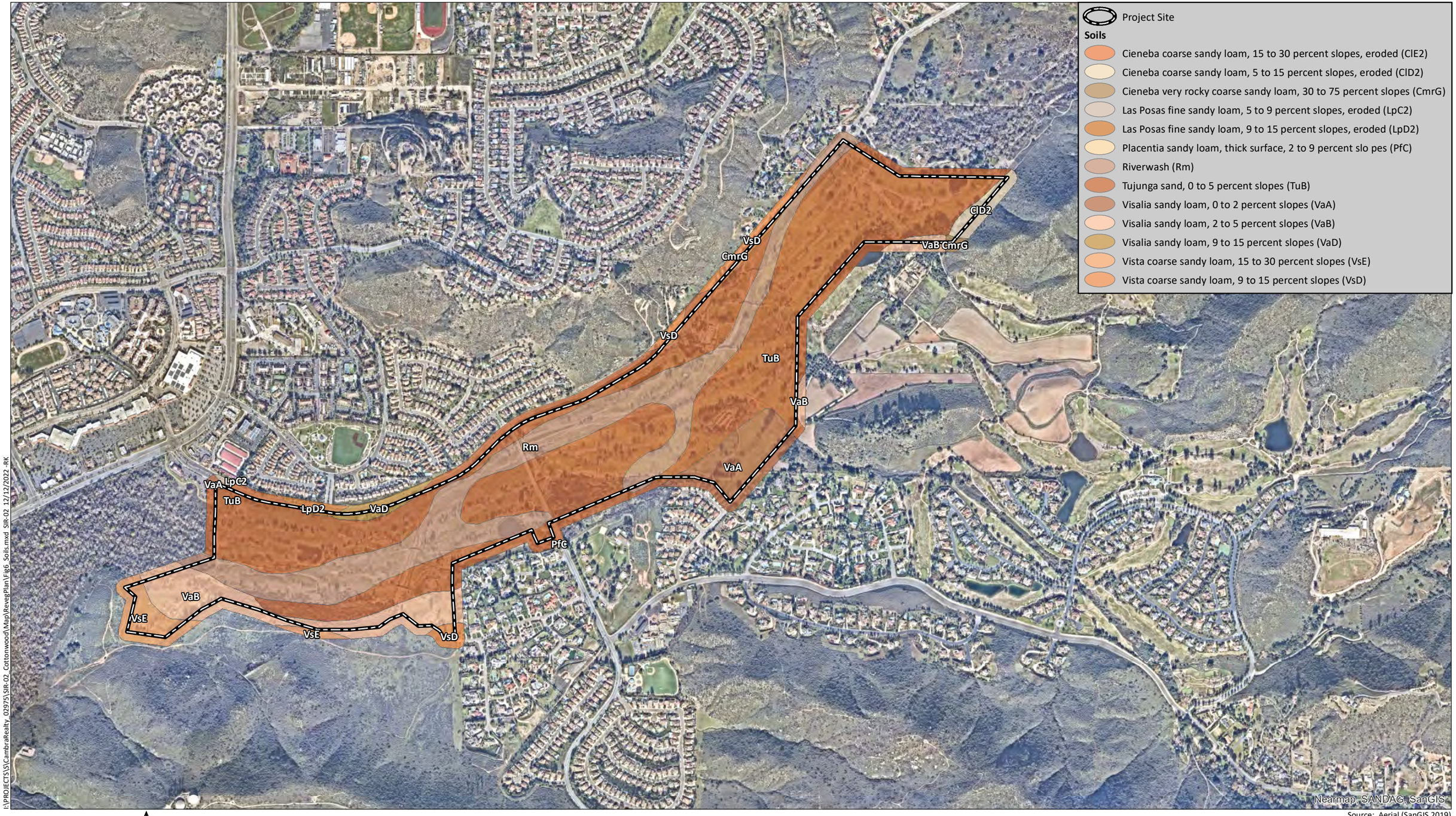
Two federal- and/or state-listed wildlife species were observed within the project site during recent surveys (HELIX 2025~~3~~b): coastal California gnatcatcher (*Polioptila californica californica*) and least Bell's vireo (*Vireo bellii pusillus*). An additional 21 other special-~~-~~status animal species were observed or detected on or directly adjacent to the project site or observed flying over the project site: barn owl (*Tyto alba*), Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), Cooper's hawk (*Accipiter cooperii*), great blue heron (*Ardea herodias*), green heron (*Butorides virescens*), Lawrence's goldfinch (*Spinus lawrencei*), Monarch butterfly (*Danaus plexippus*), oak titmouse (*Baeolophus inornatus*), peregrine falcon (*Falco peregrinus*), red-shouldered hawk (*Buteo lineatus*), small-footed myotis (*Myotis ciliolabrum*), Townsend's big-eared bat (*Corynorhinus townsendii pallescens*), turkey vulture (*Cathartes aura*), vermilion flycatcher (*Pyrocephalus rubinus*), western bluebird (*Sialia mexicana*), western mastiff bat (*Eumops perotis*), western red bat (*Lasiurus blossevillii*), white-tailed kite (*Elanus leucurus*), yellow-breasted chat (*Icteria virens*), yellow warbler (*Setophaga petechia*), and Yuma myotis (*Myotis yumanensis*). Additionally, USFWS critical habitat for the coastal California gnatcatcher and least Bell's vireo occurs in the southwestern portion of the site, and critical habitat for the southwestern willow flycatcher (*Empidonax traillii extimus*) is present immediately adjacent to the site (Figure 8).

2.3.8 Project Impacts

2.3.8.1 Sensitive Vegetation

The project would permanently impact 2.34 acres of sensitive vegetation communities, including 1.2 acres of uplands and 1.14 acres of wetlands. Impacts to 1.2 acres of sensitive upland vegetation communities consist entirely of DCSS (Table 2, *Project Impacts to Vegetation Communities/Habitat Types*; Figure 7; HELIX 2025~~3~~b). Impacts to wetlands include including 0.55 acre of disturbed wetland, 0.44 acre of southern cottonwood-willow riparian forest (including disturbed), 0.13 acre of disturbed southern willow scrub, 0.01 acre of tamarisk scrub, and 0.01 acre of arundo-dominated riparian (Table 2; Figure 7).

Cottonwood Sand Mine



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Source: Aerial (SanGIS 2019)

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Soils

Figure 6

- Project Site
- Major Use Permit Boundary
- Phase 1
- Phase 2
- Phase 3
- Phase 4/Proccessing Plant
- Impact Area
- Impact Neutral Area
- Roadway Improvement Impacts
- Trail Impacts
- Conceptual Multi-Use Trails (Post-Reclamation)
- Proposed Pathway

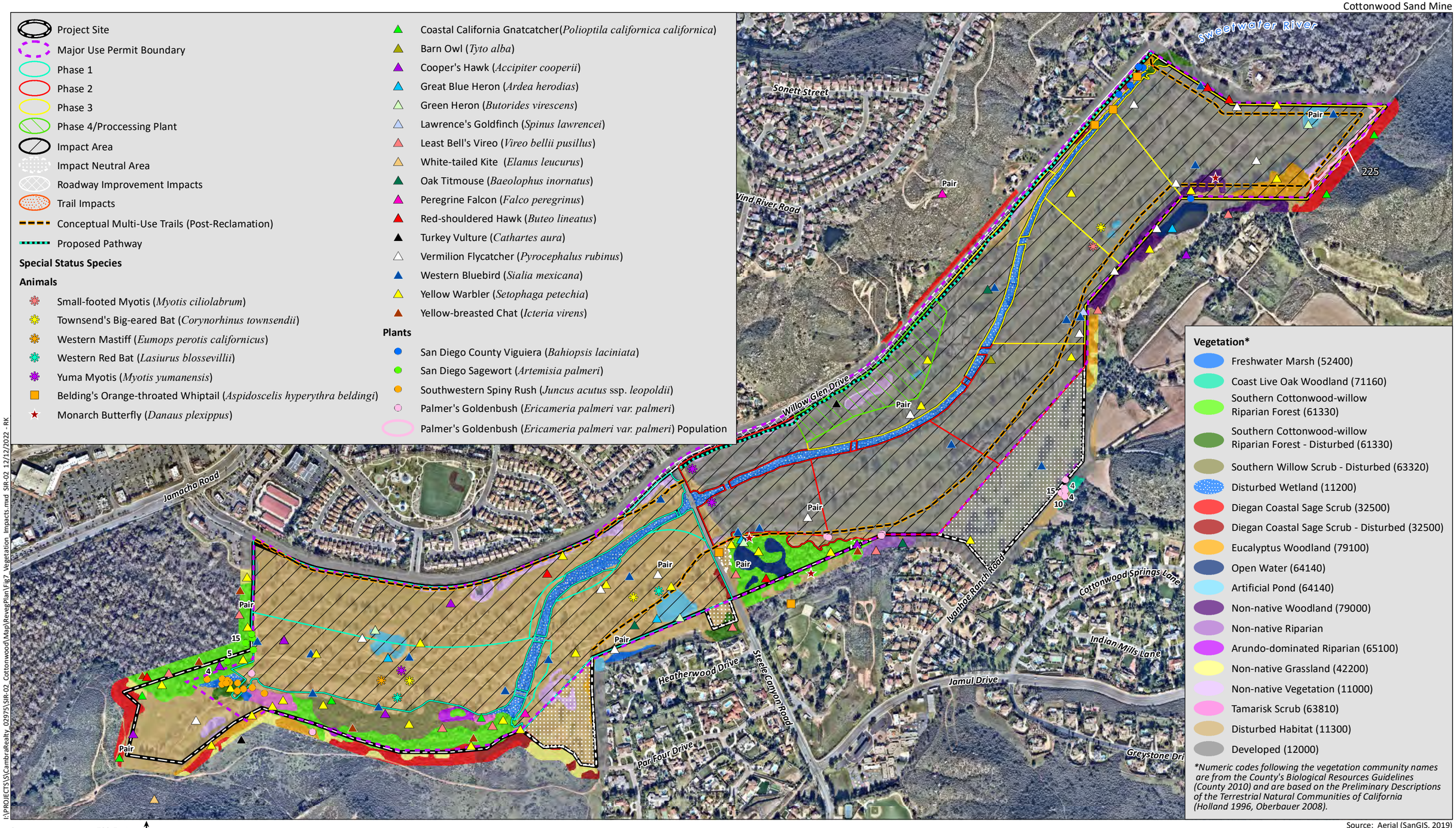
Special Status Species

Animals

- Small-footed Myotis (*Myotis ciliolabrum*)
- Townsend's Big-eared Bat (*Corynorhinus townsendii*)
- Western Mastiff (*Eumops perotis californicus*)
- Western Red Bat (*Lasiurus blossevillii*)
- Yuma Myotis (*Myotis yumanensis*)
- Belding's Orange-throated Whiptail (*Aspidoscelis hyperythra beldingi*)
- Monarch Butterfly (*Danaus plexippus*)
- Coastal California Gnatcatcher(*Polioptila californica californica*)
- Barn Owl (*Tyto alba*)
- Cooper's Hawk (*Accipiter cooperii*)
- Great Blue Heron (*Ardea herodias*)
- Green Heron (*Butorides virescens*)
- Lawrence's Goldfinch (*Spinus lawrencei*)
- Least Bell's Vireo (*Vireo bellii pusillus*)
- White-tailed Kite (*Elanus leucurus*)
- Oak Titmouse (*Baeolophus inornatus*)
- Peregrine Falcon (*Falco peregrinus*)
- Red-shouldered Hawk (*Buteo lineatus*)
- Turkey Vulture (*Cathartes aura*)
- Vermilion Flycatcher (*Pyrocephalus rubinus*)
- Western Bluebird (*Sialia mexicana*)
- Yellow Warbler (*Setophaga petechia*)
- Yellow-breasted Chat (*Icteria virens*)

Plants

- San Diego County Viguiera (*Bahiopsis laciniata*)
- San Diego Sagewort (*Artemisia palmeri*)
- Southwestern Spiny Rush (*Juncus acutus* ssp. *leopoldii*)
- Palmer's Goldenbush (*Ericameria palmeri var. palmeri*)
- Palmer's Goldenbush (*Ericameria palmeri var. palmeri*) Population



Vegetation*

- Freshwater Marsh (52400)
- Coast Live Oak Woodland (71160)
- Southern Cottonwood-willow Riparian Forest (61330)
- Southern Cottonwood-willow Riparian Forest - Disturbed (61330)
- Southern Willow Scrub - Disturbed (63320)
- Disturbed Wetland (11200)
- Diegan Coastal Sage Scrub (32500)
- Diegan Coastal Sage Scrub - Disturbed (32500)
- Eucalyptus Woodland (79100)
- Open Water (64140)
- Artificial Pond (64140)
- Non-native Woodland (79000)
- Non-native Riparian
- Arundo-dominated Riparian (65100)
- Non-native Grassland (42200)
- Non-native Vegetation (11000)
- Tamarisk Scrub (63810)
- Disturbed Habitat (11300)
- Developed (12000)

**Numeric codes following the vegetation community names are from the County's Biological Resources Guidelines (County 2010) and are based on the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1996, Oberbauer 2008).*

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Source: Aerial (SanGIS, 2019)

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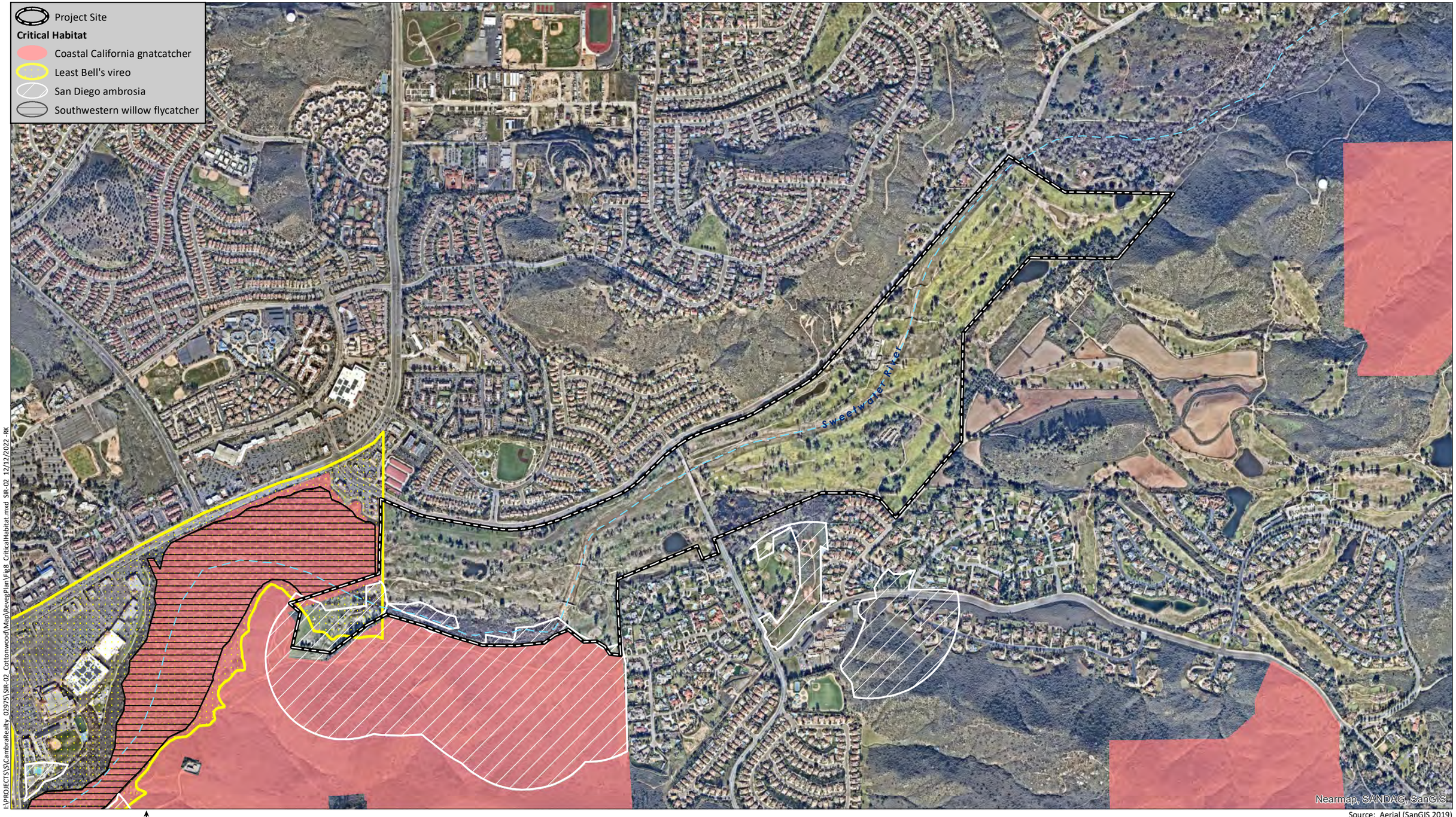
Vegetation and Sensitive Resources/Impacts

Figure 7

Cottonwood Sand Mine



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Source: Aerial (SanGIS 2019)

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Critical Habitat

Figure 8

Table 2
PROJECT IMPACTS TO VEGETATION COMMUNITIES/HABITAT TYPES

Vegetation Community	Impact Neutral Areas (Acres)[1]	Project Impacts (Acres)[1]					Road Improvement Impacts (Acres)[1]	Total Impacts (Acres)[1]		
		Phase 1	Phase 2	Phase 3	Phase 4	Total On-Site		On-Site	Off-Site	Total
Sensitive Vegetation Communities										
Tier I[2]										
Disturbed Wetland	0	0.16	0.26	0.13	0	0.55	0	0.55	0	0.55
Freshwater Marsh	0	0	0	0	0	0	0	0	0	0
Southern Cottonwood-willow Riparian Forest – including disturbed	0.30	0.27	0.12	0.05	0	0.44	0	0.44	0	0.44
Southern Willow Scrub – including disturbed	0	0.13	0	0	0	0.13	0	0.13	0	0.13
Tamarisk Scrub	0.02	0.01	0	0	0	0.01	0	0.01	0	0.01
Open Water	0	0	0	0	0	0	0	0	0	0
Arundo-dominated Riparian	0.07	0.01	0	0	0	0.01	0	0.01	0	0.01
Tier II										
Diegan Coastal Sage Scrub	0.1	0.2	0	0.9	0	1.1	0.1	1.1	0.1	1.2
Tier IIIB										
Non-native Grassland	<0.1	0	0	0	0	0	0	0	0	0
Subtotal Sensitive Communities	*0.49*	*0.63*	*0.26*	*0.49*	*0.06*	*1.43*	*0.1*	*2.24*	*0.10*	*2.34*
Non-Sensitive Vegetation Communities										
Tier IV										
Non-native Woodland	0	0	0	1.7	0	1.7	0	1.7	0	1.7
Eucalyptus Woodland	0.4	<0.1	0	2.1	0	2.1	<0.1	2.1	<0.1	2.1
Non-native Vegetation	0.4	3.2	0.6	1.5	1.2	6.5	2.0	6.5	2.0	8.5
Disturbed Habitat	5.6	71.8	1.8	2.4	0	76.0	0.1	76.0	0.1	76.1
N/A										
Artificial Pond	0	2.2	0	0.4	0.1	2.7	0	2.7	0	2.7
Developed Land	14.8	0.5	47.3	64.8	7.9	120.5	2.8	120.7	2.6	123.3
Subtotal Non-Sensitive Communities	*21.2*	*77.7*	*49.7*	*72.9*	*9.2*	*209.5*	*4.9*	*209.7*	*4.7*	*214.4*
TOTAL	**21.69**	**78.48**	**50.08**	**73.98**	**9.20**	**211.74**	**5.0**	**211.94**	**4.8**	**216.74**

[1] Upland habitats are rounded to the nearest 0.1 acre, while wetland habitats are rounded to the nearest 0.01; thus, totals reflect rounding.

[2] County Subarea Habitats and Tiers within the MSCP.

2.3.8.2 Special-Status Plants

The project would result in impacts to four special-status plant species: Palmer's goldenbush, San Diego sagewort, southwestern spiny rush, and San Diego County viguiera. Palmer's goldenbush is a CRPR 1B.1 species, County List B, MSCP covered, and MSCP narrow endemic species. Approximately 234 individuals would be impacted by the proposed project. Southwestern spiny rush is a CRPR 4.2 species and County List D species. Three individuals occurring within the southwestern portion of the project along the Sweetwater River would be impacted by the removal of an existing bridge crossing. San Diego viguiera is a CRPR 4.3 and County List D species. Five San Diego County viguiera shrubs would be impacted by the proposed project along the site's northeastern boundary, including three shrubs located within the project site and two shrubs located outside of the project site within the road widening impact area. San Diego sagewort is a CRPR 4.2 and County List D species. Two San Diego sagewort individuals observed at the western project boundary at the edge of southern riparian forest habitat would be impacted by the proposed project.

Impacts to San Diego sagewort, southwestern spiny rush, and San Diego County viguiera are considered significant and would be mitigated through on-site habitat re-establishment, rehabilitation, revegetation, and preservation. Impacts to Palmer's goldenbush are considered significant. As a County List B plant species, species-based mitigation is required at a minimum 1:1 ratio pursuant to County Requirements (2010a). Impacts to Palmer's goldenbush would be mitigated through planting and seeding of the species within on-site native revegetation area in accordance with this plan.

2.3.8.3 Special-Status Wildlife

The project would result in impacts to suitable breeding or foraging habitat for 23 special-status animal species observed or detected on or adjacent to the site, including coastal California gnatcatcher, least Bell's vireo, Cooper's hawk, oak titmouse, red-shouldered hawk, turkey vulture, peregrine falcon, white-tailed kite, yellow-breasted chat, vermilion flycatcher, Lawrence's goldfinch, monarch butterfly, Belding's orange-throated whiptail, great blue heron, green heron, yellow warbler, western bluebird, barn owl, small-footed myotis, Townsend's big-eared bat, western mastiff bat, western red bat, and Yuma myotis. The project would result in impacts to 1.2 acres of disturbed Diegan coastal sage scrub, which provides potential habitat for the coastal California gnatcatcher. Impacts to potential gnatcatcher habitat would be significant. The project site provides suitable breeding habitat for least Bell's vireo and multiple individuals were detected within, and adjacent to, the project site during protocol surveys conducted in 2019 (HELIX 2025~~3~~b). The project would impact 0.44 acre of southern cottonwood-willow riparian forest (including disturbed), 0.13 acre of disturbed southern willow scrub, and 0.01 tamarisk scrub at the edge of existing habitat located along the Sweetwater River, including areas where vireos have been detected. Impacts to suitable vireo breeding habitat would be significant.

Project impacts to potential breeding and foraging habitat for coastal California gnatcatcher, least Bell's vireo, and other special-status wildlife would be mitigated through on-site habitat re-establishment, rehabilitation, revegetation, and preservation, combined with other project-specific mitigation measures to address potential impacts, such as restrictions on clearing and grubbing during the avian breeding season. Mitigation for impacts to wetland and riparian habitats are addressed separately from this plan in the Conceptual Wetland Mitigation Plan (HELIX 2025~~3~~a).

2.3.9 Required Compensatory Mitigation

A summary of project impacts to biological resources and required mitigation is provided in the Biological Technical Report (BTR; HELIX 2025~~3~~b). The project would result in impacts to a total of 2.34 acres of riparian habitat or other sensitive natural communities (Table 2; Figure 9, *Conceptual Reclamation Revegetation and Compensatory Mitigation Areas*), including 0.55 acre of disturbed wetland, 0.44 acre of southern cottonwood-willow riparian forest (including disturbed), 0.13 acre of southern willow scrub, 0.01 acre of tamarisk scrub, 0.01 acre of arundo-dominated riparian, and 1.2 acres of Diegan coastal sage scrub (including disturbed). This plan addresses mitigation for impacts to sensitive upland vegetation communities (i.e., DCSS), special-status plant species, potential breeding and foraging habitat for special-status animal species, and revegetation of areas temporarily disturbed as part of mining activities. Mitigation for impacts to sensitive wetland and riparian habitats are addressed in the Conceptual Wetland Mitigation Plan (HELIX 2025~~3~~a). As required by the County's Report Format and Content Requirements for Revegetation Plans (County 2007), relevant sections of the BTR (i.e., mitigation requirements and habitat being impacted) will be included as an appendix to the Final Revegetation Plan.

BIO-1 Mitigation for impacts to 1.2 acres of potential foraging habitat for coastal California gnatcatcher, comprised solely of Diegan coastal sage scrub, shall occur at a 1.5:1 ratio for a total mitigation requirement of 1.8 acres. Mitigation shall occur through the on-site preservation of 0.6 acre of Diegan coastal sage scrub and on-site revegetation of 11.3 acres of Diegan coastal sage scrub for a total of 11.9 acres of Diegan coastal sage scrub to be preserved within the biological open space easement.

BIO-3 Mitigation for impacts to 0.58 acre of potential nesting and foraging habitat for least Bell's vireo (southern cottonwood-willow riparian forest, disturbed southern willow scrub, and tamarisk scrub) shall occur at a minimum 3:1 ratio with at least 1:1 creation (establishment/re-establishment) for a total mitigation requirement of 1.74 acres. Mitigation shall occur through on-site preservation of 13.85 acres of wetland and riparian habitat, on-site rehabilitation of 7.36 acres of riparian habitat, and on-site re-establishment and revegetation of 107.63 acres of riparian habitat for a total of 128.84 acres of wetland riparian habitat to be preserved within the biological open space easement.

BIO-6 Impacts to 234 individuals of Palmer's goldenbush shall be mitigated at a 1:1 ratio. Mitigation shall occur through planting and/or seeding of the species within on-site native revegetation areas in accordance with a revegetation plan to be approved by the County and Wildlife Agencies (USWFS and CDFW).

BIO-8 Upon completion of all extraction activities, reclamation and final grading to establish the final landform shall occur in accordance with the approved Reclamation Plan. Revegetation with native species will occur within the expanded Sweetwater River floodplain and constructed bordering slopes according to a revegetation plan to be approved by the County and Wildlife Agencies (USWFS and CDFW).

BIO-9 Mitigation for impacts to 0.44 acre of southern cottonwood-willow riparian forest, 0.13 acre of disturbed southern willow scrub, 0.01 acre of tamarisk scrub, 0.01 acre of arundo-dominated riparian, and 0.55 acre of disturbed wetland shall occur at a 3:1 ratio with at least 1:1 creation (establishment/re-establishment) for a total mitigation requirement of 3.42 acres. Mitigation

shall occur through on-site preservation of 13.85 acres of wetland and riparian habitat, on-site rehabilitation of 7.36 acres of riparian habitat, and on-site re-establishment and revegetation of 107.63 acres of riparian habitat for a total of 128.84 acres of wetland riparian habitat to be preserved within the biological open space easement.

BIO-10 Mitigation for 1.2 acres of impacts to Diegan coastal sage scrub shall occur at a 1.5:1 ratio with 1.8 acres of Tier II or Tier I habitat in the South County MSCP area within a biological resource core area. Mitigation shall occur through on-site preservation of 0.6 acre of Diegan coastal sage scrub and on-site revegetation of 11.3 acres of Diegan coastal sage scrub for a total of 11.9 acres of Tier II Diegan coastal sage scrub to be preserved within the biological open space easement.

Table 3, *Project Impacts to Sensitive Vegetation Communities and Required Mitigation Summary*, provides a summary of project impacts to sensitive vegetation communities and required mitigation. The applicable conditions of the Resolution of Approval will be attached to the Final Revegetation Mitigation Plan submitted after discretionary approval and prior to issuance of any permit, and prior to occupancy or use of the premises in the reliance of this permit.

Table 3
PROJECT IMPACTS TO SENSITIVE VEGETATION COMMUNITIES AND REQUIRED MITIGATION SUMMARY -(acre[s])[1]

Habitat	Impacts	Required Mitigation			
		Ratio	Establishment	Establishment, Re-establishment, Rehabilitation, and/or Enhancement	Total
Tier I					
Disturbed Wetland	0.55	3:1	0.55	1.10	**1.65**
Southern Cottonwood-willow Riparian Forest – including disturbed	0.44	3:1	0.44	0.88	**1.32**
Southern Willow Scrub	0.13	3:1	0.13	0.26	**0.39**
Tamarisk Scrub	0.01	3:1	0.01	0.02	**0.03**
Arundo-Dominated Riparian	0.01	3:1	0.01	0.02	**0.03**
Subtotal	***1.14***	**--**	***1.14***	***2.28***	***3.42***
Tier II					
Diegan Coastal Sage Scrub – including disturbed	1.2	1.5:1	--	1.80	**1.80**
Subtotal	***1.2***	**--**	**--**	***1.80***	***1.80***
TOTAL	**2.34**	**--**	**1.14**	**4.08**	**5.22**

[1] Rounded to the nearest 0.01 acre; totals reflect rounding.

Mitigation for impacts to Tier I riparian habitats and jurisdictional waters and wetlands are addressed separately in the Conceptual Wetland Mitigation Plan (HELIX 2025~~3~~a). Mitigation for impacts to Tier II upland sensitive habitats (DCSS [including disturbed]) will be met through on-site preservation of 0.6 acre of existing DCSS and the preservation of 11.3 acres of DCSS revegetated as part of site reclamation within a biological open space easement, with no restoration component. The Resolution of Approval, including applicable conditions of approval, will be attached to the Final Revegetation Plan submitted after discretionary approval and prior to grading permit issuance.

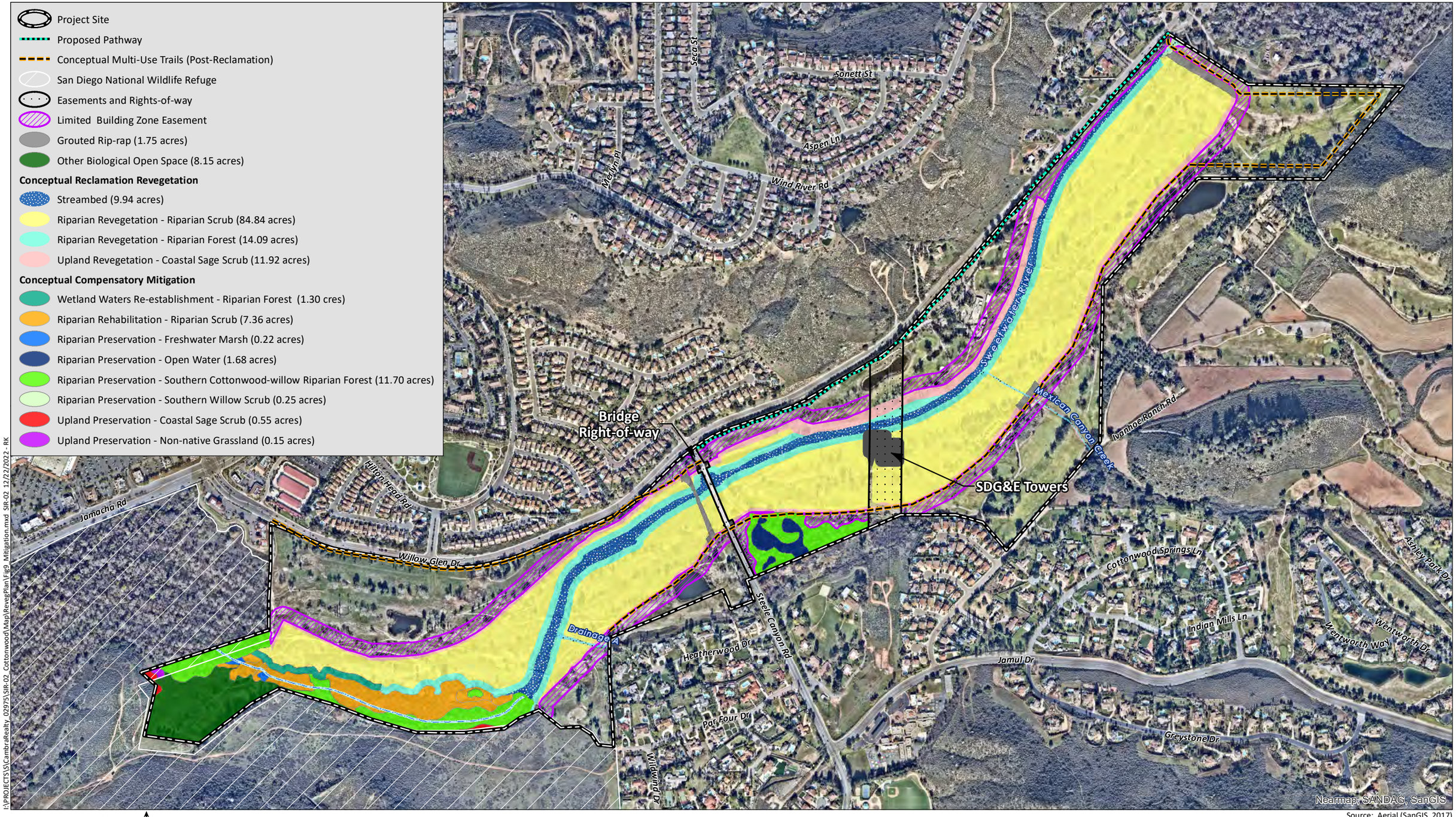
- Project Site
- Proposed Pathway
- Conceptual Multi-Use Trails (Post-Reclamation)
- San Diego National Wildlife Refuge
- Easements and Rights-of-way
- Limited Building Zone Easement
- Grouted Rip-rap (1.75 acres)
- Other Biological Open Space (8.15 acres)

Conceptual Reclamation Revegetation

- Streambed (9.94 acres)
- Riparian Revegetation - Riparian Scrub (84.84 acres)
- Riparian Revegetation - Riparian Forest (14.09 acres)
- Upland Revegetation - Coastal Sage Scrub (11.92 acres)

Conceptual Compensatory Mitigation

- Wetland Waters Re-establishment - Riparian Forest (1.30 cres)
- Riparian Rehabilitation - Riparian Scrub (7.36 acres)
- Riparian Preservation - Freshwater Marsh (0.22 acres)
- Riparian Preservation - Open Water (1.68 acres)
- Riparian Preservation - Southern Cottonwood-willow Riparian Forest (11.70 acres)
- Riparian Preservation - Southern Willow Scrub (0.25 acres)
- Upland Preservation - Coastal Sage Scrub (0.55 acres)
- Upland Preservation - Non-native Grassland (0.15 acres)



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Source: Aerial (SanGIS, 2017)

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Conceptual Reclamation Revegetation and Compensatory Mitigation Areas

Figure 9

2.3.10 Mining Reclamation

Areas temporarily disturbed by mining activities are required to be reclaimed in accordance with the Reclamation Standards as identified in the Public Resources Code, Article 9, Section 3705, and Sections 1810 and 6550-6556 of the County Zoning Ordinance. Extraction activities will temporarily impact approximately 211.94 acres which are required to be reclaimed. Reclamation includes revegetation of areas that contained vegetation prior to mining.

Additionally, Section 86.605(d) of the County RPO (County 2011) requires that the project implement the following mitigation measures as conditions of the project's Major Use Permit:

- Any wetland buffer area shall be restored to protect environmental values of adjacent wetlands;
- In a floodplain, any net gain in functional wetlands and riparian habitat shall result in or adjacent to the area of extraction;
- Native vegetation shall be used on steep slope lands to revegetate and landscape cut and fill areas ~~in order~~ to substantially restore the original habitat value, and slopes shall be graded to produce contours and soils which reflect a natural landform, which is consistent with the surrounding area; and
- Mature riparian woodland may not be destroyed or reduced in size due to sand, gravel, or mineral extraction.

Currently, wetland buffer areas within the project site consist of patches of existing riparian habitat and extensive areas of golf course development bordering the Sweetwater River. To meet the requirements of the RPO, wetland buffer areas disturbed by mining will be restored via a combination of re-establishment of wetland waters and riparian habitat addressed in the Conceptual Wetland Mitigation Plan (HELIX 2025~~1~~a) and native habitat revegetation addressed in this plan (Figures 10a through 10e, *Conceptual Reclamation Revegetation Areas*).

The proposed project would involve the widening of the Sweetwater River floodplain by lowering existing upland elevations to a final height that is similar to, or slightly above, that of the existing Sweetwater River low-flow Sweetwater River channel. The expanded floodplain will be revegetated with wetland and riparian forest and scrub habitat resulting in a net gain of functional wetlands and riparian habitat. Cut slopes constructed along the margins of the expanded floodplain will be revegetated with native upland habitat (i.e., DCSS), improving upon the current site conditions and resulting in a biologically superior condition.

Existing RPO wetlands within the project site shall be preserved in place and their existing environmental values shall be enhanced through the rehabilitation of existing riparian habitat addressed in the Conceptual Wetland Mitigation Plan (HELIX 2025~~3~~a). All riparian re-establishment and rehabilitation addressed in the mitigation plan, combined with the revegetation addressed in this plan, shall be preserved within a biological open space easement and managed in perpetuity in accordance with the Conceptual Resource Management Plan (HELIX 2025~~3~~c).

3.0 GOALS OF REVEGETATION

The goal of this revegetation plan is to provide sufficient vegetative cover to the reclaimed site such that the soil surface is stabilized, existing wetland buffer areas are restored, long-term erosion is prevented, and the post extractive land use objectives of the site are met.

3.1 RESPONSIBILITIES

3.1.1 Project Proponent

New West Investment, Inc. (or its successor in interest, in the event a sale of the property takes place) will be responsible for financing the installation, maintenance, and monitoring of the proposed on-site revegetation effort. Ultimately, the native habitat revegetation areas, together with all biological open space designated on-site, may be transferred in fee title (subject to County approval) to a public or private entity specializing in the long-term management of open space. If such a transfer were to occur prior to County sign-off of the implemented mitigation and revegetation effort, this entity would become responsible for the maintenance program described herein.

3.1.2 County of San Diego

As part of the monitoring program, annual reports prepared by the Restoration Specialist will be submitted to the County and Wildlife Agencies (USFWS and CDFW). The County will review these reports for completeness and will determine the success of the revegetation effort together with the Wildlife Agencies.

3.1.3 Revegetation Project Designer

The Final Revegetation Plans (i.e., revegetation construction drawings) will consist of construction drawings, including irrigation and planting plans, prepared by a California registered landscape architect. These plans will meet the requirements set forth in Section 2.11 of the County's Report Format and Content Requirements for Revegetation Plans (County 2007). The Landscape Architect will inspect the irrigation system prior to seeding and planting, as needed, to help ensure proper installation and complete coverage of the revegetation area while minimizing runoff into the adjacent habitat.

3.1.4 Grading Contractor

The Grading Contractor will be responsible for salvaging topsoil from each mining subphase prior to impacts, in coordination with the Restoration Specialist. Following the completion of all mining activities in each mining subphase, the Grading Contractor will establish final grades and install salvaged topsoil per the Final Mitigation and Revegetation Plans (grading plans). As part of the project, approximately 2.5 million CY of soil material will be imported to the site to backfill areas excavated as part of mining operations and complete final grades. Imported soils are anticipated to be used in construction of the upland slopes and backfilling of an excavation pit in Phases 2 and 3 (Figure 10a, *Conceptual Reclamation Revegetation Areas – Overview*). Imported soil material used in the native revegetation areas would meet specifications provided by the Restoration Specialist to ensure that the soils are appropriate for the targeted vegetation type. The contractor will have at least five years of experience in successful

- Project Site
- Phase 1
- Phase 2
- Phase 3
- Phase 4/Proccessing Plant
- Proposed Pathway
- Conceptual Multi-Use Trails (Post-Reclamation)
- San Diego National Wildlife Refuge
- Overexcavation Pits
- Easements and Rights-of-way
- Erosional Control Seed Mix (97.90 acres)
- Grouted Rip-rap (1.75 acres)

Conceptual Reclamation Revegetation

- Streambed (9.94 acres)
- Riparian Revegetation - Riparian Scrub (84.84 acres)
- Riparian Revegetation - Riparian Forest (14.09 acres)
- Upland Revegetation - Coastal Sage Scrub (11.92 acres)

Bridge Right-of-way

SDG&E Towers

Sweetwater River

Seca St
Sonett St
Greencrest Dr
Greencrest Ct
Madyn Pl
Aspen Ln
Wind River Rd
Woodpine Dr
Via Rancho San Diego
Hilton Head Rd
Jamacha Rd
Willow Glen Dr
Ivanhoe Ranch Rd
Steele Canyon Rd
Heatherwood Dr
Par Four Dr
Wildwind Dr
Cottonwood Springs Ln
Indian Mills Ln
Jamul Dr
Greystone Dr
Ashley Park Dr
Wentworth Way
Wentworth Dr

Nearmap, SANDAG, SanGIS

Source: Aerial (SanGIS, 2019)

0 700 Feet

N

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HELIX Environmental Planning

Conceptual Reclamation Revegetation Areas - Overview

Figure 10a

- Project Site
- Phase 1
- Phase 2
- Phase 3
- Phase 4/Proccessing Plant
- Proposed Pathway
- Conceptual Multi-Use Trails (Post-Reclamation)
- San Diego National Wildlife Refuge
- Overexcavation Pits
- Easements and Rights-of-way
- Erosional Control Seed Mix
- Grouted Rip-rap

Conceptual Reclamation Revegetation

- Streambed
- Riparian Revegetation - Riparian Scrub
- Riparian Revegetation - Riparian Forest
- Upland Revegetation - Coastal Sage Scrub

Bridge Right-of-way

SDG&E Towers

Sweetwater River

Greencrest Dr
Greencrest Ct
Woodpine Dr
Madlyn Pl
Seca St
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Via Rancho San Diego
Hilton Head Rd
Jamacha Rd
Willow Glen Dr
Ivanhoe Ranch Rd
Steele Canyon Rd
Heatherwood Dr
Par Four Dr
Wildwind Dr
Cottonwood Springs Ln
Indian Mills Ln
Jamul Dr
Greystone Dr
Ashley Park Dr
Wentworth Way
Wentworth Dr

Nearmap, SANDAG, SanGIS

0 700 Feet

N

Source: Aerial (SanGIS, 2019)

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HELIX Environmental Planning

Conceptual Reclamation Revegetation Areas - Phase 1

Figure 10b

- Project Site
- Phase 1
- Phase 2
- Phase 3
- Phase 4/Proccessing Plant
- Proposed Pathway
- Conceptual Multi-Use Trails (Post-Reclamation)
- San Diego National Wildlife Refuge
- Overexcavation Pits
- Easements and Rights-of-way
- Erosional Control Seed Mix
- Grouted Rip-rap

Conceptual Reclamation Revegetation

- Streambed
- Riparian Revegetation - Riparian Scrub
- Riparian Revegetation - Riparian Forest
- Upland Revegetation - Coastal Sage Scrub

Greencrest Dr
Greencrest Ct
Woodpine Dr
Madlyn Pl
Seca St
Sonett St
Aspen Ln
Wind River Rd
Sweetwater River
Bridge
Right-of-way
SDG&E Towers
Ivanhoe Ranch Rd
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Hilton Head Rd
Jamacha Rd
Willow Glen Dr
Heatherwood Dr
Par Four Dr
Wildwind Dr
Steele Canyon Rd
Jamul Dr
Greystone Dr
Indian Mills Ln
Cottonwood Springs Ln
Wentworth Way
Wentworth Dr
Ashley Park Dr

Nearmap, SANDAG, SanGIS

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0 700 Feet

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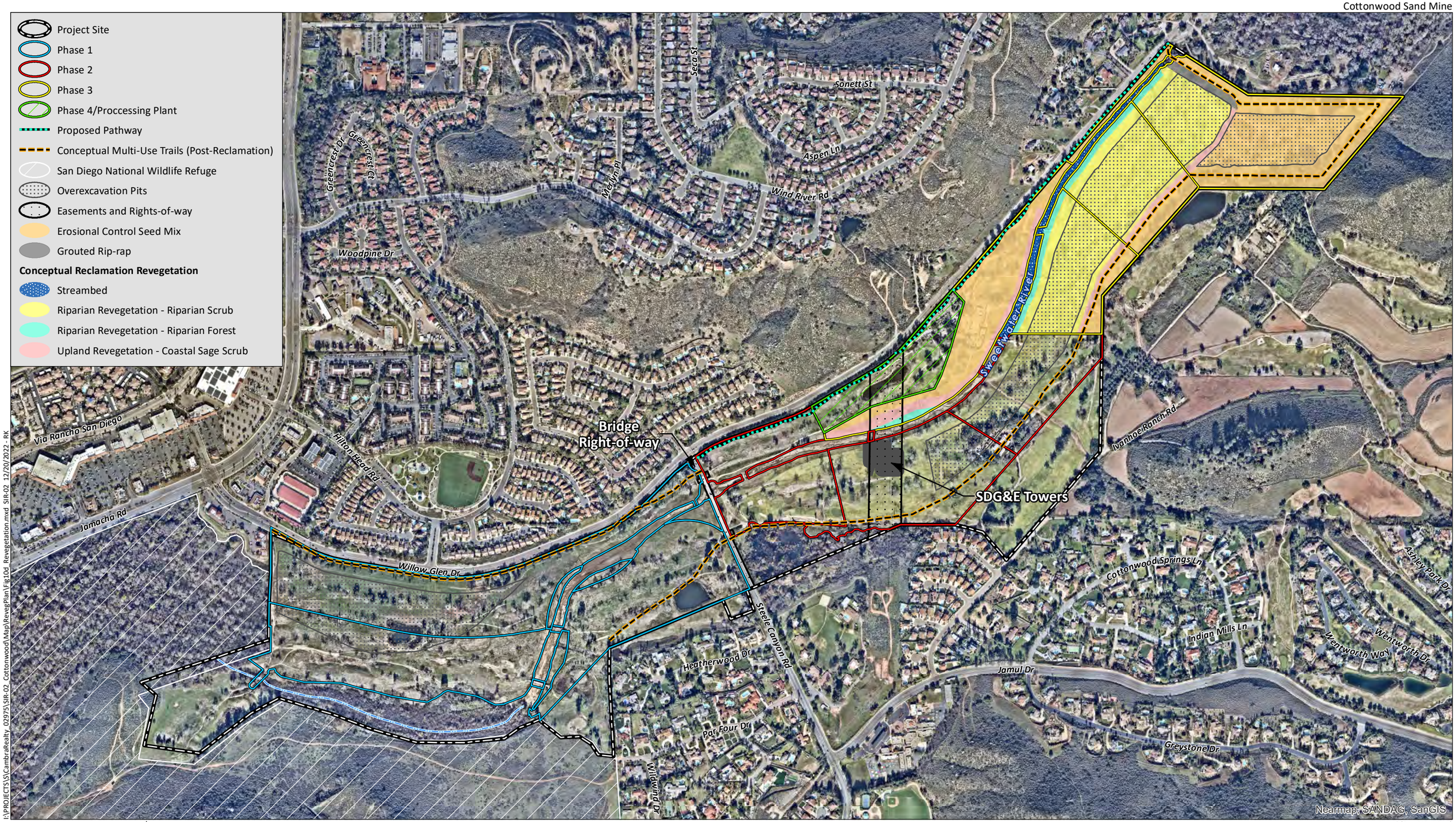
Source: Aerial (SanGIS, 2019)

HELIX Environmental Planning

Conceptual Reclamation Revegetation Areas - Phase 2

Figure 10c



0 700 Feet

Source: Aerial (SanGIS, 2019)

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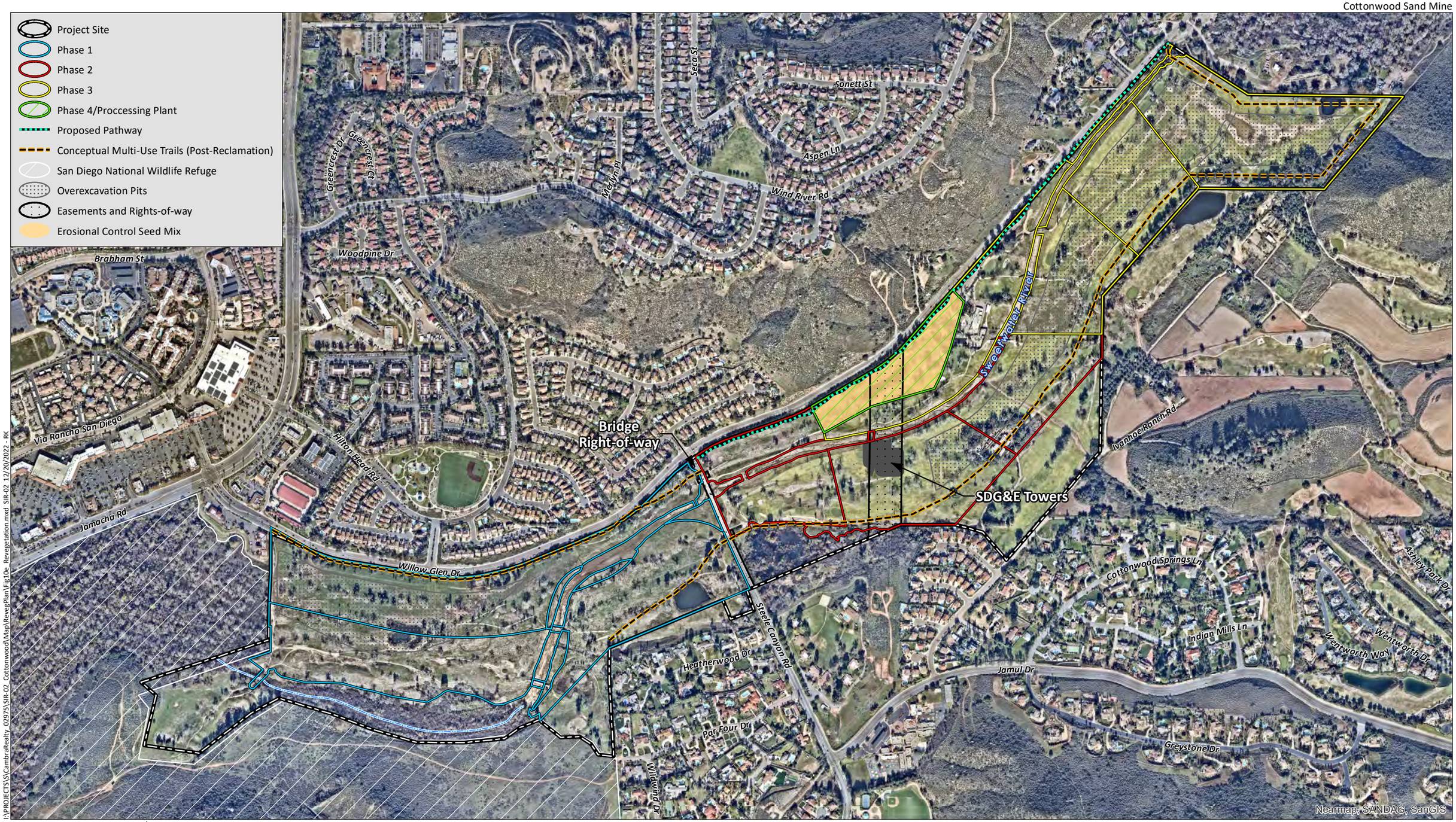
HELIX Environmental Planning

Conceptual Reclamation Revegetation Areas - Phase 3

Figure 10d



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0 700 Feet

Source: Aerial (SanGIS, 2019)

HELIX Environmental Planning

Conceptual Reclamation Revegetation Areas - Phase 4

Figure 10e

mine reclamation grading. Final grading, use of imported soil material, and topsoil application will be coordinated with the Restoration Specialist.

3.1.5 Installation Contractor

The Installation Contractor will have at least five years of experience in successful native upland and wetland habitat restoration in Southern California and be under the direction of the Restoration Specialist, who will assist the contractor with the installation of the target vegetation type. Different contractors may be used for the installation and maintenance phases of the revegetation effort, or they may be the same entity. The Project Proponent may change contractors at its discretion, as long as the contractor has the required level of experience, as stated above. Installation may include, but is not limited to, ordering plantings and seed, removing non-native plants and trash, mulching dead trees, installing irrigation lines, container plants, and seed.

3.1.6 Restoration Specialist

Overall supervision of the installation, maintenance, and monitoring of this revegetation effort will be the responsibility of a qualified Restoration Specialist with at least five years of experience with successful native upland and wetland habitat restoration in Southern California. The Restoration Specialist will oversee the efforts of the Installation and Maintenance Contractor(s) for the duration of the revegetation effort. Specific tasks of the Restoration Specialist include educating all participants with regard to revegetation goals and requirements, as well as directly overseeing final grading, topsoil application, weeding, planting, and seeding, as well as maintenance activities for the duration of the five-year maintenance period. The Restoration Specialist will explain to the contractor how to avoid impacts to existing sensitive habitat and sensitive species. When necessary to keep the revegetation effort on track to meet~~ing~~ final success criteria, the Restoration Specialist will provide the project proponent and contractor with a written monitoring memorandum, including a list of items in need of attention. The Restoration Specialist also will conduct annual assessments of the revegetation effort and prepare and submit an annual report to the County and Wildlife Agencies each year during the five-year maintenance and monitoring period.

3.1.7 Maintenance Contractor

The Maintenance Contractor will have at least five years of experience in successful native upland and wetland habitat restoration in Southern California and be under the direction of the Restoration Specialist, who will assist the contractor with the maintenance of the target vegetation type. Different contractors may be used for the installation and maintenance phases of the revegetation effort, or they may be the same entity. The Project Proponent may change contractors at its discretion, as long as the contractor has the required level of experience, as stated above. The Maintenance Contractor will service the entire revegetation area as required, meet the Restoration Specialist at the site when requested, and perform all checklist items in a timely manner as directed by the project proponent. This contractor will be knowledgeable regarding the maintenance of native habitat and the difference between native and non-native plants. Maintenance would include but not be limited to non-native plant species control, trash removal, irrigation adjustments and repairs, and potentially re-seeding and/or re-planting. All maintenance activities would be seasonally appropriate and approved by the Restoration Specialist.

3.1.8 Nursery (Seed/Plant Procurement)

Plants and seed may be purchased from a nursery or supplier specializing in native plants or contract grown. Plant and seed material should be locally propagated and collected from central San Diego County, within 25 miles of the site. Plant/seed orders should be placed by the Installation Contractor at least six months prior to installation.

3.2 TYPES AND AREAS OF HABITAT TO BE REVEGETATED

Areas temporarily disturbed by mining activities are required to be reclaimed in accordance with the Reclamation Standards as identified in the Public Resources Code, Article 9, Section 3705, and Sections 1810 and 6550-6556 of the County Zoning Ordinance. Additionally, wetland buffer areas disturbed as part of mining activities are required to be restored in accordance with Section 86.605(d) of the County RPO (County 2011). A portion of the reclaimed area, totaling 1.3 acres, will be re-established to wetland waters and riparian habitat ~~in order~~ to fulfill compensatory mitigation requirements as described in the Conceptual Wetland Mitigation Plan (HELIX 2025~~3~~a). ~~The~~ A total of 218.69 acres of remaining ~~areas to be reclaimed~~reclamation shall consist of 108.87 acres of wetland and riparian forest and riparian scrub revegetation located within the widened Sweetwater River floodplain, 11.92 acres of native upland (DCSS) revegetation on cut slopes~~, that will be revegetated with native upland vegetation (DCSS),~~ and 97.90 acres of erosion control on level pads that will ~~to~~ be seeded with an erosion control seed mix (Figure 9; Table 4, *Reclamation Revegetation by Mining Phase*).

Table 4
RECLAMATION REVEGETATION BY MINING PHASE
~~(~~acre[s])[1]

Habitat Type	Mining Phase				Total
	Phase 1	Phase 2	Phase 3	Phase 4	
Native Habitat Revegetation					
Diegan Coastal Sage Scrub	2.94	3.27	5.71	0	11.92
Upland Revegetation Subtotal	*2.94*	*3.27*	*5.71*	*0*	*11.92*
Riparian Forest	7.41	3.63	3.05	0	14.09
Riparian Scrub	28.68	28.11	28.05	0	84.84
Streambed (Emergent Wetland)	4.02	3.55	2.37	0	9.94
Wetland/Riparian Revegetation Subtotal	*40.11*	*35.29*	*33.47*	*0*	*108.87*
Native Habitat Revegetation Total	**43.05**	**38.56**	**39.18**	**0**	**120.79**
Other Reclamation					
Erosion Control Mix	39.68	12.30	36.73	9.19	97.90
TOTAL	**82.73**	**50.86**	**75.91**	**9.19**	**218.69**

[1] Areas are presented in acre(s) rounded to the nearest 0.01.

In addition to the compensatory mitigation and reclamation revegetation requirements, the project is required to provide species-specific mitigation for impacts to Palmer's goldenbush in accordance with mitigation measure BIO-6 (HELIX 2025~~3~~b). Impacts to 234 Palmer's goldenbush shall be mitigated at a 1:1 ratio through planting and/or seeding of the species within on-site native revegetation areas in accordance with this plan.

3.3 FUNCTIONS AND VALUES

Native habitat revegetation will (1) increase the value of the existing riparian corridor for native flora and fauna; (2) improve areas mapped as USFWS critical habitat for San Diego ambrosia, least Bell's vireo, and coastal California gnatcatcher; (3) provide additional cover for wildlife movement; and (4) provide foraging and nesting habitat for riparian species known from the area, many of which are sensitive, such as least Bell's vireo, yellow warbler, and yellow-breasted chat (HELIX 2025~~3~~b). The expanded floodplain and revegetated native habitat are expected to provide functions and services typical of naturally occurring intermittent stream channels, such as stream-energy dissipation, to reduce erosion and improve water quality, groundwater recharge, sediment transport, water purification, and foraging, breeding, live-in, and dispersal habitat for wildlife. At the end of five years of maintenance and monitoring, the native revegetation area is expected to provide self-sustaining native habitat (i.e., capable of self-regeneration without continued dependence on irrigation, soil amendments, or fertilizer) that continues on the trajectory toward developing functions and values of adjacent native habitat without further active management.

A total of 97.90 acres of flat or gently sloped areas outside of the riparian corridor will be hydroseeded with an erosion control mix to aid in soil stabilization and control erosion. These upland areas are not expected to support native habitat; however, native wildlife may use these areas as foraging habitat.

3.4 TIME LAPSE

Mining operations will occur in three separate phases, in addition to a fourth phase for final reclamation, site cleanup, and equipment removal. It is anticipated that all four phases of mining and final reclamation will be completed in approximately 16 years (Table 5, *Approximate Timing of Mining and Reclamation Activities*). Each of the three main mining phases will include multiple subphases, with each subphase totaling less than 30 acres per phase. Each subphase will begin with vegetation removal, followed by topsoil salvage, resource extraction, backfilling, and finally reclamation of the impacted area. While the precise location and timing of mining and reclamation subphases are subject to market demand and variations in geologic conditions encountered in the field, overall mining followed by reclamation for each subphase will progress, as shown on Figure 5. Reclamation, and subsequent revegetation, will occur within each subphase immediately following the completion of mining activities. Reclamation shall consist of backfilling of excavated areas, grading of final contours, application of salvaged topsoil, and planting of container stock and/or application of seed mix. Sign-off of the revegetation effort is expected by the end of the five-year maintenance and monitoring period for each individual subphase.

Table 5
APPROXIMATE TIMING OF MINING AND RECLAMATION ACTIVITIES

Mining Phase	Acres	Mining			Reclamation		
		Mining Duration (Years)	Mining Initiation Date (est.)	Mining Completion Date (est.)	Reclamation Completion Date (est.)	Revegetation Initiation Date (est.)	Revegetation Completion Date (est.)
Phase 1							
Subphase 1A	~~26.86~~22.20	1	2025~~3~~	2026~~4~~	2028~~25~~	~~2025~~2028	~~2030~~2033
Subphase 1B	~~23.38~~26.46	1	2026~~4~~	2027~~5~~	2029~~26~~	~~2026~~2029	~~2031~~2034
Subphase 1C	~~32.49~~30.42	1	2027~~5~~	2028~~6~~	2030~~27~~	~~2027~~2030	~~2032~~2035
Phase 1 Total	***~~82.73~~78.98***	***3***	***2025~~3~~***	***2028~~6~~***	***2030~~27~~***	***~~2025~~2028***	***~~2032~~2023***

Mining Phase	Acres	Mining			Reclamation		
		Mining Duration (Years)	Mining Initiation Date (est.)	Mining Completion Date (est.)	Reclamation Completion Date (est.)	Revegetation Initiation Date (est.)	Revegetation Completion Date (est.)
Phase 2							
Subphase 2A	~~15.15~~15.26	1	202~~8~~6	202~~9~~7	203~~1~~28	~~2028~~2031	~~2033~~2036
Subphase 2B	~~18.67~~19.08	1	202~~9~~7	203~~0~~28	203~~2~~29	~~2029~~2032	~~2034~~2037
Subphase 2C	~~17.04~~13.74	1	203~~0~~28	203~~1~~29	203~~3~~0	~~2030~~2033	~~2035~~2038
Phase 2 Total	***~~50.86~~48.18***	***3***	***202~~8~~6***	***203~~1~~29***	***203~~3~~28***	***~~2028~~2033***	***~~2033~~2038***
Phase 3							
Subphase 3A	~~29.39~~29.42	1	203~~1~~29	203~~2~~0	203~~4~~1	~~2031~~2034	~~2036~~2039
Subphase 3B	~~14.62~~16.15	1	203~~2~~0	203~~3~~1	203~~5~~2	~~2032~~2035	~~2037~~2040
Subphase 3C	~~16.30~~14.13	1	203~~3~~1	203~~4~~2	203~~6~~3	~~2033~~2036	~~2038~~2041
Subphase 3D	~~15.60~~18.87	1	203~~4~~2	203~~5~~3	203~~7~~4	~~2034~~2037	~~2039~~2042
Phase 3 Total	***~~75.91~~78.57***	***4***	***203~~1~~29***	***203~~5~~33***	***203~~7~~1***	***~~2031~~2037***	***~~2039~~2042***
Phase 4	~~9.19~~8.65	≤1	203~~5~~2	203~~5~~3	203~~7~~4	~~2034~~2037	~~2039~~2042
TOTAL	**~~218.69~~214.4**	**~~11~~10***	**~~2023~~2025**	**~~2033~~2035**	**~~2034~~2037**	**~~2034~~2037**	**~~2039~~2042**

* Reclamation activities would occur concurrently with mining operations. Phase 4 is not considered as part of the mining duration (10 years) since it involves the final work for reclamation rather than an active mining phase for the entire duration.

Compensatory mitigation for impacts to riparian habitat, other sensitive vegetation communities, and jurisdictional waters and wetlands will occur prior to or concurrent with initiation of project grading for Phase 1 (Table 6, *Compensatory Mitigation and Reclamation Revegetation Phasing*). Preservation of existing native riparian habitat and riparian habitat rehabilitation will occur prior to or concurrent with initiation of project grading for Subphase 1A. Initiation of wetland waters re-establishment would occur prior to or during the fall of the year in which project reclamation is completed, and revegetation is initiated for Subphase 1B. Sign off of the on-site wetland mitigation effort is expected by the end of the five-year maintenance and monitoring period.

Table 6
COMPENSATORY MITIGATION AND RECLAMATION PHASING
(acre[s])[1]

Habitat	Phase 1		Phase 2		Phase 3		Phase 4		Total	
	M^2	R^2	M^2	R^2	M^2	R^2	M^2	R^2	M^2	R^2
Conceptual Reclamation Revegetation										
Native Habitat Revegetation										
Riparian Forest	0	7.41	0	3.63	0	3.05	0	0	0	14.09
Riparian Scrub	0	28.68	0	28.11	0	28.05	0	0	0	84.84
Streambed (Emergent Wetland)	0	4.02	0	3.55	0	2.37	0	0	0	9.94
Coastal Sage Scrub	0	2.94	0	3.27	0	5.71	0	0	0	11.92
Subtotal	*0*	*43.05*	*0*	*38.56*	*0*	*39.18*	*0*	*0*	*0*	*120.79*
Other Reclamation										
Erosion Control ~~Mix~~Areas	0	39.68	0	12.30	0	36.73	0	9.19	0	97.90
Revegetation Total	***0***	***82.73***	***0***	***50.86***	***0***	***75.91***	***0***	***9.19***	***0***	***218.69***
Conceptual Compensatory Mitigation										
Wetland Waters Re-Establishment										
Riparian Forest	1.30	0	0	0	0	0	0	0	1.30	0
Rehabilitation										

Habitat	Phase 1		Phase 2		Phase 3		Phase 4		Total	
	M^2	R^2	M^2	R^2	M^2	R^2	M^2	R^2	M^2	R^2
Riparian Scrub	7.36	0	0	0	0	0	0	0	7.36	0
Preservation										
Open Water	1.68	0	0	0	0	0	0	0	1.68	0
Freshwater Marsh	0.22	0	0	0	0	0	0	0	0.22	0
Southern Cottonwood-Willow Riparian Forest	11.70	0	0	0	0	0	0	0	11.70	0
Southern Willow Scrub	0.25	0	0	0	0	0	0	0	0.25	0
Coastal Sage Scrub	0.55	0	0	0	0	0	0	0	0.55	0
Non-native grassland	0.15	0	0	0	0	0	0	0	0.15	0
Mitigation Total	**23.21**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15.53**	**0**
TOTAL	**23.21**	**82.73**	**0**	**50.68**	**0**	**75.91**	**0**	**9.19**	**23.21**	**218.69**

[1] Areas are presented in acre(s) rounded to the nearest 0.01.

[2] M = Compensatory Mitigation; R = Reclamation Native Habitat Revegetation.

3.5 COST

A draft cost of $450,000 for the life of the project for biological monitoring and reporting, and approximately $100,000 per acre on average for the native revegetation installation and maintenance for five years was estimated for the overall reclamation addressed in this plan (averaged for irrigated and non-irrigated areas). Due to the extended nature of this project, this cost is preliminary and does not include the cost of inflation. This cost also does not include any grading, topsoil salvage or application, maintenance during the construction period, fencing installation/repairs, or erosion control for native habitat revegetation areas.

4.0 DESCRIPTION OF THE REVEGETATION ~~SITE~~AREAS

4.1 SITE SELECTION

Target habitat types to be revegetated within the portions of the site disturbed by mining activities were selected based on proposed final landform contours, landscape position, hydrology, existing habitats, and other biological factors. Post-reclamation, the site's final landform will be a relatively flat plain that gently slopes downward from east to west, with a widened river floodplain bisecting the length of the site. The widened floodplain is expected to average approximately 450 to 720 feet in width and would be lower in elevation than the existing ground level across the site. The existing low-flow river channel would be retained in place with banks up to a minimum height of 3.5 feet to accommodate annual water transfers from Loveland Reservoir (located upstream of the site) to Sweetwater Reservoir (located downstream of the site) that are controlled by the Sweetwater Authority. The low-flow river channel banks would slope down to the expanded floodplain, which will be at a similar elevation to the existing low-flow river channel or slightly higher. In some areas, benches may be constructed at the edges of the floodplain to accommodate varying vegetation types. Slopes bordering the expanded floodplain would slope up at a 3:1 ratio or shallower, with an elevation difference of up to 25 feet between the top of slope and bottom of the expanded floodplain.

The widened river floodplain shall be vegetated with riparian forest habitat within approximately 50 feet of the existing channel, and riparian scrub habitat in the remainder of the floodplain (Figure 9). Riparian habitat occurs immediately upstream and downstream of the project site, indicating that the site contains suitable hydrology to support riparian habitat. Sweetwater River conveys intermittent flows that are artificially modified by the Sweetwater Authority, which conducts controlled releases and water transfers from Loveland Reservoir (located upstream of the site) to Sweetwater Reservoir (located downstream of the site). The existing low-flow river channel would be retained in place to convey these flows. Exotic and non-native plant species within the low-flow river channel would be removed and the streambed would be seeded with an emergent wetland seed mix. The broadened floodplain area bordering the river shall be graded to an elevation similar to or slightly higher than the low-flow river channel bottom which will allow floodwaters that breach the low-~~-~~flow channel to spread out in the adjacent floodplain area. Mapped soils within the widened river channel are primarily Riverwash and Visalia Sandy Loam (Figure 6), which are frequently found in alluvial floodplains within and near wetlands. Additionally, the soil and geologic study conducted by Geocon found alluvial channel and alluvial floodplain deposits within the expanded floodplain and riparian forest and riparian scrub revegetation areas at and below the final grade depth which is estimated to be between 320 and 355 AMSL (Geocon 2020). The expanded floodplain in Phases 1a to 1c and Phase 2a will be mined to final elevation heights and are not anticipated to require backfilling with imported material. Portions of expanded floodplain in Phases 2b and 2c and Phases 3a to 3c that overlap with an excavation pit would be excavated below the final elevation heights and backfilled with wash fines and imported material that would consist of inert debris (Figure 10a). Imported soils within the expanded floodplain would be required to meet specifications provided by the Restoration Specialist to ensure that the soils are appropriate for the targeted vegetation type.

The slopes bordering the widened river channel shall be vegetated with DCSS (Figure 10a), which occurs within the project site and surrounding area (Figure 7). The flat graded pads outside of the widened river floodplain shall be seeded with an erosion control seed mix in an effort to stabilize soils and prevent erosion.

4.2 LOCATION AND SIZE OF REVEGETATION ~~SITE~~AREAS

The revegetation area is located on-site, between approximately 32.753919 and 32.740810 north latitude, and between -116.905365 and -116.928629 west longitude. A total of 218.69 acres of disturbed areas would be reclaimed and revegetated; 108.87 acres of wetland and riparian forest and riparian scrub revegetation located within the widened Sweetwater River floodplain, 11.92 acres of cut slopes that would be revegetated with native upland vegetation (DCSS), and 97.90 acres of level pads to be seeded with an erosion control seed mix (Figure 11, *Conceptual Biological Open Space*). Additionally, 1.30 acres of wetland waters re-establishment would be completed as detailed within the Conceptual Wetland Mitigation (HELIX 2025~~3~~a).

In addition to the revegetation areas, wetland restoration to fulfill the project's compensatory mitigation requirements will occur contiguously with the proposed revegetation, at the downstream portion of the Sweetwater River, in the southwestern portion of the site (Figure 9). The wetland mitigation effort, which includes a total of 22.51 acres of wetland waters re-establishment, rehabilitation, and preservation of wetland and riparian habitat on-site, is detailed in the Conceptual Wetland Mitigation Plan (HELIX 2025~~3~~a).

- Project Site
- Proposed Pathway
- Conceptual Multi-Use Trails (Post-Reclamation)
- Open Space Conceptual Signage Location
- Existing Fencing
- Proposed Fencing
- Easements and Rights-of-way
- Limited Building Zone Easement
- Biological Open Space
- Non-Biological Open Space
- Additional Reclaimed Areas*
- Retained in Existing Condition

**Additional reclaimed areas are composed of graded upland pads located outside of the expanded Sweetwater River floodplain that will be seeded with an erosion control seed mix.*

Jamacha Way
Sonett St
Aspen Ln
Wind River Rd
Sweetwater River
Sea Pines Rd
Via Rancho San Diego
Bridge Right-of-way
SDG&E Towers
Ivanhoe Ranch Rd
Augusta Ct
Jamacha Rd
Hilton Head Rd
Access Road
Willow Glen Dr
SDG&E Easement
Steele Canyon Rd
Cottonwood Springs Ln
Ashley Park Dr
Indian Mills Ln
Heatherwood Dr
Wentworth Way
Jamul Dr
Par Four Dr
Greystone Dr

Nearmap, SANDAG, SanGIS

I:\PROJECTS\SCambraRealty_02975\SIR-02_Cottonwood\Map\Revised\Plan\Fig11_OpenSpace.mxd SIR-02 3/10/2025 - RK

0 700 Feet

Source: Aerial (SanGIS, 2019)

HELIX Environmental Planning

Proposed Biological Open Space

Figure 11

4.3 FUNCTIONS AND VALUES

The areas proposed for revegetation are currently characterized by golf course fairways and associated infrastructure (i.e., cart paths, artificial ponds, clubhouse, etc.), ruderal vegetation and disturbed habitat associated with previous golf course development and operation, and a mixture of native and non-native planted landscaped trees. The existing functions and values of these areas are limited as a result of previous development into a golf course; the area is currently dominated by Bermuda grass (*Cynodon dactylon*) or bare ground. Planted trees within the golf course currently provide potential breeding habitat for bird species such as the sensitive western bluebird, which was observed throughout the project site (HELIX 2025~~3~~b). Patches of existing riparian habitat located east of Steele Canyon Road and in the downstream portion of the Sweetwater River provide habitat for birds, small rodents and mammals, and lizards and amphibians for both foraging, breeding, and live-in habitat. The least Bell's vireo was detected within this area during biological surveys conducted in 2019 and 2022 and confirmed to be breeding within existing riparian habitat located to the east of Steele Canyon Road (HELIX 2025~~3~~b).

4.4 PRESENT AND PROPOSED USES

The current general land uses on the project site include a public golf course in addition to expanded fairways associated with golf course improvements. Construction of the golf course began in the 1960s and continued into the 1970s as the golf course expanded and improved. The site currently contains one operational and one abandoned public golf course (golf play and maintenance of landscaped turf in the western portion of the site was discontinued in 2017). The proposed project would convert the two golf courses into a sand mining operation that would be conducted in three phases over 10 years, with a final fourth phase for cleanup, equipment removal, and final reclamation.

Following mining and reclamation activities, the project site would be characterized by an expanded Sweetwater River floodplain and associated riparian corridor that would be preserved within the project's biological open space (Figure 11). The biological open space would be managed over the long term by a habitat manager according to a Resource Management Plan (HELIX 2025~~3~~c). Hiking trails are proposed to be established around the perimeter of the biological open space area following site reclamation; no hiking trails are proposed within the expanded Sweetwater River floodplain or associated DCSS slopes.

There are two easements that bisect the biological open space that would remain following mining activities and site reclamation. One of the easements consists of the Steele Canyon Road bridge right-of-way (ROW) that occurs within the central portion of the site (Figure 7). The Steele Canyon Road bridge ROW comprises the Steele Canyon Road bridge and associated footings that bisect the project's biological open space in a generally north-to-south direction across the Sweetwater River. The Steele Canyon Road bridge ROW has been excluded from the biological open space; therefore, the presence of the bridge ROW is not expected to affect the long-term viability and management of the biological open space. The second easement consists of a San Diego Gas & Electric (SDG&E) easement, which occurs within the central portion of the site, east of Steele Canyon Road, and crosses over the northeastern portion of the project site, where reclamation and revegetation activities are proposed to occur (Figure 9). The SDG&E easement bisects the project's biological open space area. The easement consists of overhead utility lines that run in a north/south direction across the Sweetwater River. Three transmission tower~~s~~ poles and other associated infrastructure have been excluded from the biological open space; therefore, the presence of the SDG&E easement is not expected to affect the long-term viability and management of the biological open space.

A small portion of the area to be revegetated with native habitat following mining activities, approximately 3.16 acres, would occur within the SDG&E and would be excluded from the biological open space area. The easement will be revegetated with the same plant palette as the rest of the revegetation area. Existing elevations would be lowered by 15 to 20 feet, but the three transmission towers would remain at their current elevation, leaving a raised "island" within the expanded Sweetwater River floodplain. An access ramp would be constructed on the western side of the island to connect to a 28-foot-wide access road within the existing SDG&E right-of-way easement that runs from the towers to the top of the constructed southern slope at the southern boundary of the expanded floodplain. The ramp, access road, and slopes surrounding the towers would be compacted and lined, as needed, for access and to prevent erosion. It is expected that periodic trimming of vegetation to facilitate vehicle access by SDG&E maintenance crews would need to be conducted within the access road. This work would be conducted as needed by SDG&E. Fencing and signage would be installed along the ramp and access road to prevent unauthorized access and impacts to the native habitat revegetation area and biological open space located adjacent to the access road.

4.5 REVEGETATION REFERENCE SITE

Native habitat within the southwestern portion of the site was used as a reference site for the riparian forest and scrub habitats and DCSS habitat. Revegetation goals and success criteria presented in this plan have been based on visual estimates of native cover noted in the reference site during biological surveys conducted for the biological technical report (HELIX 2025~~3~~b). No reference site was established for erosion control areas.

5.0 IMPLEMENTATION PLAN

This section provides the details for the execution of the proposed revegetation.

5.1 RATIONALE FOR EXPECTING IMPLEMENTATION SUCCESS

The proposed revegetation effort is anticipated to be successful based on the following: (1) occurrence of healthy native upland and wetland vegetation within the project site; (2) the presence of appropriate soils within the riparian forest and riparian scrub revegetation areas following completion of mining activities based on the project's geologic study (Geocon 2020), proposed post-reclamation final landforms and elevations, and requirements for use of imported soils within the expanded floodplain based on the specifications provided by, and approval of, the Restoration Specialist; (3) flows through the nearby existing Sweetwater River channel, and associated groundwater levels, combined with natural rainfall and periodic surface flooding following major rain events, are expected to provide sufficient hydrology to support riparian vegetation within the riparian forest and riparian scrub revegetation areas; (4) the use of plantings and seed of native species known to occur on-site; (5) the use of temporary irrigation to aid plant establishment; and (6) a financial commitment to ensure the long-term management of the revegetated areas.

The proposed erosion control is anticipated to be successful because the areas proposed for temporary reclamation will be relatively flat, thereby retaining seed and providing a suitable growth medium for seed establishment. A combination of native species in the applied seed mix, as well as non-native annual grasses, will be acceptable cover in the erosion control areas.

5.2 FINANCIAL ASSURANCES

A revegetation agreement shall be signed and notarized by the property owner following the approval of this Revegetation Plan and be accompanied by the required security as agreed upon by the County.

5.3 SCHEDULE

Plant and seed orders should be placed at least six months prior to targeted installation because some species may need to be specially collected and/or grown for the project. Topsoil salvage should occur prior to extraction activities within each mining subphase area. Revegetation activities will be initiated for each subphase immediately following the completion of mining activities in that area, as detailed above in Tables 5 and 6. Reclamation grading of the revegetation area and topsoil application using heavy equipment will follow the bird breeding season timing restrictions outlined in more detail further below. Irrigation (as applicable), plantings, and seed will be installed after final grades have been established.

~~-~~Maintenance of the revegetation area will begin following the completion of installation and ~~will~~ continue for five years within each individual subphase, or until final performance standards have been met for the respective subphase. Monitoring and coordination will begin during topsoil salvage, ~~and will~~and continue during site preparation, revegetation installation, and through the five years after revegetation has been installed, or until final performance standards have been met. Maintenance and monitoring of the erosion control areas shall begin following hydroseed application, and continue for two years, or until performance standards established for these areas have been met.

5.4 REVEGETATION AREA ~~SITE~~ PREPARATION

5.4.1 Protective Fencing

As part of the project design, temporary fencing will be installed around the perimeter of the project site where fencing is currently not present or in need of repair. In addition, during mining, temporary environmental fencing shall be installed around active work areas to protect sensitive biological resources, such as the Sweetwater River and native vegetation communities. All construction-related fencing would be removed within an area that is being actively revegetated. No temporary fencing is proposed to be installed along the boundaries of the wetland and riparian forest and riparian scrub revegetation areas since it would be located within the expanded Sweetwater River floodplain and is expected to periodically flood.

5.4.2 Topsoil Salvage

Prior to mining a subphase, the top two inches of soil will be scraped off and removed from the site to reduce the existing weed seed bank. The next 6 to 12 inches of soil, as determined by the Restoration Specialist during salvage operations, would then be collected and stored on-site in windrows that are no more than three feet in height in an area that had been prepared for topsoil storage by clearing all vegetation and scraping away the top two inches. Stored topsoil should not be disturbed until it is installed in the revegetation area. Salvaged topsoil will be applied to the native revegetation as directed by the Restoration Specialist.

5.4.3 Weed Control

Weed control shall be implemented during mining operations as directed in the project's Reclamation Plan (EnviroMINE 2025~~2~~). Periodic monitoring through visual observations shall be conducted to identify and monitor non-native and invasive plant species populations within the project site. Weed control shall be implemented, if determined to be necessary, to control invasive weed species within the site. Non-native vegetation will be removed by hand or through the use of the wetland-approved herbicide.

5.4.4 Reclamation Grading and Salvaged Topsoil Application

Grading the revegetation area shall be completed as part of site reclamation immediately following the completion of mining operations within each subphase. Grading would include the establishment of all final slopes and topographic features and incorporation of accumulated wash fines, fill soils where necessary, and salvaged topsoil. Material that has been imported to fill the excavation areas in Phases 2b and 2c and Phases 3a to 3c will meet the specifications provided by the Restoration Specialist to ensure that appropriate soils and texture are used for the target vegetation types. The existing ~~Sweetwater River~~ low-flow Sweetwater River channel would be retained in place to convey controlled releases and water transfers from Loveland Reservoir (located upstream of the site) to Sweetwater Reservoir (located downstream of the site), as operated by the Sweetwater Authority. The riparian forest and riparian scrub revegetation areas will be graded in accordance with the grading sheets of the Final Revegetation Plans. The banks of the low-flow river channel would be a minimum of 3.5 feet in height and will slope down the expanded floodplain. The elevations of the expanded floodplain would be similar to or slightly higher than the bottom of the low-flow river channel. Graded areas within the expanded Sweetwater River floodplain would be left in a rough grade state with micro topographic relief that mimics natural topography. Salvaged topsoil will be applied to all revegetation areas, including upland slopes, under the direction of the Restoration Specialist. Planting and irrigation should not be installed until the Restoration Specialist has approved the grading.

Rip rap energy dissipation structures are proposed as part of the reclamation (Figures 9 and 10a through 10e). The purpose of the rip rap energy dissipation structures would be to dissipate stream flow energy, protect downstream areas from erosion, and protect existing infrastructure (i.e., Steele Canyon Road bridge and SDG&E transmission towers and powerlines). A rock drop structure is proposed to be installed downstream (west) of the Steele Canyon Road bridge within the widened Sweetwater River channel perpendicular to stream flows. Rock rip rap would be installed in two areas along the cut fill slopes: along the eastern slope of the widened channel where the Sweetwater River enters the project site, and along the southern slope to the east of Steele Canyon Road at the confluence of Mexican Canyon Creek and Sweetwater River.

Reclamation grading and installation of salvaged topsoil will occur outside of the general bird nesting season (February 15 to August 31), coastal California gnatcatcher nesting season (March 1 to August 15), and least Bell's vireo nesting season (March 15 to September 15) to avoid impacts to nesting birds. If grading and reclamation activities must occur during one of these bird breeding seasons, the relevant mitigation measures contained in the project's BTR (HELIX 2025~~3~~b), such as pre-construction surveys, shall be implemented.

5.4.5 Initial Weed Control

The native habitat revegetation areas and erosion control areas will have been recently graded following mining and reclamation activities and are not expected to require any initial weed control.

5.4.6 Soil Amendments

No soil amendments are recommended for the native riparian habitat revegetation areas due to the proximity of healthy native riparian habitat and soils mapping, indicating that soils in this area consist of Riverwash and Tujunga sand (Figure 6; NRCS 2022), both appropriate for riparian forest and riparian scrub habitat. Soil amendments are likewise not expected for the DCSS habitat area due to the use of salvaged topsoil. Lastly, soil amendments will not be used in erosion control areas since they are not needed to fulfill the primary purpose of stabilization of disturbed areas.

5.4.7 Erosion Control

Erosion control BMP measures will be installed upstream of active revegetation areas wherever deemed necessary to prevent sediment movement ~~to prevent sediment movement into the areas~~ from nearby mining. Potential erosion control measures may include, but are not limited to, windrows of cut vegetation, organic matting, fiber rolls (straw wattles), and silt fencing. Any installed erosion control materials will be removed from the ~~site~~ revegetation areas once sufficient native plant cover is established. In addition, both in the DCSS revegetation areas, as well as in the erosion control areas located on the graded pads outside of the widened floodplain, a hydro-slurry containing tackifier and wood fiber/mulch will be applied with the seed mixture to help provide erosion control ~~across the site~~.

5.5 PLANTING PLAN

5.5.1 Native Habitat Revegetation

Planting Palettes/Seed Mixes

After site preparation and irrigation installation have been completed within each reclaimed subphase, native plantings and/or seed will be installed within the riparian forest (Table 7, *Riparian Forest Plant Palette*), riparian scrub (Table 8, *Riparian Scrub Plant Palette*), emergent wetland (Table 9, *Streambed (Emergent Wetland) Plant Palette*), and upland (Table 10, *Diego Coastal Sage Scrub Plant Palette*) revegetation areas~~, and an erosion control seed mix (Table 11, *Erosion Control Seed Mix*) will be applied to the graded pads located outside of the widened Sweetwater River floodplain (Figures 10a through 10e)~~. Plantings will be irrigated with well water. The existing low-flow river channel will be seeded with low-growing herbaceous wetland vegetation to facilitate channel stability while not impeding potential channel maintenance activities.

The species selected for planting and seeding within native revegetation areas have been observed within the on-site habitat or are known to occur within the surrounding area. These species grow in a variety of moisture regimes, and the plant palettes are intended to provide the flexibility for vegetation to establish based on microenvironmental variations in moisture within the riparian forest and scrub areas within the expanded floodplain. Fast-growing annual species that are quick to germinate will be included in the seed mix to provide initial cover and help protect against soil erosion. Slower-growing perennials will provide long-term cover and further protection against erosion.

All plants and seed should be obtained from southern San Diego County, whenever possible. Container stock orders or production from seed may be needed up to 12 months prior to the anticipated installation date. Species substitutions, quantity changes, or use of ~~commercial seed~~bulk-grown native seed may be allowed, if necessary, at the discretion of the Restoration Specialist. The Restoration Specialist must approve all seed and container stock orders, including source locations, prior to ordering.

Whenever possible, plant and seed installation shall be conducted during the wet season, between November 1 and February 15, although irrigation may extend these dates. All efforts will be made to plant and seed during this timeframe since beneficial temperatures and rainfall will aid in germination, establishment, and growth of target species. Hydroseeding should be conducted early in the day, when winds are relatively calm. ~~The Restoration Specialist must inspect all plant material prior to installation; root bound material, any material with Argentine ants or other pests, and any other plants deemed damaged will not be accepted. Fast-growing annual species that are quick to germinate will be included in the seed mix to provide initial cover and help protect against soil erosion. Slower-growing perennials will provide long-term cover and further protection against erosion.~~

Table 7
RIPARIAN FOREST PLANT PALETTE[1] (14.09 acres)

CONTAINER STOCK[2]				
Scientific Name	**Common Name**	**Spacing on Center (ft.)**	**Grouping Size**	**Number Per Acre**
Artemisia dracunculus	tarragon	5	5	100
Baccharis salicifolia	mule fat	6	10	200
Distichlis spicata	saltgrass	10	3	150
Iva hayesiana	San Diego marsh elder	5	5	120
Platanus racemosa	western sycamore	15	3	50
Populus fremontii ssp. *fremontii*	western cottonwood	15	3	50
Quercus agrifolia	California live oak	15	3	50
Rosa californica	California wild rose	5	3	100
Salix exigua	sand bar willow	8	5	120
Salix gooddingii	black willow	12	5	150
Salix laevigata	red willow	12	5	180
Salix lasiolepis	arroyo willow	12	5	180
Sambucus nigra	blue elderberry	10	3	50
			Total	**1,500**

SEED MIXTURE[2]			
Scientific Name	**Common Name**	**%Purity/ Germination**	**Pounds per Acre**
Ambrosia psilostachya	western ragweed	45/45	4
Anemopsis californica	yerba mansa	55/80	1
Artemisia douglasiana	Douglas' sagewort	15/40	3
Artemisia palmeri	Palmer's sagebrush	20/50	2
Baccharis salicifolia	mule fat	10/20	3
Baccharis sarothroides	broom baccharis	7/42	1
Bolboschoenus maritimus	alkali bulrush	90/60	1
Eleocharis macrostachys	pale spike-rush	95/60	1
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	95/80	1
Juncus effusus var. *pacificus*	Pacific rush	95/60	0.5

Oenothera elata ssp. *hookeri*	evening primrose	98/84	0.5
Pluchea odorata	salt marsh fleabane	30/40	2
		Total	**20.0***

[1] The quantity of seed ordered for each phase/subphase will be determined based on the exact size of the area disturbed as part of mining activities.

[2] Substitutions require approval of the Restoration Specialist.

* No less than 20 lbs. per acre of seed shall be installed.

Table 8
RIPARIAN SCRUB PLANT PALETTE[1] (84.84 acres)

	CONTAINER STOCK[2]			
Scientific Name	**Common Name**	**Spacing on Center (ft.)**	**Grouping Size**	**Number Per Acre**
Ambrosia pumila [3,4]	San Diego ambrosia	5	5	25
Artemisia dracunculus	tarragon	5	5	200
Asclepias fascicularis	narrow leaf milkweed	5	3	50
Baccharis salicifolia	mule fat	6	10	220
Croton californicus	California croton	5	5	200
Distichlis spicata	saltgrass	10	3	200
Ericameria palmeri var. *palmeri* [4]	Palmer's goldenbush	5	5	50
Iva hayesiana	San Diego marsh elder	5	5	200
Platanus racemosa	western sycamore	15	3	30
Populus fremontii ssp. *fremontii*	western cottonwood	15	3	30
Rosa californica	California wild rose	5	3	50
Salix exigua	sand bar willow	8	5	180
Salix gooddingii	black willow	12	5	100
Salix laevigata	red willow	12	5	30
Salix lasiolepis	arroyo willow	12	5	30
Sambucus nigra	blue elderberry	10	3	100
			Total	**1,695**

SEED MIXTURE[2]			
Scientific Name	**Common Name**	**%Purity/ Germination**	**Pounds per Acre**
Ambrosia psilostachya	western ragweed	45/45	4
Artemisia douglasiana	Douglas' sagewort	15/40	3
Artemisia palmeri	Palmer's sagebrush	20/50	2
Baccharis salicifolia	mule fat	10/20	3
Baccharis sarothroides	broom baccharis	7/42	1
Bolboschoenus maritimus	alkali bulrush	90/60	1
Croton californicus	California croton	90/40	1
Eleocharis macrostachys	pale spike-rush	95/60	1
Isocoma menziesii	goldenbush	18/40	1
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	95/80	1
Juncus effusus var. *pacificus*	Pacific rush	95/60	0.5
Oenothera elata ssp. *hookeri*	evening primrose	98/84	0.5
Pluchea odorata	salt marsh fleabane	30/40	2
		Total	**21.0***

1 The quantity of seed ordered for each phase/subphase will be determined based on the exact size of the area disturbed as part of mining activities.
2 Substitutions require approval by the Restoration Specialist.
3 If available at a nursery; should be installed in the higher elevation portions of this habitat (i.e., closer to the upland slopes).
4 Special status species.
* No less than 20 lbs. per acre of seed shall be installed.

Table 9
STREAMBED (EMERGENT WETLAND) SEED MIX[1] (9.94 acres)

SEED MIXTURE[2]			
Scientific Name	**Common Name**	**%Purity/ Germination**	**Pounds per Acre**
Anemopsis californica	yerba mansa	55/80	1
Artemisia douglasiana	Douglas' sagewort	15/40	3
Bolboschoenus maritimus	alkali bulrush	90/60	1
Cyperus eragrostis	tall flatsedge	80/75	1
Eleocharis macrostachys	pale spike-rush	95/60	1
Erythranthe cardinalis (*Mimulus cardinalis*)	Cardinal monkey flower	5/64	0.5
Erythranthe guttata (*Mimulus guttatus*)	seep monkey flower	10/69	0.5
Euthamia occidentalis	western goldenrod	24/45	1
Juncus effusus var. *pacificus*	Pacific rush	95/60	0.5
Pluchea odorata	salt marsh fleabane	30/40	2
		Total	**11.5***

1 The quantity of seed ordered for each phase/subphase will be determined based on the exact size of the area disturbed as part of mining activities.

2 Substitutions require approval of the Restoration Specialist.

***** No less than 10 lbs. per acre of seed shall be installed.

Table 10
DIEGAN COASTAL SAGE SCRUB PLANT PALETTE[1] (11.92 acres)

CONTAINER STOCK[2]				
Scientific Name	**Common Name**	**Spacing on Center**	**Grouping Size**	**Number per Acre**
Artemisia californica	California sagebrush	5	25	250
Asclepias fascicularis	narrow leaf milkweed	5	3	50
Bebbia juncea	rough sweetbush	10	3	50
Encelia californica	coast sunflower	5	20	100
Eriogonum fasciculatum	flat top buckwheat	5	25	250
Hazardia squarrosa	saw-toothed goldenbush	5	10	100
Hesperoyucca whipplei	chaparral yucca	3	3	50
Heteromeles arbutifolia	toyon	10	3	150
Mimulus aurantiacus	bush monkey flower	5	10	100
Rhus integrifolia	lemonadeberry	10	5	50
Salvia apiana	white sage	5	10	250
			TOTAL	**1,400**

SEED MIX[2]			
Scientific Name	**Common Name**	**Percent Purity/ Germination**	**Pounds Per Acre**
Acmispon glaber	deerweed	95/80	0.5
Amsinckia intermedia	common fiddleneck	45/65	1
Artemisia californica	California sagebrush	30/60	4
Deinandra fasciculata	fascicled tarplant	25/65	3
Encelia californica	California encelia	30/45	2
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	N/A	2
Eriogonum fasciculatum	flat top buckwheat	50/20	7
Eriophyllum confertiflorum	golden-yarrow	N/A	2
Eschscholzia californica	California poppy	98/80	2

SEED MIX[2]			
Scientific Name	**Common Name**	**Percent Purity/ Germination**	**Pounds Per Acre**
Lupinus bicolor	miniature lupine	98/85	1
Phacelia parryi	Parry's phacelia	95/80	1
Salvia apiana	white sage	88/30	3
Stipa lepida, deawned	foothill needlegrass	90/71	3
Stipa pulchra, deawned	purple needlegrass	90/75	3
		TOTAL	**34.5***

[1] The quantity of seed ordered for each phase/subphase will be determined based on the exact size of the area disturbed as part of mining activities.
[2] Substitutions require approval of the Restoration Specialist.
* No less than 30 lbs. per acre of seed shall be installed.

~~**Table 11**~~
~~**EROSION CONTROL SEED MIX[1,2] (97.90 acres)**~~

~~**Scientific Name**~~	~~**Common Name**~~	~~**Percent Purity/ Germination**~~	~~**Pounds Per Acre**~~
~~*Ambrosia psilostachya*~~	~~western ragweed~~	~~45/45~~	~~6~~
~~*Bromus carinatus*~~	~~California bromegrass~~	~~95/90~~	~~8~~
~~*Plantago insularis*~~	~~plantain~~	~~98/75~~	~~20~~
~~*Vulpia microstachys*~~	~~small fescue~~	~~90/80~~	~~20~~
		~~**TOTAL**~~	~~**54***~~

~~[1] The quantity of seed ordered for each phase/subphase will be determined based on the exact size of the area disturbed as part of mining activities.~~
~~[2] Substitutions require approval of the Restoration Specialist.~~
~~* No less than 50 lbs. per acre of seed shall be installed.~~

Container Plantings

Container plantings will be installed in irrigated revegetation areas, including riparian forest, riparian scrub, and DCSS areas. Container stock should be one-gallon size, rooted appropriately (i.e., neither root bound nor insufficiently developed), and should be installed in holes that are the same size as the planting container and backfilled afterward. Holes will be dug with mechanical augers where possible and by hand elsewhere. Plants should be installed in a way that mimics natural plant distribution; therefore, container plantings will be installed in groupings proportional to their density per acre. Upland planting holes should be filled with water twice before plantings are installed~~,~~ and then watered in after planting.

~~The Restoration Specialist must inspect all plantings for signs of disease on the day of delivery.~~ The Restoration Specialist must inspect all plant material prior to installation; root-bound material, any material with Argentine ants or other pests, and any other plants deemed damaged will not be accepted. They must be able to specifically identify Kuroshio shot-hole borer, gold-spotted oak borer, and thousand-canker fungus. Any diseased plants will be rejected and returned to the seller.

Cuttings

Cuttings of riparian trees or shrubs may be used in the riparian forest and riparian scrub revegetation areas. Any ~~riparian tree or shrub~~ cuttings would be in addition to the container plantings and seed specified in Table 7 and Table 8. If feasible, cuttings should be collected from within the existing riparian

corridor or the same watershed by personnel experienced in cutting collection and installation. Any species listed for planting can also be readily grown from cuttings installed directly into the ground, with the exception of blue elderberry (*Sambucus nigra*) and western sycamore (*Platanus racemosa*).

Prior to taking cuttings, it is essential that all equipment being used, typically consisting of a bucket of water and wood cutters, is sterilized so no pathogen cross-contamination occurs. All collected material must be inspected by a Restoration Specialist or nursery staff trained to detect Kuroshio shot-hole borer, gold spotted oak borer, and thousand canker fungus. Any infested material that is collected must be immediately mulched to pieces small than 1 inch in size. To maintain genetic diversity within the restored areas, no more than 10 cuttings should be taken from any one plant. Ideally, cuttings should be stored in water for approximately one week to encourage root development following planting.

In general, willow (*Salix* spp.) and cottonwood (*Populus fremontii*) pole cuttings should be at least three feet long and 0.75 to 1.25 inches in diameter, with the end that will be inserted into the ground (snipped closest to the tree trunk) cut at a 45-degree angle to facilitate soil penetration and maximize surface area for root growth. Mule fat (*Baccharis salicifolia*) cuttings can be slightly smaller. Any foliage or side branches should be stripped from each cutting to minimize water translocation and allow the cutting to put its energy into root growth.

Prior to installation the Restoration Specialist must inspect all cuttings for signs of disease. They must be able to specifically identify Kuroshio shot-hole borer, gold-spotted oak borer, and thousand canker fungus. Any diseased plants will be returned to the nursery where they will be destroyed (mulched to pieces smaller than 1 inch in size.

Cuttings should be installed a few feet into the ground such that the base of the cutting is at the water table. If the cutting is not in the water table or getting surface water (e.g., from supplemental irrigation), it will quickly dry out and die. Typically, a pole cutting is installed two to three feet deep. Cuttings should be installed in groupings according to the spacing recommendations made in Tables 6 and 7. Smaller species such as mule fat can be interspersed between larger over-story plants such as willows and cottonwoods.

Seed

Within the riparian forest and riparian scrub revegetation areas and~~, as well as within~~ the existing channel streambed~~,~~ seed will be dispersed by hand and/or with the use of a rotary seed applicator and raked into the soil ~~as needed~~.

~~-~~The DCSS revegetation areas and ~~other~~ the ~~reclaimed areas (i.e.,~~ 97.90~~--~~acres ~~of~~ erosion control ~~seed mix~~ areas~~)~~ will be hydroseeded with a tackifier to add ground stabilization. The hydroseed mixture shall consist of the following materials:

- 2,000 lbs./acre cellulose fiber
- 140 lbs./acre “M” Binder (tackifier)
- 200 lbs./acre Milogranite (fertilizer if required)
- Seed mix as listed (Table 10).

5.5.2 Erosion Control Areas

After site preparation and irrigation installation have been completed within each reclaimed subphase, an erosion control seed mix (Table 11, *Erosion Control Seed Mix*) will be applied to the graded pads located outside of the widened Sweetwater River floodplain (Figures 10a through 10e).

The species selected for seeding within erosion control areas have been observed within the on-site habitat or are native to southern California. These species grow in upland or transitional wetland/upland habitats. One of the species selected is an herbaceous perennial (western ragweed [*Ambrosia psilostachya*]), while the other three species are native annuals. All four species are only expected to provide cover during winter/spring months, and only in years with sufficient rainfall to allow for establishment from seed. These are the times of year and conditions when erosion is most likely to occur.

All seed should be obtained from southern San Diego County, whenever possible. Seed orders should be placed up to 12 months prior to the anticipated installation date to allow for sufficient seed production. Species substitutions, quantity changes, or use of bulk-grown native seed may be allowed, if necessary, at the discretion of the Restoration Specialist. The Restoration Specialist must approve all seed and container stock orders, including source locations, prior to ordering.

Table 11
EROSION CONTROL SEED MIX[1,2] (97.90 acres)

Scientific Name	Common Name	Percent Purity/ Germination	Pounds Per Acre
Ambrosia psilostachya	western ragweed	45/45	6
Bromus carinatus	California bromegrass	95/90	8
Plantago insularis	plantain	98/75	20
Vulpia microstachys	small fescue	90/80	20
		TOTAL	**54***

1 The quantity of seed ordered for each phase/subphase will be determined based on the exact size of the area disturbed as part of mining activities.
2 Substitutions require approval of the Restoration Specialist.
* No less than 50 lbs. per acre of seed shall be installed.

~~5.5~~5.6 IRRIGATION PLAN

Temporary, above-ground irrigation lines will be installed in the riparian forest, riparian scrub, and DCSS native habitat revegetation areas ~~(i.e., riparian forest, riparian scrub, and DCSS)~~, which will be temporarily irrigated with well water, if accessible~~;~~, otherwise, other irrigation connections will need to be established. The project landscape architect, together with the Installation Contractor, will inspect the irrigation system as well as coverage prior to plant/seed installation. Irrigation will not be installed on the graded pads located outside of the expanded Sweetwater River floodplain and bordering slopes (i.e., the erosion control areas) or within the existing low-flow river channel.

Irrigation plan sheets included with the Final Revegetation Plans will show the Point of Connection (POC), available pressure, controller location, valves, piping, and head locations. If the POC is beyond the limits of the native habitat revegetation areas, the off-site irrigation service line to the POC will be identified. Irrigation plans will provide the required backflow protection at the POC~~,~~ and identify the power source for the irrigation controller, if applicable.

6.0 MAINTENANCE PLAN

6.1 MAINTENANCE ACTIVITIES

6.1.1 Native Habitat Revegetation

A five-year maintenance program, which will be initiated immediately following revegetation installation, is proposed to ensure the successful establishment and persistence of riparian forest/riparian scrub and DCSS habitat within the revegetated portions of the project site. The five-year period will start separately for each sub-phase as revegetation/erosion control reclamation is completed in that area. The maintenance program will involve the removal of non-native ~~species~~ vegetation and trash, irrigation maintenance, and any remedial measures deemed necessary for the success of the revegetation program (e.g., re-seeding and/or re-planting). Maintenance activities will be directed by the Restoration Specialist and implemented by the Maintenance Contractor.

The maintenance guidelines ~~specified herein~~for the native habitat revegetation areas are tailored for native plant establishment. Maintenance personnel will be informed of the goals of the revegetation effort and the maintenance requirements. A professional with experience and knowledge in native habitat restoration maintenance will supervise maintenance. It is the Maintenance Contractor's responsibility to keep seeded and planted areas free of debris, to monitor irrigation function and scheduling as well as plant material condition and health, and to remove non-native vegetation. The Maintenance Contractor will also be responsible for replacing any dead or terminally stressed plants, at the direction of the Restoration Specialist. Damage to plants, irrigation systems, and other facilities occurring as a result of unusual weather or vandalism will be repaired as directed by the Restoration Specialist. The cost of such repairs will be paid for as extra work. The contractor will be responsible for damage caused by the contractor's inadequate maintenance or operation of irrigation systems, as determined by the Restoration Specialist.

Irrigation

The goal is to obtain germination and growth with the least amount of irrigation. Too much irrigation results in abnormal habitat and encourages invasion by non-native plants, leaches nutrients from the soil, and can increase erosion; therefore, water will be applied infrequently and only as needed to prevent plant mortality.

The irrigation system within the riparian forest, riparian scrub and DCSS revegetation areas will be maintained until the Restoration Specialist determines that supplemental water is no longer required. At that time, irrigation will be permanently disconnected (e.g., the mainline will be cut), but not removed. Above-ground portions of irrigation will be removed when directed by the Restoration Specialist, or following restoration sign off by the County.

Non-native Plant Control

Particular emphasis will be placed on the proactive removal of non-native vegetation. As non-native plants become evident, they should be removed by hand or controlled with the proper herbicides (if approved by the Restoration Specialist). The Restoration Specialist will oversee non-native plant control by the Maintenance Contractor; however, maintenance personnel must be knowledgeable in

distinguishing non-native species from desirable native vegetation. If maintenance personnel mistakenly remove native species, the Maintenance Contractor will be responsible for rectifying the damage, at the direction of the Restoration Specialist.

Non-native plants considered to be moderately or highly invasive by the California Invasive Plant Council (Cal-IPC 2020) shall be eradicated within the boundaries of all native habitat revegetation areas for all five years of maintenance. Examples of invasive plants observed on-site, include but are not limited to, tamarisk (*Tamarix* spp.), giant reed (*Arundo donax*), Mexican fan palm (*Washingtonia robusta*), fennel (*Foeniculum vulgare*), Italian thistle (*Carduus pycnocephalus*), stinkwort (*Dittrichia graveolens*), pampas grass (*Cortaderia selloana*), and purple fountain grass (*Pennisetum setaceum*). Additional species may be added to this list, at the discretion of the Restoration Specialist. Non-native grasses listed as moderately or highly invasive will be controlled on-site, but due to their abundance in the local area, total eradication is not considered feasible.

Pruning

No post-installation pruning is necessary unless otherwise directed by the Restoration Specialist. For example, if it is necessary to remove an obstruction from or for the repair of the irrigation system.

Trash

All trash observed within the native habitat revegetation area should be removed for the duration of maintenance work in the respective sub-phase. All trash will be properly disposed of at a licensed landfill.

Pests

Insects, vertebrate pests, and diseases will be monitored. Generally, pests will be tolerated unless they pose a significant threat to restoration success. If deemed necessary, a licensed pest control adviser will make specific pest control recommendations. All applicable federal and state laws and regulations will be closely followed. The Restoration Specialist will be consulted on any pest control matters and will specifically monitor the native habitat revegetation areas for evidence of invasive Kuroshio shot-hole borers, gold-spotted oak borer, and thousand canker fungus. If identified, diseased trees will be mulched into pieces smaller than 1 inch in size in-situ or the Restoration Specialist will evaluate any other potential methods for control to determine if they are appropriate at the revegetation area.

Fertilization

Fertilizer will not be applied in the maintenance phase, except in extraordinary circumstances and only followingat the written direction of the Restoration Specialist.

Special-Status Species Issues

Maintenance activities are not anticipated to include the use of heavy equipment or vehicles and as such are not anticipated to have adverse effects on sensitive species. However, mechanical line trimmers may be used if deemed necessary by the Restoration Specialist, and all maintenance activities will be carried out under the direction of the Restoration Specialist, as necessary, to avoid any impacts to sensitive species.

Remedial Installation

Areas with low seed germination and establishment of native cuttings/plantings within the riparian forest and riparian scrub revegetation areas or associated DCSS slopes will be re-seeded and/or re-planted~~,~~ at the direction of the Restoration Specialist. Areas seeded with the erosion control mix outside of the widened Sweetwater River channel will not be re-seeded.

6.1.2 Erosion Control Areas

A two-year maintenance program, which will be initiated immediately following hydroseed application, is proposed for the 97.90-acre~~s of~~ erosion control areas. The two-year period will start separately for each sub-phase as erosion control reclamation is completed in that area. The maintenance program will involve the removal of non-native vegetation and trash. Maintenance activities will be directed by the Restoration Specialist and implemented by the Maintenance Contractor.

The maintenance guidelines specified for the erosion control areas are tailored for establishing target cover to stabilize soils against potential erosion. Maintenance personnel will be informed of the goals of the erosion control revegetation effort and the maintenance requirements.

Non-Native Plant Control

Particular emphasis will be placed on the proactive removal of non-native vegetation. As non-native plants become evident, they should be removed by hand or controlled with the proper herbicides (if approved by the Restoration Specialist). The Restoration Specialist will oversee non-native plant control by the Maintenance Contractor; however, maintenance personnel must be knowledgeable in distinguishing non-native species from desirable native vegetation. If maintenance personnel mistakenly remove native species, the Maintenance Contractor will be responsible for rectifying the damage, at the direction of the Restoration Specialist.

Non-native plants considered to be moderately or highly invasive by the California Invasive Plant Council (Cal-IPC 2020) shall be substantially limited within the boundaries of the erosion control revegetation areas for both years of maintenance. Non-native annual grasses listed as moderately or highly invasive will be allowed to persist in the erosion control areas.

Remedial Installation

Areas seeded with the erosion control mix outside of the widened Sweetwater River channel will not be re-seeded.

6.2 SCHEDULE

6.2.1 Native Habitat Revegetation

Maintenance Schedule

Maintenance will be performed as necessary to prevent re-seeding by non-native plants and will likely change with varying site conditions and seasons. The schedule outlined herein (Table 12, *5-Year Maintenance Schedule for Native Habitat Revegetation Areas*) serves only as a guideline, and more

frequent maintenance may be required to prevent re-seeding by non-native vegetation and/or to meet interim cover limits for non-native vegetation. The Maintenance Contractor will complete maintenance requests from the Restoration Specialist within 14 days of any written request.

At a minimum, the Maintenance Contractor will be responsible for all maintenance activities during the five-year maintenance period. For the first three years, maintenance is expected to be required every month between January through June (to cover the peak establishment period of spring germinating species) and two additional times during the remainder of the year. Maintenance visits may be reduced to four per year in Years 4 and 5 if approved by the Restoration Specialist and County, and shall be timed to best control invasive species, based on weather patterns and monitoring results. The Maintenance Contractor will complete maintenance requests from the Restoration Specialist within 14 days of any written request or monitoring report.

Table 12
5-YEAR MAINTENANCE SCHEDULE FOR NATIVE HABITAT RE~~-~~VEGETATION AREAS[1]

Phase	Schedule
~~**Maintenance Contractor**~~	
Year 1 through Year 3 January to June July to December	Total Eight Visits/Year Every Month (six Visits) Two Visits Total
Years 4 and 5	Total Four Visits/Year (Three in Spring and one in Summer)

[1] This schedule is only a guideline; maintenance will be performed as necessary and as directed by the Restoration Specialist.

Irrigation Schedule

Following the start of the maintenance period, irrigation shall be applied daily (unless directed otherwise by the Restoration Specialist) to stimulate seed germination and ensure the survival of installed plantings. Once container plantings, cuttings, and seed are established, irrigation should become less frequent and deeper (usually accomplished with several consecutive irrigation events in a 24-hour period followed by several days with no irrigation). Native plants that are infrequently irrigated may grow slower initially but will ultimately be better able to withstand natural variations in rainfall and, therefore, be more successful long-term. Irrigation will be minimized to limit runoff and will be turned off during and following natural rainfall events. In the absence of rain events, irrigation will occur at a minimum of three times per week for the first two years to ensure plant establishment. By Year 3, irrigation shall be reduced and occur mainly during the natural rainy season (October through April), as needed to mimic an average rainy season. If the Restoration Specialist determines that there is sufficient native cover and plants are well-established, irrigation may be deactivated prior to the end of Year 3. To demonstrate that vegetation is self-sustaining, the irrigation system must be turned off for at least two years prior to the end of the five-year maintenance/monitoring period.

6.2.2 Erosion Control Areas

Within the erosion control areas, maintenance will be performed as necessary to prevent re-seeding by non-native plants and will likely change with varying site conditions and seasons. The schedule outlined herein (Table 13, *2-Year Maintenance Schedule for Erosion Control Areas*) serves only as a guideline, and more frequent maintenance may be required to prevent re-seeding by non-native vegetation and/or to

meet interim cover limits for non-native vegetation. The Maintenance Contractor will complete maintenance requests from the Restoration Specialist within 14 days of any written request.

At a minimum, the Maintenance Contractor will be responsible for all maintenance activities during the five-year maintenance period. For the first three years, maintenance is expected to be required every month between January through June (to cover the peak establishment period of spring germinating species) and two additional times during the remainder of the year. Maintenance visits may be reduced to four per year in Years 4 and 5 if approved by the Restoration Specialist and County, and shall be timed to best control invasive species, based on weather patterns and monitoring results. The Maintenance Contractor will complete maintenance requests from the Restoration Specialist within 14 days of any written request or monitoring report.

Table 13
2-YEAR MAINTENANCE SCHEDULE FOR EROSION CONTROL AREAS[1]

Phase	Schedule
Year 1 through Year 2	Total Eight Visits/Year
January to June	Every Month (six Visits)
July to December	Two Visits Total

[1] This schedule is only a guideline; maintenance will be performed as necessary and as directed by the Restoration Specialist.

7.0 MONITORING PLAN

7.1 PERFORMANCE STANDARDS

7.1.1 Native Habitat Revegetation

Success criteria provide specific standards to evaluate the progress of the revegetation effort. Attainment of these standards indicates that an area is progressing toward the goals and habitat functions and services specified by this plan. Success of the native habitat revegetation area will be determined by comparing planting survivorship, vegetative cover, and species richness within the native habitat revegetation area to targets that have been established based on visual observations of similar native habitat in San Diego County (Table 14~~3~~, *Success Criteria Milestones for the Native Habitat Revegetation Areas*). Success criteria shall only apply to native habitat revegetation areas; no success criteria shall be applied to the erosion control pad.

Table 14~~3~~
SUCCESS CRITERIA MILESTONES FOR THE NATIVE HABITAT REVEGETATION AREAS

Criteria	Target				
	Year 1	Year 2	Year 3	Year 4	Year 5
Diegan Coastal Sage Scrub Revegetation					
Minimum planting survivorship (percent)	90	80	--	--	--
Minimum native cover (percent)	--	--	40	50	60
Minimum native species richness (number of species)	4	4	5	6	7
Maximum non-native forb cover (percent)	5	5	5	5	5
Maximum non-native annual grass cover (percent)	5	5	10	15	20
Maximum target invasive cover[1] (percent)	0	0	0	0	0

Criteria	Target				
	Year 1	Year 2	Year 3	Year 4	Year 5
Irrigation	YES	YES	YES	NO	NO
Riparian Forest Revegetation					
Planting survivorship (percent)	90	80	--	--	--
Minimum native cover (percent)	--	--	40	50	60
Minimum native species richness (number of species)	7	6	5	5	5
Maximum non-native cover (percent)	10	10	10	10	10
Maximum target invasive cover[1] (percent)	0	0	0	0	0
Irrigation	YES	YES	YES	NO	NO
Riparian Scrub Revegetation					
Planting survivorship (percent)	90	80	--	--	--
Minimum native cover (percent)	--	--	30	35	40
Minimum native species richness (number of species)	8	7	6	6	6
Maximum non-native cover (percent)	10	10	10	10	10
Maximum target invasive cover[1] (percent)	0	0	0	0	0
Irrigation	YES	YES	YES	NO	NO
Streambed (Emergent Wetland) Seeding[2]					
Maximum non-native forb cover (percent)	5	5	5	5	5
Maximum target invasive cover[1] (percent)	0	0	0	0	0

[1] Seedlings of invasive species are expected to volunteer each year; however, no target invasive species should be allowed to persist, or drop seed within the native habitat revegetation areas; excludes invasive annual grasses.

[2] Sweetwater River is subjected to periodic heavy flows as a result of water releases and transfers between Loveland Reservoir and Sweetwater Reservoir, as controlled by the Sweetwater Authority. As such, vegetation along the Sweetwater River is anticipated to be dynamic and transition between sections of unvegetated streambed and vegetated streambed and no minimum native cover requirement is required.

Survivorship

Container plant survival within the riparian forest, riparian scrub, and DCSS revegetation areas should be 90 percent of the initial plantings in Year 1 and 80 percent in Year 2 (Table 1~~3~~4). If these targets are not met, dead plants should be replaced unless their function has been replaced by natural recruitment.

Native Cover

Cover by native vegetation within the riparian forest and shrub habitat revegetation area should increase over time and ultimately approach that of the similar native habitat that occurs on-site and within adjacent areas. By the end of the five years, native cover in the riparian forest revegetation areas and on the DCSS slopes should be at least 60 percent, while native cover in the relatively dry but periodically scoured riparian scrub revegetation area should be at least 40 percent (Table 1~~4~~3). No native cover criterion has been established for the ~~Sweetwater River~~ low-flow Sweetwater River channel (i.e., streambed/emergent wetland) as the river is subjected to periodic heavy flows as a result of water releases and transfers between Loveland Reservoir and Sweetwater Reservoir, as controlled by the Sweetwater Authority. As such, vegetation along the Sweetwater River is anticipated to be dynamic and transition between sections of the unvegetated streambed and vegetated streambed. If native cover during Years 1 and 2 does not appear to be on track toward attaining Year 3 targets, additional measures, such as supplemental plant and seed installation, irrigation adjustments, or increased weed control, may be implemented, per the direction of the Restoration Specialist.

Native Species Richness

Species richness is the number of native species present in a given area. During the annual monitoring, species richness within the native habitat revegetation area will be determined by visual assessment only in Years 1 and 2 and within the belt and point intercept transects in Years 3 through 5. Annual success criteria for species richness for native species vary by year with at least seven native species present on the DCSS slopes, five species in riparian forest revegetation areas, and six native species present in the riparian scrub revegetation areas at the end of Year 5 (Table 1~~3~~4). If the species richness goal for a given year is not met, corrective measures (e.g., reseeding, planting, etc.), will be taken to ensure the eventual achievement of the five-year goal.

Non-Native Cover

Non-native cover is typically a problem with habitat restoration, particularly at the outset of a restoration effort. However, as the revegetation effort takes hold, and with diligent maintenance efforts, non-native cover should decrease to an acceptable level. Given the maintenance schedule for the site, non-native cover (including invasive annual grasses) within the existing ~~Sweetwater River~~ low-flow Sweetwater River channel and riparian forest and riparian scrub revegetation areas should not exceed 10 percent for all five years of the revegetation effort (Table 1~~3~~4). On DCSS slopes, non-native annual grasses are expected to slightly increase over time within a native shrub understory, up to a maximum of 20 percent cover. Cover by non-native forbs, however, should be kept to no more than five percent throughout the five-year maintenance effort (Table 14~~3~~). If non-native cover limits are exceeded, additional weed control (either frequency or thoroughness) may be recommended by the Restoration Specialist.

Target Invasive Cover

Target invasive non-native plants ranked as moderately or highly invasive by the Cal-IPC (2020) should be completely eradicated from the native habitat revegetation area each year. New seedlings of invasive plants are expected since these species occur in surrounding open space; however, no target invasive species shall be allowed to persist, or drop seed, within the ~~Sweetwater River~~ low-flow Sweetwater River channel, riparian forest, riparian scrub, or DCSS revegetation areas. Annual grasses listed as highly or moderately invasive do not need to be eradicated, rather they are included within the non-native annual grass cover success criterion (Table 1~~3~~4). Perennial invasive grasses, such as Bermuda grass, should be counted as invasive species and be targeted for eradication. If target invasive cover limits are exceeded, additional weed control (either frequency or thoroughness) may be recommended by the Restoration Specialist.

Irrigation

To provide evidence that native vegetation is self-sufficient, irrigation of the native habitat revegetation area must be shut off at least two years prior to the end of the maintenance/monitoring period.

Palmer's Goldenbush

In addition to native revegetation performance standards, a total of 234 individuals of Palmer's goldenbush shall successfully be established. This performance standard may be achieved in any phases/subphases of revegetation during the 5 years of monitoring. The number of Palmer's goldenbush

individuals present within the active revegetation area(s) shall be counted in late summer (August/September) during the riparian forest and riparian scrub annual monitoring event until all individuals are counted or the target number of individuals is met.

7.1.2 Erosion Control Areas

Within the erosion control areas, success criteria provide standards to evaluate whether sufficient cover from acceptable vegetation has established to provide protection against erosion (Table 15, *Success Criteria Milestones for the Erosion Control Areas*). The goal is to have at least ~~25~~ 40 percent cover by all acceptable vegetation (native and non-native) at the time of the Year 2 annual assessment, with at least 4 native species present, and no more than 5 percent cover by non-native forbs and 1 percent cover by invasive vegetation (other than annual grasses). Non-native annual grasses are acceptable cover within the erosion control areas and there is no specific requirement for native cover.

Table 15
SUCCESS CRITERIA MILESTONES FOR THE EROSION CONTROL AREAS

Criteria	Target	
	Year 1	Year 2
Minimum vegetation cover (percent) [1]	25	40
Minimum native species richness (number of species)	4	4
Maximum non-native forb cover (percent)	5	5
Maximum target invasive cover[2] (percent)	1	1
Irrigation	N/A	N/A

[1] Includes non-native and invasive annual grasses.

[2] Seedlings of invasive species are expected to volunteer each year; however, few target invasive species should be allowed to persist, or drop seed within the native habitat revegetation areas; excludes invasive annual grasses.

Vegetation Cover

Within the erosion control areas cover by native vegetation and non-native annual grasses should be sufficient to provide protection against seasonal erosion from rainfall. Given that the areas targeted for erosion control will be relatively flat, relatively low cover is needed for erosion control. Cover targets can only be attained in years with sufficient rainfall to enable plant establishment from seed.

Non-Native Cover

Given the maintenance schedule for the site, cover by non-native forbs should not exceed 5 percent for both years of the revegetation effort (Table 15). If non-native cover limits are exceeded, additional weed control (either frequency or thoroughness) may be recommended by the Restoration Specialist.

Target Invasive Cover

Target invasive non-native plants ranked as moderately or highly invasive by the Cal-IPC (2020) should be nearly eradicated from the erosion control areas each year. New seedlings of invasive plants are expected since these species occur in the surrounding open space; however, very few target invasive species shall be allowed to persist~~,~~ or drop seed. Annual grasses listed as highly or moderately invasive do not need to be eradicated. Since their roots bind soils and protect against erosion, they can be left on site and are included as part of the vegetation cover target (Table 15). Perennial invasive grasses, such

as Bermuda grass, should be counted as invasive species and be targeted for eradication. If target invasive cover limits are exceeded, additional weed control (either frequency or thoroughness) may be recommended by the Restoration Specialist.

7.2 TARGET FUNCTIONS AND VALUES

Upon meeting success criteria, the native habitat revegetation area will have a net functional lift in habitat values over the existing condition by providing higher quality foraging and breeding habitat as well as greater vegetative cover and microhabitat features.

7.3 TARGET ACREAGES

The native habitat revegetation area target acreages addressed in this plan include revegetation of 11.99 acres of DCSS, 99.59 acres of riparian forest and riparian scrub habitat, and 9.92 acres of streambed (i.e., Sweetwater River) over five years. In addition, a total of 234 Palmer's goldenbush individuals shall be established.

7.4 MONITORING METHODS

Monitoring will be carried out by the Restoration Specialist, beginning with plant/seed orders as well as all site preparation and habitat installation~~,~~ and continuing through final sign-off of the revegetation areas, approximately five years after initial installation activities are completed. Monitoring of the native habitat revegetation area will include: (1) site preparation/installation monitoring~~,~~; (2) maintenance monitoring~~;~~, and (3) annual technical monitoring. The erosion control areas will be monitored on the same schedule and in the same manner as the native habitat revegetation areas through the end of Year 2. The methods for the annual technical monitoring are provided below. During each visit, the Restoration Specialist will inspect the site to ensure that the revegetation effort is progressing as planned and identify any problems that may affect the effort.

7.4.1 Site Preparation/Installation Monitoring

The Restoration Specialist will coordinate with the Installation Contractor regarding all plant and seed orders/contract growing. In addition, they will coordinate with the Installation Contractor to help direct the harvest of native cuttings, as needed. The Restoration Specialist will be on-site regularly during grading of the final landforms and application of salvaged topsoil, and installation of erosion control measures, irrigation, and plantings/seed to ensure that activities are being conducted per this plan. The Restoration Specialist must inspect and authorize each phase of work before the next phase may begin. The monitoring schedule is outlined in Table 14~~6~~, *Maintenance Monitoring Schedule*; additional monitoring may be needed if there are problems with the Installation Contractor's performance or unexpected difficulties with site preparation.

Table 1~~6~~4
MAINTENANCE MONITORING SCHEDULE[1]

Phase	Schedule
Site Preparation/Installation Monitoring	
Site preparation and installation	Daily, or as needed
Maintenance Monitoring	
Year 1 through Year 3 November to April May to October	8 visits Monthly June and August
Years 4 and 5	4 visits
Annual Technical Monitoring	
Once per year	Upland: April/May Wetland: August/September

[1] This schedule is the minimum monitoring frequency; additional monitoring may be required if there are problems with Installation or Maintenance Contractor performance, unexpected difficulties with site preparation, or issues with habitat establishment.

Prior to the start of mining, and again prior to the start of installation for each subphase, the Restoration Specialist will document existing site conditions by taking photographs and noting any special conditions within the proposed native habitat revegetation area. To document the progress of the revegetation effort, the Restoration Specialist will identify at least four photographic documentation locations in each sub-phase area, though additional locations may be established, depending on the exact size of the subphase area. Photo stations will be mapped with a sub-meter accuracy global positioning system (GPS) and plotted on a map. These photos will be used for future comparison with post-installation and annual assessment photos.

7.4.2 Maintenance Monitoring

Maintenance monitoring of the native habitat revegetation area will consist of general site inspections focused on visual observations of native plant establishment and growth and other site conditions (e.g., presence of non-native plants, signs of plant diseases, erosion, etc.), and will document all wildlife observed during each site visit for inclusion in the annual report. Following the installation of irrigation and plantings in the native habitat revegetation area, the Restoration Specialist will monitor and direct maintenance activities for the 5-year maintenance and monitoring period. In Years 1 through 3, visits will be conducted monthly from November through April (to cover the peak establishment and growth period for upland vegetation) and twice in the remainder of the year, for a total of eight visits per year (Table 14). During Years 4 and 5, monitoring will be conducted four times per year, with an emphasis on the spring and summer growing season. This monitoring schedule is the minimum; more frequent inspections may be necessary if there are problems with contractor performance or habitat development. Monitoring memos noting any issues with plant establishment, irrigation, sediment control, etc., will be provided as necessary to the Installation/Maintenance Contractor(s) and the project proponent. Any diseased plants that are identified will be mulched on-site to pieces smaller than 1 inch in size.

7.4.3 Annual Technical Monitoring

The Restoration Specialist will conduct annual technical monitoring of the native habitat revegetation area each year during the five-year maintenance and monitoring period. Annual monitoring will occur in the spring (April/May) for the DCSS slopes, and in late summer (August/September) for the riparian

forest and riparian scrub habitats. The assessments are scheduled to coincide with the peak of the growing season for the respective target habitat types. The exact timing of the visits will depend on on-site and weather conditions.

In the native habitat revegetation area, t~~T~~echnical monitoring of both the DCSS slopes and riparian areas will include both qualitative (visual) and quantitative (based on data collection) sampling, depending on the year. In Years 1 and 2, only qualitative monitoring will be conducted, consisting of the following: (1) photo documentation; (2) visual estimates of container planting survivorship, cover by native and non-native plants, target invasive species cover, and the average height of tree and shrub species; (3) a complete list of plant and animal species observed and detected; (4) general observations of plant health; and (5) observations of site hydrology and erosion. Starting in Year 3, quantitative sampling consisting of transect sampling will be conducted. The success of the wetland mitigation effort will be evaluated by comparing the habitat development with success criteria milestones (Table 14~~3~~).

In the erosion control areas, annual technical monitoring will be limited to a qualitative assessment and comparing the results of that assessment to success criteria milestones identified in Table 15.

7.4.3.1 Photo Documentation

Photos will be taken as part of all five annual monitoring events and will be included in the respective year's annual report. Photos will be taken at the same photo locations that are established prior to the start of the revegetation effort. To visually demonstrate the progress of the revegetation effort, photos taken immediately after installation of each sub-phase will be included in each report for comparison with the respective year's annual assessment photos.

7.4.3.2 General Wildlife

During each of the five annual assessments, all wildlife incidentally observed or detected will be documented. No focused wildlife surveys will be conducted.

7.4.3.3 Transect Sampling

Starting in Year 3, 50-meter (m) transects will be used to collect quantitative data within the native habitat revegetation areas. These transects will be randomly located during the Year 3 annual assessment, marked in the field with PVC pipes, and mapped onto an aerial figure using a GPS. Plant cover data will be collected along each transect using the point intercept line transect sampling methods described in the California Native Plant Society's Field Sampling Protocol (Sawyer and Keeler-Wolf 1995). Native, non-native, and invasive plant cover data will be collected by recording all of the plant species intercepted at each 0.5-m interval along the length of each transect. Vegetation will be recorded separately for herb (0 to 0.6 m), shrub (0.6 to 2 m), and tree (greater than 2 m) layers. Species richness (the number of native species present in a given area) data will be collected by noting all species occurring along a 5-m belt transect centered on each line transect. A minimum of two 50-meter transects will be installed within both riparian forest and riparian scrub habitat in each sub-phase for a total of 40, 50-meter transects. At least one additional 50-meter transect will be sampled in each sub-phase that contains DCSS revegetation on upland slopes. Additional transects may be installed within a given sub-phase depending on the overall size of the revegetation area.

7.5 MONITORING REPORTS

7.5.1 As-Built Report

The Restoration specialist shall submit a brief as-built letter report to the County within 45 days of completion of revegetation of each individual sub-phase. The report will describe revegetation site preparation, installation methods, and the as-built status of the site. To document the implementation of the revegetation plan and baseline site conditions, the letter will include an as-built graphic on an aerial photo base as well as photos taken from the designated photo stations before and after the revegetation installation. The as-built letter will serve as the "time zero" report, noting when the five-year maintenance and monitoring period began.

7.5.2 Annual Reports

An annual report including qualitative and quantitative analysis will be prepared each year during the five-year monitoring period and submitted to the County and Wildlife Agencies. A single report will be submitted for the project site and shall clearly present the current revegetation status and monitoring results for each active individual sub-phase with active revegetation. Monitoring and maintenance field data shall be included as an addendum to each report.

Any significant issue or contingency that arises on the job site (e.g., plant survival issues, fire, or flooding) shall be reported in writing to the County within two weeks from the date of the incident. Accompanying the report shall be a plan for remediation, with an implementation schedule and a monitoring schedule.

8.0 COMPLETION OF REVEGETATION

Revegetation of the project site will be conducted in a staggered timeline as individual sub-phases are progressively reclaimed and revegetated following the completion of mining activities. As such, completion of the revegetation effort will be similarly accomplished in a staggered effort as each sub-phase is successfully revegetated. The County and Wildlife Agencies will be notified of revegetation completion within each sub-phase through the submittal of annual reports.

When sign-off is recommended for a particular project sub-phase, the County and Wildlife Agencies may inspect that area to determine the success of that revegetation effort. If an area meets all success standards, then the revegetation effort will be considered a success; if final success criteria are not met by the end of Year 5, the maintenance and monitoring program for that area may be extended until the standards are met, subject to County and Wildlife Agencies discretion. Specific remedial measures (approved by the County and Wildlife Agencies) will be used during any extension. Monitoring extensions will be done only for areas that fail to meet final success criteria. This process will continue until all Year 5 success criteria are attained or until the County, together with the Wildlife Agencies, determines that supplemental measures are appropriate. Should the revegetation effort meet all goals prior to the end of the five-year monitoring period, the County and Wildlife Agencies, at their discretion, may terminate the monitoring effort.

9.0 CONTINGENCY MEASURES

9.1 INITIATING CONTINGENCY MEASURES

If the County or Wildlife Agencies determine upon receipt of any of the annual monitoring reports that the revegetation effort is not meeting success standards, they shall notify the project proponent in writing that the revegetation effort may require additional measures for successful implementation. The project proponent shall then have 30 days to respond to the notification. During this period, the project proponent may discuss alternatives with the County and Wildlife Agencies.

9.2 ALTERNATIVE LOCATIONS FOR CONTINGENCY COMPENSATORY MITIGATION

Sufficient area for contingency restoration is present at the project site. If the success criteria are not being met, the County and Wildlife Agencies will work together with the project proponent to reach an alternative mutually acceptable solution.

The project proponent, New West Investment, Inc., shall be responsible for all costs associated with any remedial measures.

9.3 NATURAL DISTASTER

Any significant issue or contingency that arises on the job site (e.g., plant survival issues, fire, or flooding) shall be reported in writing to the County of San Diego within two weeks from the date of the incident. Accompanying the report shall be a plan for remediation, with an implementation schedule and a monitoring schedule.

10.0 LIST OF PREPARERS

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