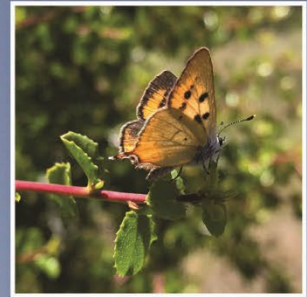


PUBLIC REVIEW DRAFT

SDG&E HABITAT CONSERVATION PLAN AMENDMENT 2022

PREPARED BY:
SAN DIEGO GAS & ELECTRIC
Environmental Services
Last Edited: May 2022



Photos from top to bottom: Burrowing Owl (*Athene cunicularia*) by Andrew Fisher; Hermes Copper Butterfly (*Lycaena hermes*) by Jenna Hartsook; Stephens' Kangaroo Rat (*Dipodomys stephensi*) by Andrew Fisher; Arroyo Toad (*Anaxyrus californicus*) by Michael Anguiano; Coast Horned Lizard (*Phrynosoma blainvillii*) by Andrew Fisher



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LIST OF ACRONYMS AND ABBREVIATIONS

ARTO	arroyo toad
BGEPA	Bald and Golden Eagle Protection Act
BSS	Belding's savannah sparrow
BUOW	burrowing owl
C.F.R.	Code of Federal Regulations
CAGN	coastal California gnatcatcher
Cal-IPC	California Invasive Plant Council
CACW	coastal cactus wren
CDFW	California Department of Fish & Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CPUC	California Public Utilities Commission
DEM	Digital Elevation Model
ECP	Eagle Conservation Plan
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
GIS	geographic information system
GRC	General Rate Case
HCB	Hermes copper butterfly
HCP	Habitat Conservation Plan
ITP	incidental take permit
LBVI	least Bell's vireo
LEHCP	Low-Effect Habitat Conservation Plan
LFRR	light-footed Ridgway's rail
LMS	Laguna Mountains skipper
MCBCP	Marine Corps Base Camp Pendleton
MHCOS	Multi-Habitat Conservation and Open Space Plan
MHCP	Multiple Habitat Conservation Program
MSCP	Multiple Species Conservation Program
MSHCP	Multi-Species Habitat Conservation Plan
NCCP	Natural Community Conservation Plan
NCCPA	Natural Community Conservation Planning Act
NEPA	National Environmental Policy Act
NPPA	Native Plant Protection Act
O&M	operations and maintenance
OHV	off-highway vehicle
OP	Operational Protocol
PAR	Property Analysis Record
PBF	physical and biological feature
PIZ	Probable Impact Zone
PPM	Pacific pocket mouse
PSR	Pre-activity Survey Report
R/E Program	Habitat Restoration and Enhancement Program
ROW	Rights-of-Way

SANDAG	San Diego Association of Governments
SDG&E	San Diego Gas & Electric Company
SKR	Stephens' kangaroo rat
SNPL	western snowy plover
SWFL	southwestern willow flycatcher
TRBL	tricolored blackbird
U.S.C.	United States Code
UAS	Unmanned Aircraft System
USDA	U.S. Department of Agriculture
USFWS	United States Fish & Wildlife Service
USGS	U.S. Geological Survey
WYBC	western yellow-billed cuckoo
°C	degrees Centigrade

GLOSSARY OF DEFINED TERMS

No.	Term	Definition
1.	Annual Report	Report required under Section 6.4 of the HCP Amendment that will be prepared each year by SDG&E and provided to USFWS to document permit compliance and implementation of the conservation strategy.
2.	ARTO-Habitat	Those areas where there is a potential for arroyo toad to occur or in designated critical habitat with PBFs.
3.	Biologist	<p>A person who has the educational background, training, and work experience (handling experience or permits) required to perform a specific biological task.</p> <p>The term also includes a botanist, where applicable, for specific plant-related tasks, or habitat restoration specialists.</p>
4.	BSS-Habitat	Those areas where there is a potential for Belding's savannah sparrow to occur.
5.	BUOW-Habitat	Those areas where burrowing owl is known to nest or there is a potential for burrowing owl to nest (i.e., in the vicinity of known nesting occurrences).
6.	CACW-Habitat	Those areas where there is a potential for coastal cactus wren to occur, especially individuals or groupings of cactus greater than 2 feet tall.
7.	CAGN-Habitat	Those areas where there is a potential for coastal California gnatcatcher to occur.
8.	Cal-IPC Inventory	An inventory that categorizes plants that threaten California's natural areas. The inventory includes plants that cause damage in California (invasive plants) as well as "Watch" plants that are a high risk of becoming invasive in the future, and is prepared and maintained by the California Invasive Plant Council (Cal-IPC). First published in 1999, this list was later updated in 2006 and now includes more detailed information on invasive species impacts and distribution, more transparent criteria for the rating system, and more thorough documentation for each assessment.

No.	Term	Definition
9.	Changed Circumstances	Changed Circumstances are defined in 50 C.F.R. 17.3 and mean changes in circumstances affecting a species or geographic area covered by a conservation plan that can reasonably be anticipated by SDG&E and the Wildlife Agencies.
10.	Cover	The percent of a given area covered in vegetation, generally equaling the area of the site covered by shadow if the sun were directly overhead.
11.	Covered Activities	Current and future activities of San Diego Gas & Electric Company (SDG&E), arising out of or in any way connected with the siting (including any site assessment, surveying, testing, or planning), design, installation, construction, use, maintenance, repair, and removal of Facilities within the Plan Area; biological surveys, handling, and habitat management; or any activities associated with the acquisition of property rights in relation thereto, as more fully described in Sections 2, 4, 5, and 6 of the HCP Amendment.
12.	Covered Species	All species, subspecies, and populations identified in Section 3, Table 3.1, of the HCP Amendment.
13.	DEMs	Digital Elevation Models provided by U.S. Geological Survey.
14.	ESA	The federal Endangered Species Act (16 U.S.C. Section 1531, <i>et seq.</i>).
15.	Facilities	Facilities that are part of SDG&E's operations as an investor-owned utility company, whether owned or operated by SDG&E, that are described in Section 2 of the HCP Amendment.
16.	GRC	The regulation of rates is administered through a California Public Utility General Rate Case proceeding that takes place every 3 to 4 years. As part of the state-mandated proceeding, investor-owned electric and gas companies address the costs of operating and maintaining the utility system and the allocation of those costs among customer classes.

No.	Term	Definition
17.	HCB-Habitat	Those areas where there is potential for Hermes copper butterfly to occur that have PBFs and are within the Mapped Areas as delineated by USFWS and updated annually.
18.	HCP Amendment	Reference to this document, the 2022 SDG&E HCP Amendment to SDG&E's 1995 Subregional Natural Community Conservation Plan/Habitat Conservation Plan to the United States Fish & Wildlife Service (USFWS) and California Department of Fish & Wildlife (CDFW).
19.	Implementing Agreement	The 1995 San Diego Gas & Electric Company Subregional Natural Community Conservation Plan Implementing Agreement/California Endangered Species Act (CESA) Memorandum of Understanding, together with all documents and instruments that are attached hereto or incorporated herein by reference, and all addenda thereto.
20.	incidental take	Take of Listed Species that is otherwise prohibited by ESA Section 9(a)(1)(B) where such take is incidental to, and not for the purpose of, the carrying out of an otherwise lawful activity.
21.	LBVI-Habitat	Those riparian areas where there is a potential for least Bell's vireo to occur.
22.	LFRR-Habitat	Those areas where there is the potential for light-footed Ridgway's rail to occur.
23.	Listed Species	Species that are listed as endangered species or threatened species under the ESA.
24.	LMS-Habitat	Areas where there is potential for Laguna Mountains skipper to occur on Palomar Mountain or designated critical habitat with PBFs in the Laguna Mountain range of the Peninsular Ranges System in eastern San Diego County, southern California.
25.	Major Amendment	Those changes to the HCP Amendment that cannot be made administratively and instead require formal amendment of the permit itself, as discussed in Section 6.5.1.3 of the HCP Amendment.

No.	Term	Definition
26.	Mapped Areas	Those areas specifically delineated or designated as providing the necessary components for a species to persist and recover and with the potential for a species to occur (e.g., critical habitat, preserve areas). USFWS will update Mapped Areas annually.
27.	Minor Amendment	Those changes to the HCP Amendment that can be made administratively without formal amendment of the permit itself, as discussed in Section 6.5.1.2 of the HCP Amendment.
28.	Mitigation Credits	A unit of trade used to offset habitat impacts that occur in the PIZ or Plan Area. Each Mitigation Credit typically represents 1 acre of habitat that has been preserved in perpetuity.
29.	Modeled Habitat	The best publicly available data to predict species habitat in the Plan Area. This model is a representation of an area where a species is likely to be found based on the quality, suitability, and occupancy of a particular area.
30.	Natural Resources Staff	The staff within the Environmental Services Department at SDG&E that are assigned to the Natural Resources Group.
31.	NCCP Act or NCCPA	The Natural Community Conservation Planning Act (California Fish and Game Code Section 2800, <i>et seq.</i>).
32.	New Construction	Construction of new electric transmission and distribution infrastructure including substations and switching stations; gas transmission and distribution pipelines; energy generation and storage facilities; or other new electric, gas, energy generation or storage facilities that may be planned, sited, or routed in the Plan Area, either within or outside the PIZ.
33.	No Surprises	The rule promulgated by USFWS and currently codified at 50 C.F.R. 17.3, 1722(6)(5) and 17.32(6)(5) that extends certain assurances regarding future mitigation obligations to permittees obtaining incidental take permits under Section 10(a) of the ESA.
34.	NPPA	The California Native Plant Protection Act (California Fish and Game Code Section 1900, <i>et seq.</i>)

No.	Term	Definition
35.	Operational Protocols or OP	Those policies and procedures detailed in Section 5.1 of the HCP Amendment that are designed to avoid, minimize, and mitigate impacts from Activities by providing an environmentally sensitive approach to SDG&E's day-to-day operations, including Covered Activities (i.e., traditional utility construction, maintenance, and repair).
36.	PBFs	The physical or biological features that may include space for individual and population growth and for normal behavior; cover or shelter; food, water, air, light, minerals, or other nutritional or physiological requirements; sites for breeding and rearing offspring; and habitats that are protected from disturbances or are representative of the historical geographical and ecological distributions of a species.
37.	Probable Impact Zone (PIZ)	The portion of SDG&E's service area around existing SDG&E Facilities where impacts are reasonably likely to occur. More specifically, the PIZ widths and corridors are measured from the center of infrastructure and represent the maximum area within which Covered Activities at these Facilities would occur. The PIZ captures all components associated with linear infrastructure, such as poles and towers, guy wires, and gates.
38.	Plan Area	The 4,100-square-mile service area within which SDG&E supplies power to a population of business and residential accounts and in which may conduct Covered Activities in accordance with the HCP Amendment. The Plan Area is synonymous with SDG&E's service area and is depicted on the map attached to the HCP Amendment as Figure 1.
39.	PPM-Habitat	Those pacific pocket mouse Mapped Areas designated by Marine Corps Base Camp Pendleton (MCBCP) in coordination with USFWS, and any other pacific pocket mouse occupied areas found outside of MCBCP in the future.
40.	Pre-Activity Survey	The field survey described in Section 5.1.3 that is completed prior to the start of Covered Activities as outlined in Section 6.3.2 occurring within or adjacent to habitat with potential to support Covered Species.

No.	Term	Definition
41.	Pre-Activity Survey Report or PSR	The report that memorializes the findings of a Pre-Activity Survey; prescribes avoidance and minimization measures (i.e., applicable Operational Protocols and Species-Specific Protocols); and records mitigation required to offset the impacts, if any, of a Covered Activity.
42.	Preserve	Conserved lands within the Plan Area in a current pending or adopted regional habitat conservation plan, or other local, state, or federal conservation plan that are legally protected from future development (e.g., via conservation or open space easement, through acquisition, deed restriction, or other methods) for the purpose of protecting natural habitat, species, and open space and/or that are actively managed to protect the open space or natural resources into the future.
43.	Proposed Preserve	Those lands within the Plan Area that are not yet legally conserved but are planned for conservation in a current pending or adopted regional plan, or other local, state, or federal conservation plan.
44.	R/E Program	The habitat Restoration and Enhancement Program detailed in Section 5.2 of the HCP Amendment.
45.	Repetitive Fire	A fire that (1) occurs in the same location as a previous fire; (2) occurs between 3 to 10 years after the initial fire; (3) burns at least 50% of any future mitigation lands; or (4) is a single fire so intense or of such severity that it would be unlikely for the area to recover to the original vegetation community.
46.	Road Rut	Man-made depressions or grooves worn into a road or path by travel and other seasonal depressions that are not vernal pools, but which may contain wildlife associated with vernal pools, such as fairy shrimp or western spadefoot toad, but not vernal pool plant indicator species.
47.	SKR-Habitat	Those areas where there is a potential for Stephens' kangaroo rat to occur.
48.	SNPL-Habitat	Those areas where there is a potential for western snowy plover to occur or in designated critical habitat with PBFs.

No.	Term	Definition
49.	Species-Specific Protocols	Those measures detailed in Section 5.1.13 of the HCP Amendment that are designed to avoid, minimize, and mitigate impacts from Covered Activities to 21 specifically identified Covered Species.
50.	Subregional Plan	The 1995 San Diego Gas and Electric Company habitat Conservation Plan and Natural Community Conservation Plan of this date herewith entered into by and among USFWS, CDFW, and SDG&E and all the documents and instruments specifically attached thereto or incorporated therein by reference.
51.	SWFL-Habitat	Those areas where there is a potential for southwestern willow flycatcher to occur or in designated critical habitat with PBFs.
52.	Take	To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. 16 U.S.C. Section 1538(a)(1). As used herein, “take” is limited to incidental take under the ESA.
53.	Target Condition	The condition of a site when it has been restored to pre-impact or pre-project conditions, as defined by the success standards in Section 5.2.2.4.
54.	Thinning	The selective removal of parts of native vegetation to increase space between plants used as a means to reduce wildfire fuels loads.
55.	TRBL-Habitat	Those areas where there is a potential for tricolored blackbird to occur.
56.	Treatment Areas	Those locations where native thinning is conducted pursuant to SDG&E’s Wildfire Fuels Management Program.
57.	Unforeseen Circumstances	Unforeseen Circumstances is defined in 50 C.F.R. 17.3 and means changes in circumstances affecting a species or geographic area covered by a conservation plan that could not reasonably have been anticipated by SDG&E or USFWS and CDFW.
58.	Vernal Pool Clarification	The Minor Amendment granted by the Wildlife Agencies to SDG&E on July 26, 2004, regarding vernal pool resources located both on and off SDG&E access roads.

No.	Term	Definition
59.	Vernal Pool Complex	A collection of vernal pools that occur in proximity, on the same soil series and are typically biogeographically and hydrologically connected.
60.	Vernal Pool Habitat	The term vernal pool habitat includes vernal pools, vernal pool complexes, and Vernal Pool Watersheds as more fully described in Section 5.1.11.
61.	Vernal Pool Watershed	A topographically defined catchment area from which surface water flows to a vernal pool.
62.	Vernal Pools	Seasonal, depression-type wetlands that result from a unique set of physical parameters and support a specific biological assemblage of plant and animal species. Functional vernal pool ecosystems form under specific physical conditions when small, shallow depressions collect precipitation to create a seasonally perched water table.
63.	Weed	For the purposes of the R/E Program, and per the Cal-IPC, the term weed is defined as a plant that is not native to an environment and, once introduced, establishes, quickly reproduces and spreads, and causes harm to the environment, economy, or humans.
64.	Wildfire Fuels Management	The suite of Covered Activities used by SDG&E as part of its Wildfire Fuels Management Program to reduce fire fuel load around distribution and transmission lines within the SDG&E service area.
65.	Wildfire Fuels Management Program	A wildfire fuels management effort that SDG&E launched as a pilot program in 2019.
66.	Wildlife Agencies	USFWS and CDFW collectively.
67.	WYBC-Habitat	Those areas where there is a potential for western yellow-billed cuckoo to occur.

LETTER TO READERS



May 2022

To: Readers of this Document

As in 1995, many things continue to make San Diego a unique and desirable place to live. And, for the past 26 years, as the region has grown, SDG&E has successfully supported that growth while maintaining our energy infrastructure in an environmentally responsible way using the San Diego Gas & Electric Subregional Natural Community Conservation Plan and Habitat Conservation Plan (Subregional Plan).

Looking to the future, we must fully recognize that catastrophic wildfires are an immediate threat to California. Indeed, 15 of the 20 largest wildfires in California history have occurred since 2000, and 10 of the most costly and destructive fires to life and property in the state have occurred since 2015. In 2020 alone, the August Complex Fire burned over 1 million acres, making it the largest wildfire in California history. Five of the six largest fires in California history occurred in 2020. These wildfires caused deaths, and destroyed property and natural resources.

The looming threat of wildfire is particularly evident to SDG&E because approximately 64% of our service area is in "High Fire Threat Districts" (HFTDs). The HFTD consists of Tier 2 areas, "where there is an elevated risk for destructive utility associated wildfires," and Tier 3 areas, "where there is an extreme risk for destructive utility associated wildfires." SDG&E's service area also experiences Santa Ana winds that have been

directly linked to some of the largest and most destructive wildfires in southern California. Santa Ana winds, coupled with other weather conditions, including drought conditions, dry fuels, and the impacts of climate change, have all contributed to the risk of catastrophic wildfires in our service area.

In recent years, SDG&E has focused significant resources towards maintaining our electric distribution and transmission line system to prevent such wildfires. Our efforts to reduce the risk of wildfire and enhance grid resilience began in 2007, after San Diego experienced some of the most destructive wildfires in the county's history. This first involved establishing a company-wide fire-awareness culture and prioritizing safe work practices. We hired subject matter experts in firefighting, fire science, and meteorology, who have developed and implemented programs to enhance situational awareness, which has increased our ability to monitor and understand the wildfire environment. This improved level of understanding led to changes in operational procedures to reduce the potential for ignitions associated with utility infrastructure during periods of elevated fire potential.

In addition to SDG&E's efforts to harden the electric grid and create a resilient, safe, and reliable electric distribution and transmission system, we also continue our pipeline modernization and upgrades for the natural gas pipeline system to ensure system resiliency. We continue to invest in our pipeline system by testing, replacing, and upgrading gas pipeline infrastructure throughout the SDG&E service area in the same manner we use to operate and maintain the electrical grid. The Subregional Plan has allowed us to undertake these necessary activities in habitat areas while avoiding, minimizing, and mitigating for impacts to sensitive species in the areas where our pipeline Rights-of-Way occur.

Although SDG&E's extraordinary fire safety activities since 2007 have aimed to greatly reduce wildfire risk in our service area, they have also modified more habitat than was originally contemplated in 1995. The United States Fish & Wildlife Service (USFWS) incidental take permit issued with the Subregional Plan authorized a total of 400 acres of habitat modification from Covered Activities before requiring an amendment. We are nearing that limit. Accordingly, as detailed herein, the HCP Amendment seeks a 400-acre increase to the plan's permanent impact maximum; it also seeks authorization to temporarily impact 210 acres, and authorization to impact an additional 210 acres for Wildfire Fuels Management work, which prioritizes removing nonnative and dead plants to reduce fire risk. The HCP Amendment also updates the Covered Species list, provides additional data for each Covered Species (see Appendix A, Covered Species Analysis), and makes further clarifications and improvements to support our request.

The long-term HCP Amendment will maintain and bolster the robust avoidance and minimization measures for species that SDG&E has been successfully implementing for more than 26 years under the Subregional Plan. Today, unlike in 1995, our infrastructure is largely in place, so future impacts will principally be limited to those involved in fire hardening and other operation and maintenance of our existing system. These impacts will likely occur gradually and in small amounts across our service area

over decades and will be constrained by strict Operational and Species-Specific Protocols designed to protect wildlife, plants, and habitat.

While the mix of work we anticipate performing may have changed, the primary purpose and ultimate objective detailed in the HCP Amendment have not changed from the original Subregional Plan. Our HCP Amendment continues to prioritize avoiding impacts entirely and minimizing any impact our activities may have. It will also allow SDG&E to continue its critical wildfire safety work without interruption. This work will positively contribute to the preservation and enhancement of San Diego's natural resources. In addition to helping avoid wildfires from utility lines, our fire safety work will help ensure that resilient native chaparral ecosystems are preserved by clearing flammable invasive species that often colonize chaparral stands recovering from fire.

Our continued focus on environmental stewardship aligns with the goals of our recently released Sustainability Strategy, *Building a Better Future*, which details our climate change-conscious goals in environmental stewardship, clean transportation, grid modernization, community engagement, and company operations. Among other things, we aim to plant no fewer than 10,000 trees annually, electrify 100% of our light duty fleet by 2030, and operate a 100% zero emission vehicle fleet by 2040.

The HCP Amendment will also continue to allow for a more efficient regulatory review process of activities needed to maintain, improve, and fire harden SDG&E's critical infrastructure while continuing the broad biological goals that direct us to avoid and minimize impacts to Covered Species. The HCP Amendment also summarizes how we will mitigate impacts to Covered Species and their habitat when avoidance and minimization is impossible or impractical.

These broad, guiding principles, based on the conservation needs of covered resources, are accompanied by, and effectuated through, specific and measurable conservation targets or actions. In short, these biological objectives clearly state desired results that are measurable and achievable within a given timeframe. For instance, in support of our goal of conducting our activities in an environmentally sensitive manner to avoid and minimize impacts to species and their habitat, SDG&E will (i) provide comprehensive annual training to all SDG&E personnel working within natural habitats (Section 5.1.2); (ii) provide a process to ensure Covered Activities comply with the HCP Amendment (Section 5.1.3); and (iii) implement Species-Specific Protocols as needed to avoid and minimize impacts to species (Section 5.1.13). To achieve our goal of maintaining habitat quality for Covered Species, SDG&E will implement Operational and Species-Specific Protocols, described in Section 5.1 of the HCP Amendment, to minimize impacts to habitat in the vicinity of Covered Activities, and implement a robust habitat restoration and enhancement program as described in Section 5.2 to restore temporary impact areas within 5 years. The HCP Amendment also provides a process to evaluate and restore certain access roads. And to meet our goal of contributing to the network of permanently protected and managed lands in our service area that support species and their habitat, we also provide sufficient mitigation for unavoidable permanent impacts to species covered by the HCP Amendment or their habitat through

conveyance of land to third-party–approved conservation land managers or provide funding for programs/in-lieu fees (Section 5.5).

Finally, based on input from USFWS, we have reorganized and updated the language of the HCP Amendment to improve readability. This effort to modernize and improve the clarity of the HCP Amendment did not substantively change our overall approach to implementing the plan or how SDG&E would continue to mitigate its impacts. At bottom, the HCP Amendment allows impacts to less than 0.04% of our service area, updates the Covered Species list, and adds a host of robust Species-Specific Protocols and a process for providing species-specific compensatory mitigation. We at SDG&E are confident that the HCP Amendment will continue our successful conservation strategy, fulfill our environmental objectives, and remain good for business.

Brittany Applestein Syz
Director Environmental Services and Sustainability

Executive Summary

San Diego Gas & Electric Company (SDG&E) is proposing a Habitat Conservation Plan (HCP) Amendment to its 1995 Subregional Natural Community Conservation Plan/Habitat Conservation Plan (Subregional Plan) to the United States Fish & Wildlife Service (USFWS) (HCP Amendment). The HCP Amendment is designed to support the continuation of Covered Activities covered by Endangered Species Act (ESA) Permit No. PRT-809637, which is a multi-species incidental take permit (ITP) issued by USFWS to SDG&E in December 1995. That permit authorized the “incidental take of 110 species in San Diego County and portions of Orange and Riverside County, California.” See ITP No. PRT-809637. It was subject to compliance with and implementation of the Subregional Plan. *Id.* ¶ F. The Subregional Plan, in turn, “allow[ed] for up to 400 acres of impacts in natural areas before requiring a Plan amendment.” Subregional Plan at vi. Implementation of the HCP Amendment may result in 400 acres of permanent impacts, 210 acres of temporary impacts, and 210 acres of Wildfire Fuels Management impacts to habitat supporting federally listed and other Covered Species. The impacts anticipated are in addition to the 400 acres of habitat impacts authorized and mitigated under ESA Permit No. PRT-809637. The original ITP for the Subregional Plan was set to expire in 2050, and the amended ITP is anticipated to have the same expiration date.

In approximately 2017, SDG&E began working with the Wildlife Agencies on a joint Subregional Natural Community Conservation Plan (NCCP) and HCP Amendment (joint document) with the goal of allowing each agency to use the joint document for its respective environmental review (California Environmental Quality Act [CEQA] review for the California Department of Fish & Wildlife [CDFW], National Environmental Policy Act [NEPA] review for USFWS) and its respective approval and amended permit issuance. After years of extensive collaboration on the development of the joint document and recognizing that the environmental review timelines for each agency may not align, SDG&E and the Wildlife Agencies agreed in 2021 to separate the joint document into the HCP Amendment and a separate NCCP Amendment, to allow each agency latitude to conduct its required environmental review on its own, independent timeline.

USFWS has received the HCP Amendment, which will be circulated for public review as part of its NEPA environmental review in 2022. CDFW has received a matching NCCP Amendment that SDG&E anticipates will be finalized and circulated for public review as part of CDFW’s CEQA review in 2022. SDG&E further anticipates implementing the HCP Amendment when it is first approved by USFWS. SDG&E anticipates that both Plans will ultimately be approved, at which time SDG&E would implement the HCP Amendment and NCCP Amendment as a single plan over the remaining term of the Subregional Plan.

Background

Both the federal ESA, 15 United States Code (U.S.C.) Section 1531, *et seq.* and California Endangered Species Act, California Fish and Game Code Section 2050, *et seq.* (CESA) prohibit the “take” of protected species without permission. CESA defines “take” as to “[h]unt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” California Fish and Game Code Section 86. “Take” is defined under the ESA as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” 16 U.S.C. Section 1538(a)(1). USFWS regulations define “harm” as “an act which actually kills or injures wildlife [including] significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, and sheltering.” Title 50 of the Code of Federal Regulations (C.F.R.) Section 17.3.

Under federal law, until 1982, nonfederal entities had no means to acquire incidental take authorization. Private landowners and state agencies thus risked violating the ESA no matter how carefully they undertook otherwise lawful activities. This dilemma led Congress to amend Section 10 of the ESA in 1982 to authorize the issuance of an ITP to a nonfederal project proponent upon completion of an approved conservation plan (now called a habitat conservation plan or HCP).

In cases where federal land, funding, or authorization is not required for an action by a nonfederal entity, USFWS may issue permits through the Section 10 process for acts otherwise in violation of ESA Section 9 to enhance the propagation or survival of any affected species or for the taking of any species incidental to an otherwise lawful activity. Private landowners, corporations, state agencies, local agencies, and other nonfederal entities may therefore obtain a Section 10(a)(1)(B) ITP for take of federally listed fish and wildlife species that is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.”

With the proposed and subsequent listing of the coastal California gnatcatcher (*Poliioptila californica californica*) in 1993, as a federally threatened species, the ESA became a significant constraint to all forms of development in southern California, including the development of energy infrastructure. The state had previously enacted the Natural Community Conservation Planning Act (NCCPA) in 1991 as a tool to work with local communities to develop habitat conservation strategies to protect a wide variety of plants and animals, which included the coastal California gnatcatcher’s coastal sage scrub habitat. One of the goals of the NCCPA was to eliminate the need for future listings. If an NCCP is combined with an HCP, the same plan can provide the basis for issuance of federal endangered species Section 10 permits.

SDG&E saw the potential benefits offered by the NCCPA to the region’s resources and to SDG&E’s ability to reduce regulatory processes typically involved with the maintenance and expansion of a gas and electric energy system. Therefore, SDG&E launched into preparation of its Subregional Plan in the early 1990s.

The Subregional Plan was ultimately approved in 1995 and expires in 2050. In approving the Subregional Plan, USFWS found that it contained all elements required by ESA Section 10(a)(2)(A) and 50 C.F.R. 17.22(b)(1) and 17.32(b)(2). CDFW determined the Subregional Plan would “adequately mitigate[] impacts to endangered species,” and that with implementation of mitigation, “protect [covered] species from further degradation” by “minimiz[ing] and mitigat[ing] the impacts of the taking of the enumerated species (including, without limitation, the modification of their habitat).”

SDG&E has been successfully operating under the Subregional Plan since its issuance for the 2,245,800-acre permit boundary defined in 1995. The Subregional Plan has helped to create company awareness to operating and constructing Facilities in a manner that avoids or minimizes impacts to the natural communities and wildlife within the San Diego region. This Subregional Plan also defined how mitigation is accomplished for unavoidable impacts and initially allowed for up to 400 acres of impacts in natural areas before requiring a Plan Amendment. Between 2003 and 2007, the region began to experience more prolonged droughts and the frequency and severity of wildfire began to increase. SDG&E began to focus on mitigating the fire risk through hardening of the electric systems within the SDG&E service area. As a result of these increased wildfire safety efforts, SDG&E anticipates that the original impact authorization of 400 acres of habitat modification will not be adequate to continue supporting Covered Activities for the remainder of the Subregional Plan term (through 2050).

The HCP Amendment expands the 1995 Subregional Plan boundary to the entire 2,815,930-acre SDG&E service area (i.e., Plan Area) (see Figure 1); seeks authorization for an additional 400 acres of permanent impacts, 210 acres of temporary impacts, and 210 acres of Wildfire Fuels Management impacts to habitat; updates the Covered Species list based on coordination with USFWS; and adds new species-specific protections and a process for providing species-specific compensatory mitigation as appropriate. The HCP Amendment also includes a Covered Species Analysis (Appendix A), which updates ecological information on each Covered Species, including its current status within the region and known threats or pressures to the species’ continued survival, and analyzes potential impacts of Covered Activities on Covered Species and their habitat. SDG&E has also prepared an Eagle Conservation Plan (ECP; SDG&E 2021), appended to the HCP Amendment (Appendix B), which provides the information necessary to continue to include golden eagles and bald eagles as Covered Species under the HCP Amendment.

The Covered Species Analysis and ECP rely on locally developed analytical modeling data to predict anticipated effects of continued Covered Activities necessary to provide safe and reliable utility service in an environmentally sensitive manner to Covered Species within the region through 2050. The analysis explains the HCP Amendment’s conservation strategy to avoid, minimize, and mitigate impacts from Covered Activities and details additional Species-Specific Protocols to enhance current practices and further protect and conserve Covered Species. The HCP Amendment also reorganizes and updates the language of the amended plan to improve readability.

Overview of The HCP Amendment

The HCP Amendment includes the Covered Activities as defined in Section 2, provides estimates of impacts from Covered Activities, and defines the mitigation that may be required for the biological impacts of the installation, use, maintenance, and repair of the existing gas and electric system and typical expansions to that system. SDG&E is an electric and natural gas utility company subject to regulation established by the California Public Utilities Commission (CPUC) and the Federal Energy Regulatory Commission. As a regulated entity, Covered Activities are required and undertaken in conformance with applicable state and federal law and regulations and are necessary to provide adequate, reliable, and safe gas and electric service to the region. The HCP Amendment also covers biological impacts (within the boundaries of this Plan Area only) associated with new electric and gas distribution and transmission lines, including interconnections.

The Subregional Plan allowed up to 400 acres of impacts to habitat before requiring an amendment. Impacted areas may be home to one or more of the species covered by this Plan. To mitigate these impacts, the HCP Amendment carries forth several forms of mitigation from the Subregional Plan, while adding and updating others, including:

- The most important mitigation measure is avoiding impacts whenever possible. To accomplish this, Operational Protocols for working in the field have been developed. The 61 Operational Protocols approved in 1995 are listed in Section 5 of the HCP Amendment. An additional eight Operational Protocols specific to vernal pools were added in 2004. The HCP Amendment provides updates to the original Operational Protocols and Vernal Pool Protocols and adds additional Species-Specific Protocols to further protect and conserve Covered Species. In addition, field crews attend a series of ongoing classes on how to conduct Covered Activities and operate construction and maintenance equipment in environmentally sensitive areas.
- As mitigation for the 400 acres of habitat modification originally authorized by the Subregional Plan, certain fee-owned Rights-of-Way (ROW) were made available for use as wildlife corridors to connect the region's conservation areas. SDG&E and CDFW have been working together to establish conservation easements over these corridors to memorialize the agreement to limit but not preclude use within these ROW. Additional opportunities to establish wildlife corridor easements over fee-owned ROW to support wildlife corridor connectivity will be considered throughout the term of the HCP Amendment. These efforts, however, should not be considered as an offset for future impacts beyond the original 400 acres.
- Within the Plan Area, SDG&E uses and maintains a widespread system of roads to access SDG&E Facilities. In certain areas, SDG&E access roads may be close to road networks maintained by other entities, including for example, municipalities, private property owners, and/or federal and/or state agencies. Therefore the potential exists that, in the Plan Area, certain SDG&E access roads could potentially be re-aligned or removed entirely to improve local biological resources without sacrificing safe and reliable access to SDG&E Facilities. There is also the potential

that SDG&E no longer needs certain existing access roads for Facility maintenance; therefore, these roads, if any, may also be re-aligned or removed entirely without sacrificing SDG&E operations. Accordingly, when SDG&E receives reports or other concerns about roads, including for example, on Del Mar Mesa, it will work in coordination with the Wildlife Agencies and the landowner (if applicable) to review and address the concerns regarding existing access to SDG&E Facilities. SDG&E may also review the continuing functionality of any of its existing access roads at its discretion. Any SDG&E access road that SDG&E determines is unnecessary for safe and reliable access to its Facilities will be removed and restored by SDG&E or a third party.

- Mitigation Credits of approximately 240 acres were established upon commencement of the Subregional Plan in 1995. SDG&E maintains an accounting of all mitigation and conservation credits and these Mitigation bank accounts are debited to mitigate for actual impacts as projects are realized. The Wildlife Agencies review and concur with SDG&E's assessment of the extent and quality of any impact. As needed, the Mitigation Credits are replenished.
- Restoration and enhancement of impacted areas are also available as mitigation measures, sometimes instead of debits to the Mitigation banks, and other times in addition to such debits.

The benefits of the HCP Amendment to SDG&E are that the project-specific ITPs would not typically be required by the ESA once the HCP Amendment is authorized. USFWS will still monitor projects, evaluate impacts, and concur with mitigation, but in a much more streamlined process. The HCP Amendment sets up a framework for USFWS to fulfill its regulatory responsibilities in an efficient manner and provides SDG&E with certainty over required mitigation.

Several minor amendments and clarification have been made to the Subregional Plan since its issuance in 1995. Those administrative processes are summarized below.

- November 7, 2002 – USFWS and SDG&E settlement agreement regarding Pacific pocket mouse (*Perognathus longimembris pacificus*), which identified additional notification requirements and mapping prior to work within known Pacific pocket mouse areas on federal lands.
- June 4, 2004 – USFWS issued a clarification letter to SDG&E documenting that the Subregional Plan provides incidental take coverage for all Covered Activities occurring in the Subregional Plan Area on both federal and non-federal lands.
- July 26, 2004 – The Wildlife Agencies granted a minor amendment to SDG&E regarding vernal pool resources located both on and off SDG&E access roads (Vernal Pool Clarification). The Vernal Pool Clarification establishes clear standards for avoidance, minimization, and mitigation of permanent and temporary impacts. Eight additional Operation Protocols, specific to vernal pools, were established with approval of this amendment.

- January 6, 2006 – The Wildlife Agencies concurred on a request to assign SDG&E’s rights, interests, and/or obligation in the Subregional Plan to Southern California Gas (affiliated utility also owned by Sempra Energy) for the joint Southern California Gas and SDG&E operations and maintenance (O&M) of Natural Gas Pipeline 1026.
- April 9, 2015 – The Wildlife Agencies granted a minor amendment to SDG&E revising the required Annual Report submittal date from November 1 (Section 9.2 of the Implementing Agreement) to March 31.

In addition, on August 20, 2007, USFWS issued a permit for the Low-Effect Habitat Conservation Plan for the issuance of an ITP under Section 10(a)(1)(b) of the Endangered Species Act for the Federally Endangered Quino Checkerspot Butterfly for the San Diego Gas & Electric Company (Quino LEHCP) (SDG&E 2007). The purpose of the Quino LEHCP is to minimize and mitigate the effects of SDG&E’s Covered Activities on the Quino checkerspot butterfly (*Euphydryas editha quino*) over the 50-year term of the USFWS permit.

Then on March 15, 2017, USFWS issued a permit for the Low-Effect Habitat Conservation Plan for Areas Where San Diego Gas & Electric Company Conducts Its Routine Utility Operations & Maintenance Activities (2017 LEHCP) (SDG&E 2017). USFWS’s permit for the 2017 LEHCP authorized an additional 60 acres of impacts to habitat supporting 37 federally listed and other Covered Species over a 5-year permit term. SDG&E prepared the 2017 LEHCP to ensure that it may continue planning and implementing its routine O&M while it works with USFWS to develop the HCP Amendment. Under the 2017 LEHCP, SDG&E would continue to apply all of the conservation efforts, mitigation measures, and operational protocols currently implemented under its Subregional Plan and the Implementing Agreement when addressing the Covered Activities covered by the 2017 LEHCP. The 60 acres of impacts anticipated under the 2017 LEHCP are in addition to the 400 acres of habitat modification authorized and mitigated under the USFWS 1995 permit. Once USFWS authorizes the additional 400 acres of permanent impacts, 210 acres of temporary impacts, and 210 acres of Wildfire Fuels Management impacts to habitat as requested in the HCP Amendment, the 2017 LEHCP and any unused impact allowance under it will be voided and superseded by the HCP Amendment. Projects initiated under the 2017 LEHCP would continue to rely on the coverage as documented in the Pre-activity Survey Report (PSR) until the project has been completed.

As noted above, the HCP Amendment expands the 1995 Subregional Plan boundary to the entire 2,815,930-acre SDG&E service area (i.e., Plan Area) and seeks an additional 400 acres of permanent habitat modification impacts, 210 acres of temporary habitat impacts, and 210 acres of Wildfire Fuels Management impacts. The HCP Amendment also establishes numerous Vernal Pool Protocols (adapted from the 2004 amendment above) and Species-Specific Protocols in addition to the aforementioned Operational Protocols. Additionally, the HCP Amendment clarifies and expands the restoration Covered Activities that SDG&E can implement in order to successfully restore temporary impacts. Specifically, temporary impacts that are successfully restored, as

defined by the success criteria of Section 5.2, will not require that any Mitigation Credits be withdrawn from the Mitigation bank.

Future Project-Specific Environmental Review under California Environmental Quality Act or National Environmental Policy Act

Projects currently subject to permits from the CPUC, California Coastal Commission, California Energy Commission, State Lands Commission, and several other state and federal agencies will continue to be subject to those applicable permits. Therefore, many projects will be subject to the CEQA and NEPA reviews as described in Section 1.4.3. It is intended that the subsequent environmental reviews use the HCP Amendment to evaluate the impacts to Covered Species and their habitat.

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1 Introduction

San Diego Gas & Electric Company (SDG&E) is a California investor-owned utility providing natural gas, electricity, and other services to customers within its service area, which includes San Diego County and portions of Orange and Riverside Counties (see Figure 1 – Updated 2022). SDG&E’s ability to provide these services depends upon the installation, operation, maintenance, and repair of an evolving array of utility Facilities located throughout its service area and, to a limited extent, beyond. For example, SDG&E’s electric and natural gas service is provided by means of two separate systems. The electric system includes electric generating plants, electric transmission lines, electric substations, and an electric distribution network (see Figure 2 – Updated 2022). The natural gas system includes compressor stations, transmission pipelines, regulator stations, and distribution pipelines (see Figure 3 – Updated 2022). Regular maintenance and repair of these systems are performed to prolong their useful life and to ensure adequate, safe, and reliable service. The location and type of new Facilities are dependent upon the service demands of SDG&E’s customer load centers while existing Facilities are not. Both the electric and natural gas systems are subject to the regulatory authority and requirements of the California Public Utilities Commission (CPUC), the California Energy Commission, and various other federal and state agencies.

Over the past several decades, the natural lands and wildlife habitats in San Diego County, Orange County, and Riverside County (Moreno Compressor Station only) have been subjected to increasing pressures from various land development activities. The Natural Community Conservation Planning Act, California Fish and Game Code Section 2800, *et seq.* (NCCPA), authorizing comprehensive management and conservation of habitat and multiple wildlife species, is California’s response to the ever increasing numbers of species protected and being considered for protection under the California Endangered Species Act, California Fish and Game Code Section 2050, *et seq.* (CESA). In recognizing the need to develop a comprehensive management plan for the sensitive biological resources of the region, agency wildlife biologists, consulting and research biologists, landowners, businesses, and representatives of conservation groups have proposed a conservation strategy that includes the establishment of a habitat preserve system intended to ensure long-term habitat survival and individual species viability.

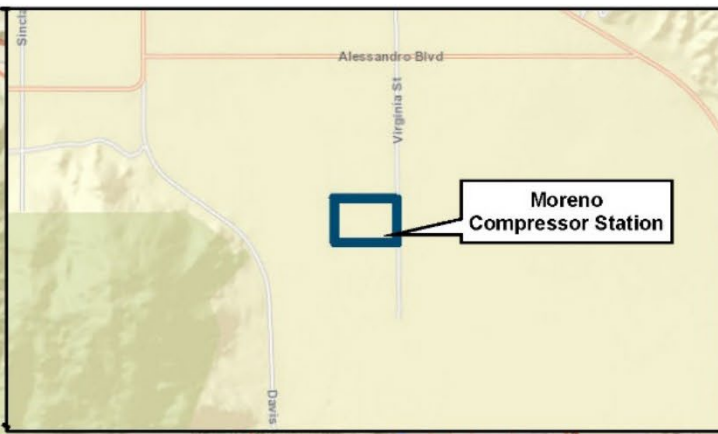
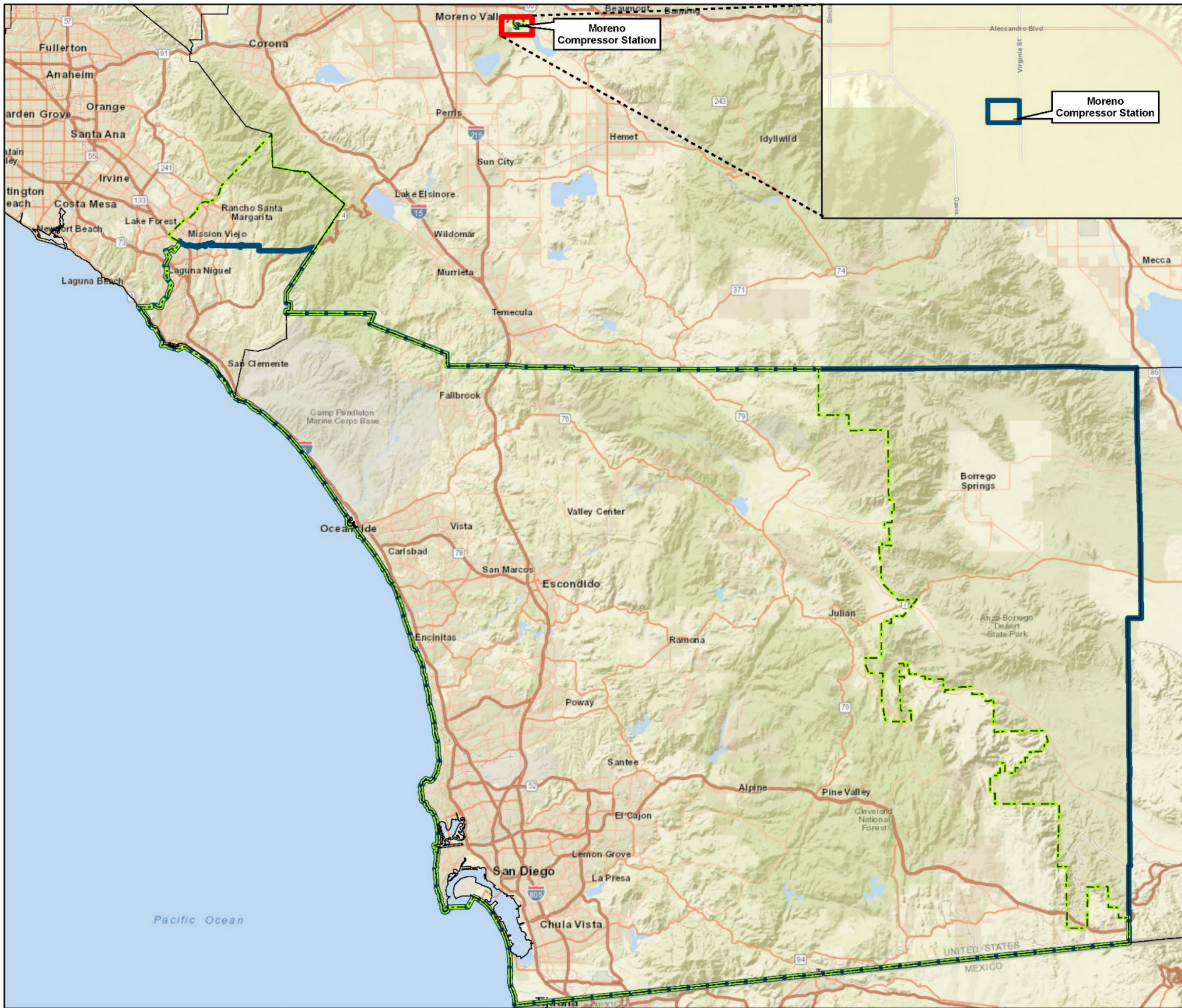
As a regulated utility, Covered Activities are required and undertaken in conformance with applicable state and federal law and regulations and are necessary to provide adequate, reliable, and safe gas and electric service to the region. Nonetheless, Covered Activities may impact certain sensitive plant and animal species or their habitat, which may include species listed as threatened or endangered by the federal Endangered Species Act, 15 United States Code (U.S.C.) Section 1531, *et seq.* (ESA) or the CESA. To ensure implementation of appropriate avoidance, minimization, or mitigation measures for these potential impacts, SDG&E prepared this 2022 HCP

Amendment to the Subregional Plan (HCP Amendment) following the multiple species and habitat conservation planning approach authorized by the ESA. The intent of the HCP Amendment is to identify SDG&E's existing and prospective Covered Activities as a regulated utility, which may have an impact upon Covered Species or their habitat and to define those measures that SDG&E will employ to avoid, minimize, or mitigate any such impacts to the maximum extent practicable. SDG&E's plan is a significant part of the overall regional conservation planning strategy for two reasons: (1) It will provide a net benefit in habitat values by providing foundational resource protection; and (2) It can be used by other regional public service providers as a model.

In 2017, SDG&E began working with the Wildlife Agencies on a joint Subregional Natural Community Conservation Plan (NCCP) and HCP Amendment (joint document) with the goal of allowing each agency to use the joint document for its respective environmental review (California Environmental Quality Act [CEQA] review for the California Department of Fish & Wildlife [CDFW], National Environmental Policy Act [NEPA] review for United States Fish & Wildlife Service [USFWS]) and its respective approval and amended permit issuance. After extensive collaboration on the development of the joint document and recognizing that the environmental review timelines for each agency may not align, SDG&E and the Wildlife Agencies agreed in 2021 to separate the joint document into the HCP Amendment and a separate NCCP Amendment, to allow each agency latitude to conduct its required environmental review on its own, independent timeline.

USFWS has received the HCP Amendment, which will be circulated for public review as part of its NEPA environmental review; CDFW has received a matching NCCP Amendment that will be finalized and circulated for public review as part of its CEQA environmental review. SDG&E anticipates implementing the HCP Amendment when it is approved by USFWS. SDG&E further anticipates that the NCCP Amendment will ultimately be approved by CDFW, at which time SDG&E will implement both Amendments over the remaining term of the Subregional Plan.



Over the past two decades, a number of local governments have been working to develop comprehensive habitat and multi-species conservation plans within the boundaries of their respective jurisdictions, generally referred to as "regional conservation programs." Ultimately, a network of such plans has and will be implemented throughout much of the area, which will affect, or which may be affected by, Covered Activities and will be covered by SDG&E's HCP Amendment. Both SDG&E's HCP Amendment and the regional conservation programs will maximize the protection and conservation of wildlife and habitat by utilizing the comprehensive multi-species and habitat conservation approach. Section 5.4, Relation to Other Regional Habitat Conservation Programs and Preserves, has been updated to reflect the current status of San Diego County's regional planning efforts and boundaries. However, unlike the HCP Amendment, regional conservation programs otherwise address the unique municipal concerns of local government's interest in local land development and other land use activities with federal and state wildlife conservation mandates.

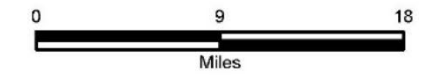


San Diego Gas & Electric HCP Amendment

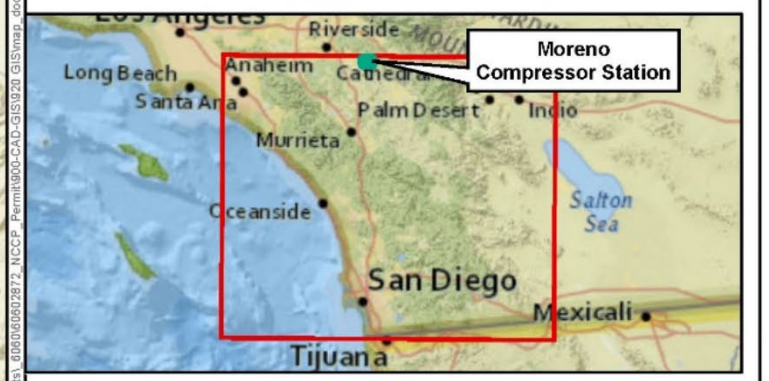
Plan Area
Figure 1

Legend

-  2022 Plan Area / SDG&E Service Area
-  1995 Subregional Plan Area






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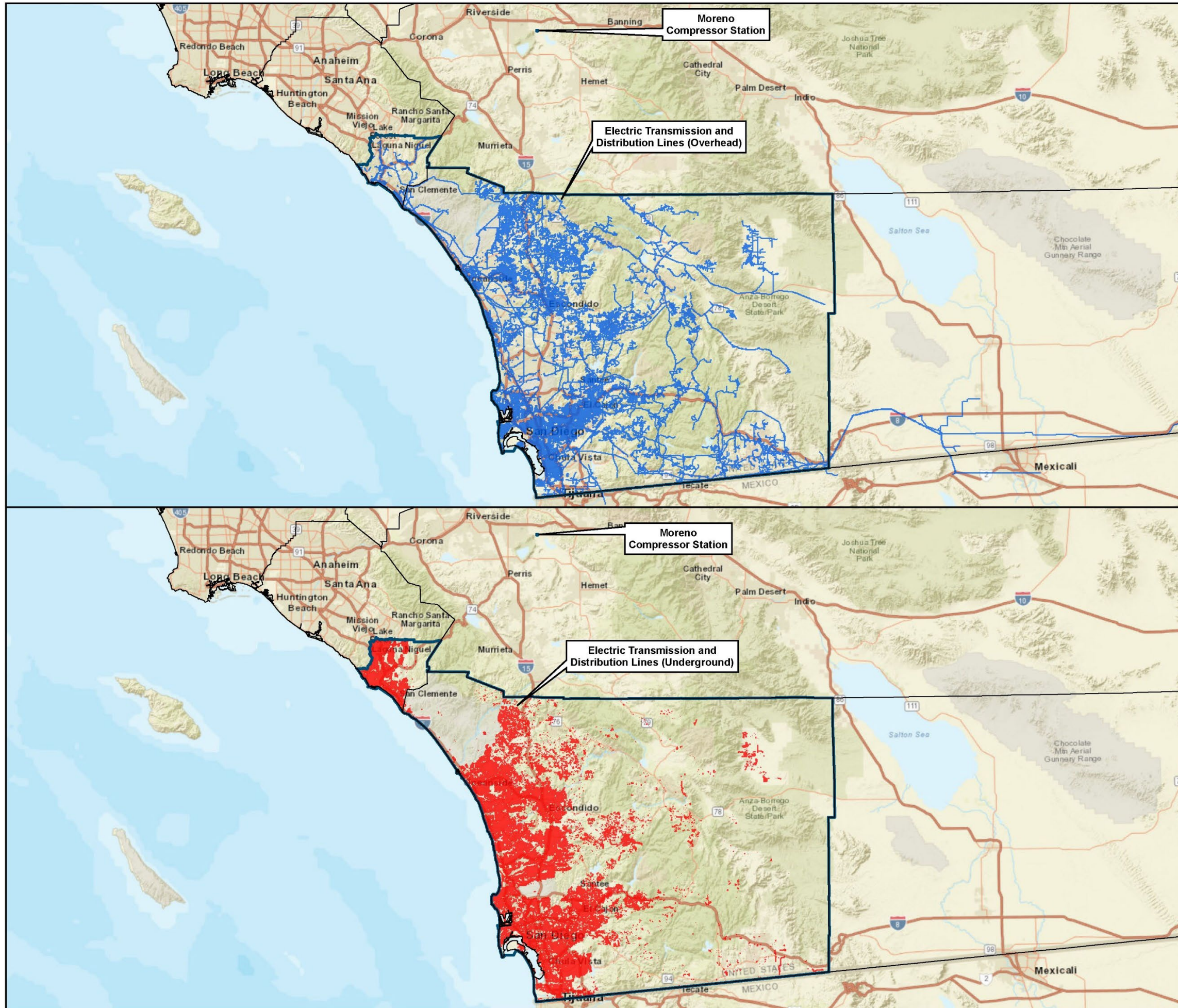
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San Diego Gas & Electric HCP Amendment SDG&E Electric Transmission System Figure 2

- Legend**
-  SDG&E Service Area
 -  Electric Transmission and Distribution Lines (Overhead)
 -  Electric Transmission and Distribution Lines (Underground)

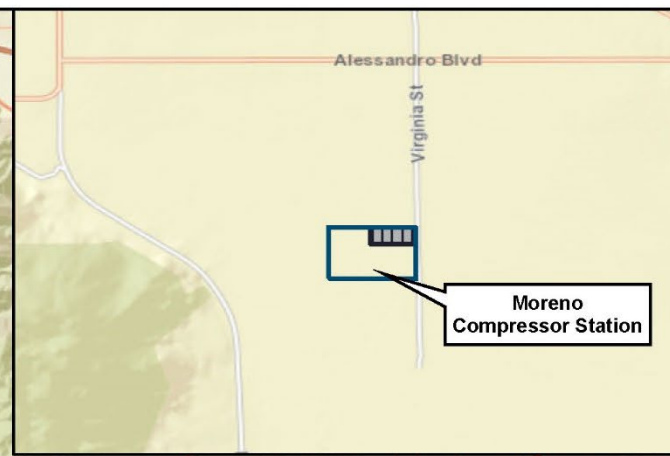
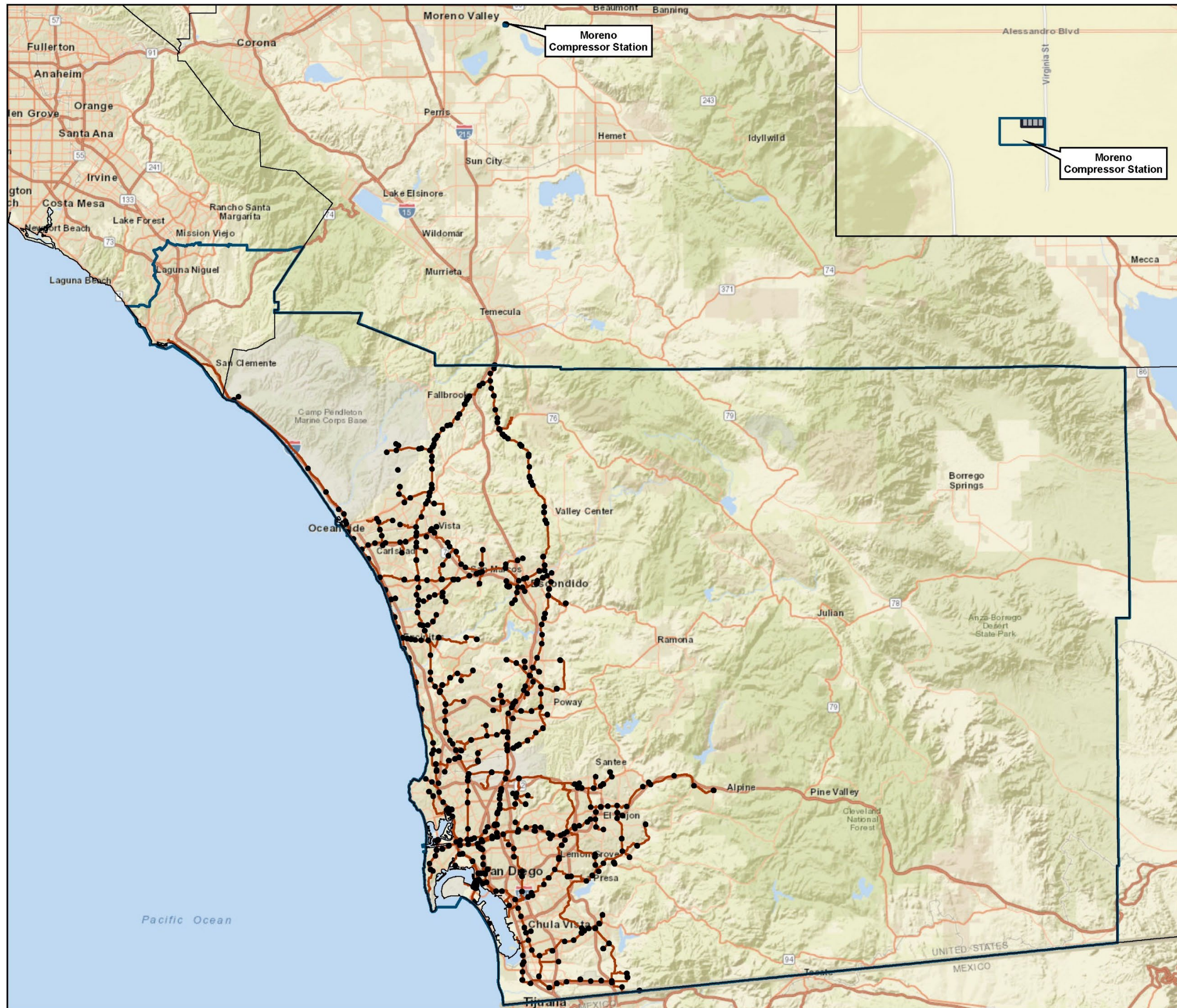


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San Diego Gas & Electric HCP Amendment SDG&E Natural Gas Transmission System Figure 3

- Legend**
- SDG&E Service Area
 - Gas Transmission and Distribution Lines
 - Gas Transmission and Distribution Structures
 - Gas Transmission and Distribution Structures at Moreno Compressor Station



Data Date: 03/13/2020 Version Date: 9/15/2021



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In contrast, SDG&E's utility operations span the jurisdictional boundaries of many local governments and provide benefits to the state as a whole. SDG&E's operations as a regulated utility are, therefore, matters of statewide concern. To ensure uniform, adequate, safe, and reliable operations for the benefit of the state's citizens, SDG&E's operations are regulated at the state level, primarily by the CPUC but also by various other state agencies, rather than at the local level. Accordingly, as with its Subregional Plan, the HCP Amendment balances Covered Activities that are necessary to meet the continuing demands of its customers for electric and gas service with federal and state wildlife conservation mandates.

The regional conservation programs support local permit applications filed by persons seeking to pursue projects falling within the regulatory authority of such local governments. However, because SDG&E's projects do not fall within the regulatory authority of local governments, none of the underlying regional conservation programs are applicable to address the particular and unique issues raised by regulated utilities. SDG&E resolved this problem in coordination with USFWS, by developing and by amending, as appropriate, its Subregional Plan to address Covered Activities and their potential impact upon Covered Species or their habitat throughout the area of its operations.

The HCP Amendment expands the 1995 HCP boundary and includes all Covered Activities conducted within the SDG&E service area described in Figure 1 (Plan Area – Updated 2022). The HCP Amendment will function independently of the regional conservation programs of local governments, which may also cover any part of the Plan Area. As with the Subregional Plan, the HCP Amendment continues to consider the objectives of such local regional conservation programs and endeavors to ensure that Covered Activities do not interfere with the proper functioning of such local regional conservation programs, as they become effective, to maximize the benefits to Covered Species and their habitat.

The HCP Amendment describes Covered Activities that have the potential to impact Covered Species or their habitat and that will be subject to the provisions of the HCP Amendment. The nature and extent of such potential impacts have been identified, together with those protective and conservation measures SDG&E will undertake to avoid such impacts and, where impacts are unavoidable, to minimize and mitigate the same. Protective and conservation measures will include (a) implementation of Operational Protocols and Species-Specific Protocols established in coordination with USFWS, (b) assisting USFWS to establish wildlife corridors that interconnect one habitat preserve or wildlife conservation area to another utilizing certain SDG&E Rights-of-Way (ROW), (c) causing the conveyance of valuable habitat land to a wildlife management agency for conservation purposes, and (d) abandoning and restoring SDG&E exclusive use access roads that are no longer required for safe and reliable access to Facilities.

1.1 Purpose

The purpose of the 1995 Subregional Plan was to establish and implement a long-term agreement between SDG&E and the Wildlife Agencies for the conservation of Covered Species and their habitat, while allowing SDG&E to develop, install, maintain, operate, and repair its Facilities, which are or become necessary to provide electric, natural gas, and other services to the customers served by SDG&E in the Subregional Plan Area. The purpose of the HCP Amendment is to continue that original intent through 2050.

Because of the evolving and continuing nature of SDG&E's operations in the 1995 Subregional Plan Area, SDG&E and the Wildlife Agencies determined that a comprehensive Multiple Species and Habitat Conservation Plan under Section 10(a)(1)(B) of the ESA and a Natural Community Conservation Plan (NCCP) under California Fish and Game Code Sections 2800–2835 would most effectively preserve and enhance Covered Species and their habitat. The long-term multi-species and habitat planning approach avoids the less effective, less efficient, and more costly process of obtaining federal and state ITPs on a species-by-species, project-by-project basis. The Subregional Plan was intended to meet the regulatory requirements of the Wildlife Agencies for their issuance of ESA and CESA/NCCPA ITPs for all Covered Species and their habitat.

The HCP Amendment (a) authorizes the incidental take of listed and other Covered Species (should they become listed) under the ESA, such take being incidental to the otherwise lawful Covered Activities of SDG&E, (b) minimizes and mitigates the impacts of such incidental take to the maximum extent practicable, (c) assures adequate funding for the implementation of the HCP Amendment, (d) authorizes incidental take that will not appreciably reduce the likelihood of the survival or recovery of any Listed Species or candidate species in the wild, (e) imposes measures to be implemented by SDG&E as requirements for, or conditions of, the authorization and permits granted herein, which will be met by SDG&E, (f) generally satisfies and fulfills all measures required by USFWS as being necessary or appropriate for the purposes of the HCP Amendment, including any measures determined necessary by the parties to deal with Unforeseen Circumstances, and (g) will provide for the conservation and protection of Covered Species and their habitat in the Plan Area, as if each of the species, subspecies, or populations was listed under the ESA. In addition, the HCP Amendment was drafted so that it (h) satisfies all regulatory requirements necessary for CDFW to issue an amended Management Authorization for Covered Species under California Fish and Game Code Section 2835, and NCCPA Section 2825, in anticipation of future action by CDFW to prepare an NCCP Amendment, which is currently in progress. SDG&E is also continuing to include golden eagles (*Aquila chrysaetos*) and bald eagles (*Haliaeetus leucocephalus*), which were Covered Species under the 1995 Subregional Plan, as Covered Species on the ITP for the HCP Amendment. See Appendix B (Eagle Conservation Plan [ECP]). Doing so will confer take authorization under the Bald and Golden Eagle Protection Act (BGEPA) without the need for a separate permit.

1.2 Historical Context

1.2.1 Natural Resource Protection

Impacts to Covered Species and their habitat are one of SDG&E's primary environmental concerns associated with its utility operations. The area of southern California that includes the Plan Area contains the highest diversity of plant and animal life in the continental United States. As a result of the rapid pace of urbanization in the last half of the 20th century, SDG&E's Plan Area also has the highest number of plants and animals in the continental United States that have become protected or are proposed for protection under the ESA or CESA.

In the absence of multi-species and habitat conservation guidelines, continued urbanization and other land uses pose significant risks of extirpation or extinction of Covered Species. SDG&E's implementation of Operational Protocols and Species-Specific Protocols to avoid or minimize impacts to natural resources is a major focus of the HCP Amendment.

1.2.2 Land Use Planning

Several profound differences exist between the nature and extent of impacts to Covered Species or their habitat caused by agricultural and typical urban development versus those caused by the operation of a gas and electric utility company like SDG&E. Agricultural and urban development usually occurs on established parcels of land with generally permanent impacts to Covered Species and their habitat. Agricultural and urban development occurs in checkerboard fashion over the available land. With some limited exceptions (e.g., the infrequent installation of electrical substations or natural gas regulator stations), most utility projects are linear in nature requiring limited grading; therefore, impacts upon Covered Species and their habitat caused by the operations of an electric and gas utility company like SDG&E are avoided entirely or are only minimal or temporary. The potential exists, however, for slight habitat fragmentation by virtue of the presence of the utility and its access roads, which may facilitate unapproved intrusion into an ecosystem.

San Diego County, southern Orange County, and Riverside County continue to experience strong socio-economic growth pressures, causing equally strong pressures to be exerted on the regional ecosystem's long-term viability. Consequently, the following land use and operational issues were examined in the Plan Area in the preparation of this document:

- Impacts of adjacent land uses, particularly real estate development, on the Covered Species and their habitat that exist in SDG&E's easements and fee-owned ROW and other land holdings.
- Existing conditions in SDG&E's easements and fee-owned ROW and other landholdings of natural resources and degree of habitat protection and conservation.
- Land use compatibility.

- Coordination with Regional Conservation Programs and NCCPs.
- SDG&E's HCP Amendment strategies, which include avoidance, minimization, mitigation, and Plan implementation strategies.
- Impacts to Covered Species from operation and maintenance (O&M).
- Impacts to Covered Species from New Construction.

1.3 Approach

Neither the ESA nor CESA had been enacted when much of the SDG&E utility Facilities were planned and constructed. In 1993, SDG&E collaborated with the Wildlife Agencies to develop and implement Operational Protocols designed to avoid impacts to specified species and their habitat. But certain installation, maintenance, operation, and repair Covered Activities could not be modified to avoid incidental take of species listed under the ESA and/or CESA. For these Covered Activities, ITPs were either sought by SDG&E from the Wildlife Agencies through either ESA Section 7 consultation procedures where the appropriate federal nexus occurred, or through CESA Section 2081.

As with the Subregional Plan, the HCP Amendment is intended to preserve biological and physical resources to the greatest extent possible and afford species within managed habitat greater protections than without the amendment. In the mid-1990s, SDG&E and the Wildlife Agencies collaborated to protect and conserve endangered, threatened, candidate species, and other sensitive species and their habitat under the ESA, CESA, and NCCPA through a holistic approach covering the Subregional Plan Area. This approach was intended to meaningfully contribute to regional conservation efforts and established an operational program for conducting day-to-day Covered Activities in a way that best protects species and their habitat.

Under this approach, SDG&E has conducted Covered Activities in an environmentally sensitive manner in accordance with more than 60 Operational Protocols, previously adopted and implemented successfully over the last 26 years of the Subregional Plan. The protocols are primarily based upon impact avoidance and minimization and recognize that minor adjustments during planning and execution of Covered Activities can often yield major benefits to Covered Species and their habitat. Under the Subregional Plan, SDG&E also agreed to allow certain fee-owned ROW to be used for wildlife and habitat preservation to allow for connectivity between areas of native habitat, or that may contribute to overall habitat protection of preserves. For these reasons, all species within managed habitat will be afforded greater protections than without a Subregional Plan.

The HCP Amendment provides for the continuation of SDG&E's existing habitat conservation program to mitigate residual impacts associated with SDG&E's O&M for its utility system. It continues to emphasize avoiding impacts through the use of Operational Protocols developed in coordination with the Wildlife Agencies, including Pre-activity Surveys to avoid occupied habitat. SDG&E has successfully implemented

these Operational Protocols for more than 26 years and now includes additional Species-Specific Protocols to the HCP Amendment. When habitat impacts cannot be avoided, the HCP Amendment includes measures to ensure that the impacts are minimized to the extent feasible, and that any residual impacts are mitigated through restoration, purchase of land or credits for Mitigation banks, and maintenance of easements for habitat connectivity.

1.4 Scoping

1.4.1 Applicable Law

1.4.1.1 Federal

The federal ESA, 15 U.S.C. Section 1531, *et seq.*, provides for the protection and conservation of fish, wildlife, and plants that have been listed as threatened or endangered. Covered Activities otherwise prohibited by ESA Section 9 and subject to the civil and criminal enforcement provisions of ESA Section 11 may be authorized for appropriate federal agency action pursuant to ESA Section 7 and for other non-federal actions pursuant to ESA Section 10. Pursuant to ESA Section 10(a), USFWS may issue permits, under such terms and conditions as the Secretary of the Interior may prescribe, for acts otherwise in violation of ESA Section 9 to enhance the propagation or survival of any affected species or for the taking of any species incidental to an otherwise lawful activity. Further, for threatened species, the Secretary may issue such regulations as necessary to provide for the conservation of such species under ESA Section 4(d).

Other federal laws enacted with the intent to protect and conserve species of fish, wildlife, plants, and their habitat include, but are not limited to, the following:

- The Migratory Bird Treaty Act (including the protective provisions for game and wild birds), The Migratory Bird Conservation Act, and the Migratory Bird Hunting Stamp Act, 16 Section 701, *et seq.*, are intended to protect birds and restore their necessary habitat. Otherwise unlawful activities, which may impact such birds, or their habitat, may be authorized in accordance with applicable regulation, by permit or other entitlement, as appropriate.
- BGEPA (16 U.S.C. Section 668 and 50 Code of Federal Regulations [C.F.R.] 22) prohibits unauthorized take of bald or golden eagles, including their parts, nests, or eggs. BGEPA authorizes USFWS to issue eagle take permits under specific circumstances. Pursuant to BGEPA, SDG&E has appended an ECP (Appendix B) that assesses bald and golden eagle use in the Plan Area, estimates impacts, identifies avoidance and minimization measures, and provides a monitoring and mitigation approach to offset any eagle impacts.
- NEPA, 42 U.S.C. Section 4321, *et seq.*, mandates that federal agencies consider the environmental impacts of their actions, with the intent of avoiding or minimizing any such impact prior to conducting federal projects (including the authorization of private projects).

- The federal Water Pollution Control Act, 33 U.S.C. Section 1251, *et seq.*, provides for certain protections to wildlife relating to the discharges of pollutants into waters of the United States.

1.4.1.2 State

Similarly, CESA California Fish and Game Code Section 2050, *et seq.*, provides for the protection and conservation of fish, wildlife, and plants that have been listed by the state of California as threatened, endangered, or as candidate species. Covered Activities prohibited by CESA Section 2080 and subject to the civil and criminal enforcement provisions of Section 12000, *et seq.*, may be authorized for appropriate state actions pursuant to CESA Section 2090, *et seq.* and for other persons pursuant to CESA Sections 2081 and 2084. CESA Section 2081 enables CDFW to grant management authorization for the incidental take of threatened, endangered, or candidate species subject to such terms and conditions as it may prescribe.

Other state laws enacted with the intent of protecting and conserving fish, wildlife, plants, and their habitat include, but are not limited to, the following:

- NCCPA, California Fish and Game Code Section 2800, *et seq.*, authorizes agreements between CDFW and any person for the comprehensive management and conservation of habitat and multiple wildlife species and permit, as appropriate, as a part of such plan, the incidental take of CESA-listed species and candidate species under NCCPA Sections 2830 and 2835. The NCCPA authorizes CDFW to enter into agreements with any person to develop and implement an NCCP to provide comprehensive management and conservation of multiple wildlife species and their habitat. Any such plan may authorize the taking of candidate, threatened or endangered species whose protection and conservation are provided for in any such plan pursuant to NCCPA Sections 2830 and 2835. The NCCP Amendment, once complete, will remain subject to the 1991 NCCPA regulations per the original Subregional Plan approval date in 1995.
- Fish and Wildlife Conservation Act, California Fish and Game Code Section 1600, *et seq.*, requires that state agencies, public utilities, and other persons notify CDFW before conducting any project that may adversely affect aquatic habitats of fish or wildlife.
- The Native Plant Protection Act (NPPA), California Fish and Game Code Section 1900, *et seq.*, is intended to preserve, protect, and enhance endangered or rare native plants.
- CEQA, California Public Resources Code Section 21000, *et seq.*, is intended to require state agencies to consider environmental qualitative factors, including the conservation of fish, wildlife, and plant species and the preservation of representations of all plant and animal communities for future generations prior to conducting any project.

1.4.2 Coordination

As a result of urbanization, agriculture, and other development, the amount of habitat remaining to support Covered Species is rapidly dwindling. The effective protection, preservation, and conservation of Covered Species are dependent upon the implementation of effective and properly functioning conservation plans for the habitats and ecosystems essential to the recovery of such species.

Regional conservation programs have been prepared by various local governments or government entities in the Plan Area such as the San Diego County Multiple Species Conservation Program (MSCP), finalized in 1997; the San Diego County Multiple Habitat Conservation Program (MHCP), finalized in 2003; the Orange County Southern Subregion Habitat Conservation Plan, finalized in 2007; the Western Riverside Multi-Species Habitat Conservation Plan (MSHCP), finalized in 2004; and the North (San Diego) County MSCP, in progress. Section 5.4, Relation to Other Regional Habitat Conservation Plans and Preserves, has been updated to reflect the current status of San Diego County's regional planning efforts and boundaries.

Local land development is regulated by local government through enactments of land use, zoning, and permitting ordinances pursuant to their police powers derived from the California Constitution. It is anticipated that local regional conservation programs will be adopted, implemented, and enforced pursuant to these same laws.

SDG&E's land use Covered Activities, the regulation of such Covered Activities, and its HCP Amendment are distinguishable from entities whose actions fall within the jurisdiction of a particular local government. The California Constitution, through Article XII, created and empowered the CPUC with the exclusive jurisdiction to regulate the affairs and operations of public utilities. Pursuant to Section 8 of Article XII, the enactments of local governments that attempt to regulate public utility operations, in matters over which the CPUC has the power to regulate, are invalid.

The CPUC's exclusive jurisdiction to regulate public utilities recognizes the statewide interest in preserving for the benefit of the state's citizens uniform, safe, and reliable utility service. Were the converse true, and if local governments were allowed to regulate the activities of public utilities, public utilities would be subject to a mosaic of divergent local requirements from as many local governments as there are in the Plan Area. SDG&E serves a statewide interest.

The HCP Amendment and the regional conservation programs govern different activities and different persons, often in the same area. The identified Covered Activities herein are regulated by various state agencies, primarily the CPUC, while the activities identified in municipal HCPs are subject to local regulation. In effect, the HCP Amendment, governing Covered Activities serving statewide interests, acts as an overlay across areas also covered by regional conservation programs, thereby governing Covered Activities of municipal concern. As a result of the cooperative efforts of various local governments and public bodies within San Diego, Orange, and Riverside Counties, a reserve of habitat has been established that includes reserve core

areas, narrow endemic reserves, and connecting corridors. These reserve areas are managed primarily for listed plants and animals, with a varying goal of maintaining at least 60–90% of the natural lands as high-quality habitat, depending on applicable conservation plan and jurisdiction. The corridors are designed to maintain connections between core areas of the primary reserves and to support supplemental populations between reserves. The HCP Amendment remains designed to be consistent with the local habitat conservation plans and the overall preserve planning effort.

1.4.3 Activities Covered by Plan and Those Requiring Further CEQA/NEPA Coverage

Two broad categories of Covered Activities are discussed in the HCP Amendment: O&M and New Construction. O&M pertains to existing Facilities and does not typically require permits; therefore, CEQA/NEPA review is also not typically required. The HCP Amendment recognizes that O&M can sometimes have impacts. To mitigate for O&M impacts, the HCP Amendment contains an extensive list of field protocols designed to minimize disturbance to habitat.

New Construction may be subject to CEQA pursuant to the CPUC rules, in particular General Order 131-D. The HCP Amendment is intended to cover typical expansions of the system needed to serve new load; ensure reliability, modernize older less-efficient Facilities; underground existing overhead lines; and comply with new safety, air, wildfire, and water quality standards, as well as other retrofits imposed by new government regulations. Those Covered Activities that would normally be addressed by CEQA will still be subject to CEQA.

New Construction, unlike O&M, may be a linear or non-linear project, is typically not associated with an existing facility, and often requires the acquisition of new property, land rights, or easements. SDG&E must obtain necessary entitlements and approvals prior to undertaking New Construction. The siting of a microgrid (an independent energy system such as a solar photovoltaic facility capable of generating, storing, and delivering power to a local or rural community) is an example of New Construction. When new facilities are sited (i.e., non-linear facilities such as substations or microgrids) or routed (i.e., linear facilities such as electric distribution and transmission lines, pipelines, or roads) in natural areas, disturbed areas are always preferred over non-disturbed areas.

Although USFWS will not undertake additional NEPA review for such projects, neither the Subregional Plan nor the HCP Amendment is intended to exempt such projects from CEQA or NEPA (for other federal agencies besides USFWS), should the state act or federal laws apply. If applicable, new SDG&E projects may be separately analyzed pursuant to CEQA and, if there is federal involvement, NEPA. Project-specific environmental review may warrant an alternative mitigation approach, as dictated by the Lead Agency. Any mitigation that would deviate from that described herein would require USFWS approval as equivalent mitigation, as described in Section 5.

1.4.4 Projects Previously Reviewed under ESA Section 7 with Long-Term O&M Compliance Requirements

Several major projects constructed by SDG&E were previously reviewed under project-specific, ESA Section 7 formal consultations for effects related to both construction and ongoing O&M. Ongoing O&M compliance is required by the Biological Opinions and incidental take statements issued for those projects; therefore, these projects will not be required to adhere to the Operational Protocols of the HCP Amendment. The following Section 7 formal consultations will continue to remain in effect once the HCP Amendment is implemented:

- Biological Opinion issued to the Bureau of Land Management for the Sunrise Powerlink (FWS-08B0423-11F0047), Imperial and San Diego Counties, November 10, 2010.
- Biological Opinion issued to the Bureau of Land Management (lead agency) and U.S. Army Corps of Engineers (cooperating agency) for the East County Substation and Transmission Line Project (FWS-SD-10B0136-11F0122), San Diego Co., CA. September 1, 2011.
- Biological Opinion issued to the U.S. Forest Service (lead agency), Bureau of Indian Affairs (cooperating agency), and the Bureau of Land Management (cooperating agency) for the Cleveland National Forest Power Line Replacement Projects (FWS-SD-158019 I-I 5F0339), San Diego Co., Nov 19, 2015.

SDG&E and USFWS may include O&M of these Facilities within the HCP Amendment later, using the amendment process detailed herein.

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2 Covered Activities

Covered Activities on owned property, easements, and ROW include installation, operation, maintenance, and repair of SDG&E Facilities. A brief description of SDG&E Facilities and associated easements is provided below, followed by a detailed description of Covered Activities.

2.1 SDG&E Facilities

Although many of SDG&E's easements are located within urbanized areas, many large easement corridors cross through and connect biologically sensitive and diverse areas. In addition, a number of substation and gas regulator sites adjoin or contain valuable habitat. Provided below are brief descriptions of the types of easement corridors that are typical for SDG&E Facilities, including electric distribution, electric transmission, gas, and substation properties.

Covered Activities include both O&M and New Construction. O&M refers to construction work that is done to maintain, repair, relocate, or upgrade existing Facilities. New construction occurs where SDG&E is expanding or extending gas and electric Facilities to provide safe and reliable energy to the region. As described in more detail in Section 4, however, in contrast to 1995, all major infrastructure is now largely in place, and SDG&E anticipates building new Facilities at a far lower rate than prior decades. Accordingly, in future years, Covered Activities will be predominantly maintaining, repairing, and upgrading the existing system.

2.1.1 Electric Distribution Easement Corridors

Above ground and underground electric distribution easements are typically 12 feet in width or narrower. Above ground Facilities typically consist of power poles located in the center of the easement with attachments such as guy anchors, circuit switches, stub and anchors, wires, and communication cables. Underground Facilities may consist of manholes or hand holes to provide access for repairs and maintenance. The total percentage of utility footprint within the easement area is less than 1% of the easement area. Access routes to these Facilities are not usually maintained, enabling the habitat to recover.

2.1.2 Electric Transmission Easement Corridors

Above ground and underground electric transmission easements are typically 20 feet in width or greater. Above ground Facilities typically consist of power poles, two-pole structures, steel poles or lattice steel towers. Corridors that are 20 feet in width contain a single pole line, while corridors greater than 100 feet in width could contain as many as five individual transmission lines. Underground electric transmission lines may consist of manholes or hand holes to provide access for repairs and maintenance. Due to the greater span distance between structures, the utility footprint in the easement

area is approximately less than 5% of the easement area. Access routes to these Facilities are typically provided via SDG&E-maintained access roads in order to inspect and maintain the utility structures as mandated by the CPUC for safe and reliable service.

2.1.3 Gas Distribution and Transmission Easement Corridors

Gas distribution and transmission easements are normally 40 feet in width or narrower. Above ground improvements are minor and consist of valve boxes, cathodic stations, pipeline identification markers, and leak detection devices. Above ground improvements are approximately less than 1% of the easement area. Access to these improvements is provided via access roads.

2.1.4 Electric Substations and Gas Regulator Stations

Electric substations and gas regulator stations are located along or at the terminus of electric or gas easement corridors and are usually surrounded by landscaped areas or open space areas. Storage Facilities may be associated with, and located nearby or adjacent to, electric substations. It is essential for safe and reliable service that access roads be maintained in a condition that ensures that these Facilities can be operated, as necessary, on a 24-hour basis.

2.2 Covered Activities

SDG&E constructs new utility infrastructure on an ongoing basis to maintain uniform, adequate, safe, and reliable electric and gas service. SDG&E also conducts maintenance and repair of Covered Activities on existing Facilities. As a regulated California utility, all proposed actions as described herein are necessary to maintain and provide service in a safe and reliable manner in compliance with state (CPUC) and/or Federal Energy Regulatory Commission (FERC) requirements. Typical construction, maintenance and repair of Covered Activities for each type of Facility are described in this section. Operational Protocols to be used by SDG&E field personnel to avoid and minimize the potential impacts of installation, maintenance, and repairs for each type of Facility are contained in Section 5.1.

2.2.1 Overhead Facilities

Overhead Facilities are utilized in the transmission and distribution of electricity. Generally, overhead conductors (wires) are supported by wood or steel poles, or by steel lattice towers.

2.2.1.1 New Overhead Facility Alignment

New overhead Facilities will, to the extent possible, be designed to minimize habitat fragmentation and disruption of wildlife movement and breeding areas. This will be accomplished by avoiding siting of Facilities in habitat and by utilizing dead-end/spur

roads rather than linking Facilities tangentially, to the extent possible.¹ When Facilities must be sited in undisturbed or habitat areas, they will, to the extent possible, be sited in lower-quality habitat (Figure 4).

2.2.1.2 Placement of Structures

Steel lattice towers are installed using concrete or micropile foundations. Wood or steel poles are installed using direct burial or concrete or micropile foundations. Maintenance will be performed, and repairs may be required, to restore structural integrity or inadequacies in a foundation or transmission structure caused by erosion or other occurrences.

2.2.1.3 Placement of Electrical Equipment on Structures

Towers and poles support a variety of electrical equipment, including insulators and conductors. Insulators are attached directly to poles, or to arms mounted on the structures. The insulators are installed by workers who climb the structure or access the structure in bucket trucks. Once the insulators are installed, a helicopter is often used to install a small rope. The small rope is used to pull in a bigger rope or cable, which is then used to pull in the conductor.

2.2.1.4 Insetting Poles

“Pole inseting” places poles in-line between existing structures. The new poles provide additional strength to support new or heavier conductors. The new poles are also used to achieve necessary wire clearances, consistent with applicable legal requirements. Insetting is an effective method of fully utilizing existing electric line structures and alignments, which often defers the need for new structures, lines, and alignments.

2.2.1.5 Equipment Repair and Replacement

Poles or towers may support a variety of equipment such as conductors, insulators, switches, transformers, lightning arresters, line junctions, and other electrical equipment. This type of equipment may need to be added, repaired, or replaced in order to maintain uniform, adequate, safe, and reliable service. Due to damage, changes in conductor size, or the like, an existing transmission structure will be removed and replaced with a larger/stronger structure at the same or nearby location. This could also include replacing existing wood poles with steel poles for fire hardening purposes.

¹ “To the extent possible” means without violating CPUC standards or jeopardizing the structural and operational integrity of the Facility.

Existing:



Relocated:

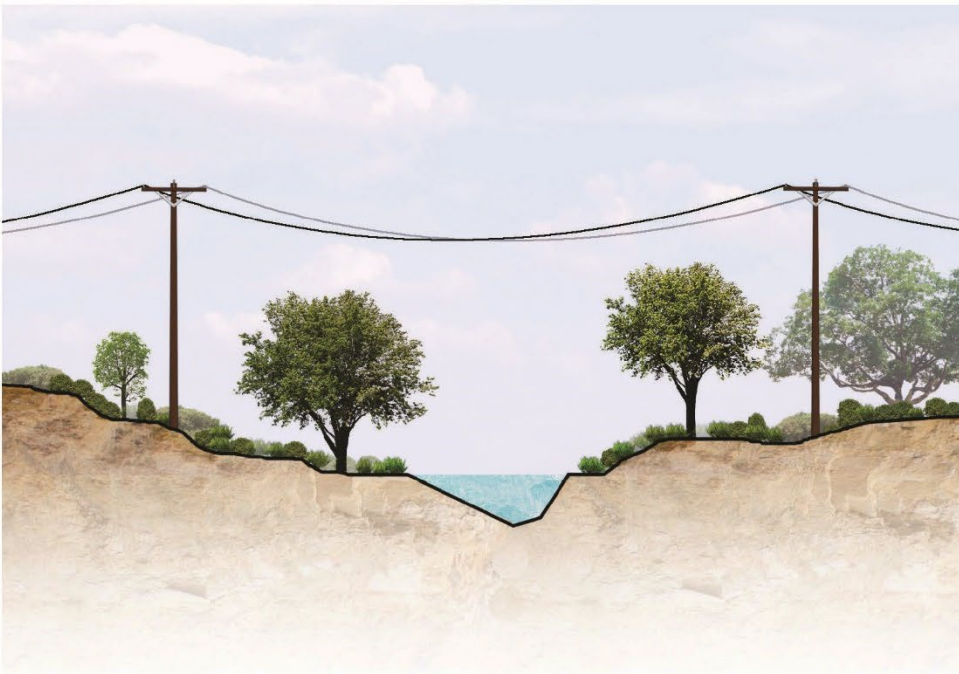


Figure 4. Example of a Best Management Practice for utility pole relocations from wetlands and waterways to uplands. When and where identified, utility poles in wetlands and waterways are relocated to upland areas, as feasible, in accordance with land rights, engineering design, and agency approvals (when required).

2.2.1.6 Pole Anchors and Stubs

Anchors, guy wires, and stubs are used to support poles. Generally, one end of a guy wire attaches to the upper portion of a wood pole. The other end attaches to the top of a stub or to an anchor buried in the ground. These anchors can be in or out of alignment with the pole line. To maintain pole stability, new anchors or stubs, or replacement anchors or stubs may be needed. Stubs can be made of wood or steel and sometimes require concrete foundations.

2.2.1.7 Insulator Washing

In some areas prone to atmospheric moisture, condensation combines with dust on insulators and can create an electrical discharge. This discharge, known as “arcing,” poses a significant risk of service outages and/or can be a source of possible fire ignition. This risk can be substantially reduced by periodic washing of the insulators. The process of washing insulators involves driving a water truck to within 60 feet of the Facility. A high-pressure hose is used to spray water at the insulator.

2.2.2 Underground Facilities

Underground Facilities can include transmission and distribution of natural gas as well as electric infrastructure.

2.2.2.1 New Underground Facility Alignment

New underground Facilities will be designed to minimize habitat fragmentation and disruption of wildlife movement and breeding areas by avoiding siting Facilities in habitat and by utilizing dead-end/spur roads to the extent possible. When Facilities must be sited in undisturbed areas, they will, to the extent possible, be sited in lower-quality habitat.

2.2.2.2 Underground Facility Access

Underground Facilities are regularly inspected visually and mechanically for any conditions that can potentially impair their function. Inspections involve driving along the top of/or parallel to the underground Facility. Access roads from public streets are utilized to reach the underground alignment. Access road maintenance is therefore a key component in installing, maintaining, and inspecting underground Facilities. Helicopters/Unmanned Aircraft Systems (UASs) may be used to assist with inspections of gas transmission lines located in isolated areas or areas of rough terrain where vehicle and pedestrian ground patrol is not feasible.

2.2.2.3 Protection of Underground Facilities in Waterways

Underground infrastructure may cross a variety of shallow waterways ranging from blue-line streams designated on U.S. Geological Survey (USGS) maps to agricultural irrigation ditches. When the integrity of the Facility is threatened due to scouring, erosion, or other surface disturbance, measures to protect the Facility and to minimize

future erosion must be taken. Typical maintenance actions utilized to protect the underground Facilities include grading, addition of fill material to repair erosion damage, repair of adjacent slopes with placement of rip-rap or concrete, compaction of soil, hydroseeding with fiber matrix, vegetation control of species with invasive root structures, and other Covered Activities as necessary. These measures may be accomplished by hand or by equipment or machinery. Vegetation is allowed to grow over the underground Facility where it will reduce erosion by wind and water, and stabilize the soil.

2.2.2.4 Trenching

Trenching is required in order to install, replace, reposition, or repair underground Facilities. The width of the trench is dependent on the depth of the underground Facility and the stability of the side slopes. Underground Facilities are typically buried 3 feet to 5 feet deep. Facilities buried over 5 feet deep require side slopes of 1:1 or the use of shoring.

2.2.2.5 Line Markers

Underground infrastructure installed on private property or out of the public ROW is marked above the ground through a variety of methods, including “Transmission Line Markers” (paddle-shaped markers attached at eye level to steel posts). In addition to marking the location of the underground Facilities, the markers contain safety warning messages for digging contractors and the general public. Underground alignment occasionally runs perpendicular to a waterway or other terrain, which prevents walking or driving along the alignment for inspection purposes. In these instances, a line-of-sight free from vegetation from marker to marker must be maintained for visual inspections at a distance.

2.2.3 Substations and Regulator Stations

Electric substations connect the electrical transmission system to the electric distribution system and reduce the electrical voltage to the distribution system in order to maintain safe reliable electric service. Substations are designed and operated to meet the safety standards required in CPUC General Order 131-D for electrical systems. Regulator stations connect the natural gas transmission system to the natural gas distribution system and regulate the supply of gas to that distribution system in order to maintain safe, reliable natural gas service. Regulator stations are designed and operated to meet the safety standards required in CPUC General Order 112-D for natural gas systems.

2.2.3.1 Substation and Regulator Siting

As noted above and explained in Section 4, SDG&E does not anticipate constructing new substations or regulator stations at the rate anticipated in 1995. Nonetheless, to the extent possible, new substations and regulator stations will be sited to avoid habitat in order to minimize fragmentation and disruption of wildlife movement and breeding areas. When habitat must be disturbed, Facilities will, to the extent possible, be sited in

lowest-quality habitat. When Facilities must be sited in a Preserve, they will, to the extent possible, be sited at the outer boundary of the Preserve rather than in the center.

2.2.3.2 Staging and Other Work Areas

The disturbed areas within the property line of a substation or regulator station may be used as a staging area for the temporary storage of large construction equipment used in construction and maintenance. This property may also serve as equipment turn-around areas, wire pulling sites, equipment parking, assembly, and storage sites. Staging areas are used for equipment laydown areas and pads for equipment positioning during construction. This utilization is intended to be temporary.

2.2.3.3 Geotechnical Failure Protection and Remediation

Geotechnical remediation is necessary when geotechnical failure is imminent or has occurred and threatens the integrity of a Facility, such as a substation or a regulator station. Preventative maintenance includes slope reconstruction and the repair or addition of drainage structures and retaining walls. Access is needed to various sites proposed for electrical substations and gas regulator stations for the purpose of obtaining engineering design information on the soils.

2.2.3.4 Pest Control

Pest control at electric and gas Facilities may be necessary to ensure system integrity. Facilities that may require pest control are electric substations, gas regulator stations, gas valve boxes, utility equipment yards, and various storage Facilities (pest control is not necessary within electric transmission ROW). Nonnative rats, mice, and other rodents have been known to cause electrical outages within substation transformers, eat through gas metering equipment, and eliminate the effectiveness of gas valve boxes. Fortunately, SDG&E Facilities are not normally attractive to these pests. Therefore, minimal pest control efforts are able to keep the rodent population down. Pest control is more common to Facilities located adjacent to urbanized areas where food is more plentiful. When necessary, pest control measures will be used in accordance with the written recommendation of a licensed, registered Pest Control Advisor. Pesticides will only be applied by a licensed applicator in accordance with label precautions and applicable law in a manner that does not harm native plants or animals. See Section 5.1 (Operational Protocol [OP] 38) for additional restrictions on pest control Covered Activities.

2.2.4 Use of Helicopters and Unmanned Aircraft Systems (UASs)/Drones

Helicopters and UASs (e.g., drones) are used in the visual inspection and surveying of overhead Facilities. Electric overhead lines are inspected² regularly via helicopter and/or UASs. These practices are, and will continue to be, undertaken in compliance with applicable state and federal requirements, and will be updated as these policies are modified over time. Helicopters are also used to deliver equipment, position poles and

² See, e.g., CPUC General Order 95 (GO95).

towers, string lines, and position aerial markers as required by Federal Aviation Administration regulations. Additionally, helicopters and UASs may be used to efficiently gather existing site condition information that can be used for future engineering/design purposes associated with existing or siting of new Facilities.

2.2.5 Vegetation Management

Vegetation management plays a critical role in maintaining reliable and safe gas and electrical service throughout the region. Vegetation is managed within and adjacent to all SDG&E Facilities including but not limited to overhead electric lines, substations and regulators, access roads, drainage structures, area around transformers, and buildings, Vegetation is controlled to facilitate the construction and use of roads, allow inspection and maintenance of infrastructure and Facilities, expose hazards such as ruts to drivers, eliminate noxious weeds, prevent fires, and provide safe working areas.

2.2.5.1 Mechanical Removal

The simplest method of removing vegetation is by hand, such as the removal of isolated large shrubs or trees growing in areas where the roots could damage Facilities or where vegetation size restricts visual inspection. Raking is a means of removal usually used only to gather debris in preparation for disposal. Mowing will be used to control vegetation where low vegetation is desirable for erosion control. Clearing and/or grubbing an area of vegetation by grading will also be used where no other means are appropriate.

2.2.5.2 Herbicide Spraying

Herbicide spraying, although not commonly employed by SDG&E, may be used around buildings and where bare ground is required for fire control. Herbicide spraying will not be conducted where it will damage known populations of Covered Species of plants or host plants of Covered Species. The typical regimen for herbicide use includes the application of pre-emergent herbicides during the fall and winter and spot application of contact herbicides during the growing season. All herbicides will be applied by a registered applicator in accordance with label precautions and applicable law.

2.2.5.3 Fire Control Areas

SDG&E conducts ongoing vegetation removal and management around electric and gas infrastructure in order to comply with CPUC General Orders, Public Resources Code Section 4292, and other applicable laws for fire prevention or control. These fire control measures can aid in the prevention of fire caused by arcing and can protect the Facilities from failure due to a fire in a surrounding area. Areas cleared of vegetation are also required around gas line valve complexes and cathodic test stations for fire protection.

Fire control areas around Facilities such as overhead structure are typically 10 feet in circumference but could vary depending on site conditions and/or changes in required regulations as noted above. To be consistent with local guidance and best management

practices for fire prevention/protection, structures such as substations and regulator stations may require up to 100 feet of brush management around the perimeter of the Facility to maintain appropriate defensible areas and otherwise comply with applicable law. Frequency of abatement Covered Activities will vary based on vegetation type, density, and height, and shall be undertaken as appropriate to ensure fire-control clearances around Facilities are properly maintained.

2.2.5.4 Wildfire Fuels Management

Wildfire Fuels Management reduces fire fuel load around distribution and transmission lines within the SDG&E service area. Wildfire Fuels Management is conducted inside and outside of SDG&E ROW, when determined necessary and beneficial to reduce fire risk from O&M of infrastructure. Modification of fire fuel loads may additionally reduce the intensity of wildfires that pass through Facility easements and ROW. Wildfire Fuels Management serves the public interest as it reduces wildfire fuel loads in the vicinity of rural communities within High Fire Threat Districts, which are the most vulnerable areas subject to wildfires in San Diego County.

Wildfire Fuels Management practices differ from standard vegetation management practices such as pole brushing where all the vegetation is removed to bare mineral soil and is considered a permanent loss of habitat. In contrast, Wildfire Fuels Management focuses on removing nonnative species, which benefits the overall ecological value of the surrounding vegetation communities, as well as dead/down woody vegetation that provides fuel for wildfire. In addition, Wildfire Fuels Management may involve the thinning of select native vegetation in Treatment Areas with a focus on preserving habitat value and native species diversity. In other words, Wildfire Fuels Management does not entirely remove vegetation, but instead seeks to leave the Treatment Areas resembling an early successional state of the vegetation community that maintains biodiversity and ecological functionality in combination with adjacent or nearby vegetation structure. Additionally, Wildfire Fuels Management areas also receive annual weed maintenance, which in turn will allow establishment of native annual plant species that generally are not expected to significantly add to the fuel load.

SDG&E will coordinate directly with individual public and private landowners to obtain permission to conduct Wildfire Fuels Management outside of existing ROW. The objectives of the Wildfire Fuels Management in order of priority are:

- (1) removal of nonnative vegetation, especially fire-promoting species,
- (2) removal of dead/down woody vegetation, and
- (3) thinning of select native vegetation in Treatment Areas with a focus on preserving habitat value and native species diversity.

In locations where native thinning is conducted (Treatment Areas), only commonly occurring or dominant native species within a given vegetation community will be targeted for thinning. This is to ensure that native plant diversity within Treatment Areas does not change between the pre-treatment and post-treatment conditions. Additionally,

host plant and nectar-source species for sensitive wildlife will be avoided as much as possible. The overarching goal of Wildfire Fuels Management is to reduce wildfire fuel loads while maintaining or enhancing ecological functionality and biodiversity within Treatment Areas (see Figure 5).

2.2.5.5 Tree Trimming

Tree limb contact with electrical lines is a potential cause of power outages and is also a source of possible ignition and, as such, a potential fire hazard. SDG&E's tree trimming practices are continuous and provided throughout the service area, and are necessary to maintain required line clearances. Pursuant to Operational Protocol (OP) 31 (see Section 5.1.4 of the HCP), SDG&E has created environmentally sensitive areas where tree trimming would be scheduled during non-sensitive times such as outside the bird breeding seasons to the extent feasible. This information has been populated into a tree trim computer database managed by SDG&E's Vegetation Management group to inform tree trimming schedules and annual trimming cycles.

Annual tree trimming involves two types of activities: (1) routine pruning of required minimum clearances per state and federal mandates (General Order 95, Rule 35; Public Resources Code 4293; NERC FAC-003-4), and (2) removal of hazard trees that pose a risk to the adjacent overhead electrical facilities. Routine pruning involves pruning of branches on trees within the Vegetation Management group tree inventory database. Hazard tree work or removal affects larger portions of a tree (up to, and including, complete removal) and is conducted on dead/dying trees and those with structural defects that increase the risk of electrical line contact. Routine pruning work accounts for the majority of annual tree trimming activities, with a smaller proportion targeting hazard tree removal. Tree work involves small teams (two crew members) using hand tools, such as hand saws, loppers, and chainsaws. Not all distribution and transmission lines require annual tree trimming activities as they are located in scrubland habitats where tree limb interactions with the lines are not expected to occur.

2.2.6 Other Ground Disturbance

Many types of ground disturbance are necessary in order to install, protect, maintain, and repair Facilities. These types of disturbances generally occur in, but are not limited to, the utility ROW and existing access roads.

2.2.6.1 Access Roads

Access roads compose part of SDG&E's Facilities. Cost-effective and efficient installation, maintenance, and repair of its Facilities depend upon the availability of adequate access roads. Most gas and electric transmission Facilities, and some distribution Facilities, require access roads. New access roads will, to the extent possible, be designed to minimize habitat fragmentation and disruption of wildlife movement and breeding areas through the utilization of dead-end/spur roads rather

BEFORE:



AFTER:



Figure 5. Wildfire Fuels Management - Removal of Non-Natives and Thinning of Natives, Increasing Open Space in Treatment Areas

than linking Facilities tangentially. When new access roads must be sited in undisturbed areas, they will, to the extent possible, be sited in lower-quality habitat, as determined by a Biologist performing preliminary surveys.

Within the Plan Area, SDG&E uses and maintains a widespread system of roads to access SDG&E Facilities. In certain areas, SDG&E access roads may be close to road networks maintained by other entities, including, for example, municipalities, private property owners, and/or federal and/or state agencies. Therefore, in the Plan Area, certain SDG&E access roads could potentially be re-aligned or removed entirely to improve local biological resources without sacrificing safe and reliable access to SDG&E Facilities. There is also the potential that SDG&E no longer needs certain existing access roads for Facility maintenance; therefore, these roads, if any, may also be re-aligned or removed entirely without sacrificing SDG&E operations. Accordingly, when SDG&E receives reports or other concerns about roads, including, for example, on Del Mar Mesa, it will work in coordination with Wildlife Agencies and the landowner (if applicable) to review and address the concerns regarding existing access to SDG&E Facilities. SDG&E may also review the continuing functionality of any of its existing access roads at its discretion. Any SDG&E access road that SDG&E determines is unnecessary for safe and reliable access to its Facilities will be removed and restored to native vegetation. SDG&E will work with applicable stakeholders and agencies to expeditiously undertake any such removal and restoration.

2.2.6.2 Access Roads Crossing Waterways

Access roads may cross a variety of water ways ranging from blue-line streams designated on USGS maps to agricultural irrigation ditches. Culverts may be added when utilization of an unculverted access road would alter the natural flow of a waterway. When the integrity of the access road is threatened, the culverts will be kept clear of vegetation, sediment, and debris to protect the access road. Sediment deposited in the area will be removed by hand or through the use of earth-moving equipment. Other construction and Covered Activities include bank stabilization and repair of subsidence damage. These Covered Activities may be accomplished through the placement of rip-rap and through the use of earth-moving equipment within the access road area.

2.2.6.3 Slopes

Cut and fill slopes are constructed to create pads/foundations for utility structures or access roads. Slopes may require erosion repair.

2.2.6.4 Staging and Other Work Areas

Staging areas are for the temporary storage of large construction equipment and materials used in construction, maintenance, and repair Covered Activities. They can also serve as equipment turn-around areas, wire pulling sites, equipment parking areas, component assembly areas, equipment laydown areas, equipment and material storage sites, and temporary soil stockpile sites.

2.2.6.5 Fiber Optic Lines/Telecommunications

Installation of fiber optic and other telecommunications lines and equipment requires access to existing overhead and underground Facilities. Fiber optic cable or other telecommunications lines and equipment may be necessary to provide direct communication between two or more locations.

2.2.6.6 Geotechnical Remediation

Geotechnical remediation is necessary when geotechnical failure that may threaten the integrity of a Facility, such as but not limited to an electrical structure or a pipeline, is imminent or has occurred.

2.2.6.7 Geotechnical Testing

Geotechnical tests are conducted to determine soil stability, depth of water table, and engineering design values, and for the presence of hazardous waste. Testing may involve sample drilling, monitoring wells, excavation pits, or trenches.

Access roads may be required for this equipment over existing or potential project sites.

2.2.7 Biological Surveys and Handling

SDG&E's personnel or its contractors will perform biological surveys for Covered Species per the Operational Protocols in Section 5.1. The individuals conducting the surveys will have applicable permits and/or authorizations and meet applicable qualifications established by the Wildlife Agencies. If surveys or Species-Specific Protocols require physical capture and immediate release of Covered Species, such as arroyo toad, California red-legged frog, western pond turtle, Stephens' kangaroo rat, and Pacific pocket mouse, a qualified Biologist will be used. A qualified Biologist is a person who has the educational background, training, and work experience (handling experience or permits) required to perform a specific biological task. For the purposes of the HCP Amendment, the term Biologist also applies to a botanist, where applicable, for specific plant-related tasks. An authorized Biologist is an SDG&E Biologist or SDG&E biological contractor, who is authorized to handle, relocate, salvage, or translocate a Covered Species after being approved by Wildlife Agencies. Such activities are considered incidental take under the ESA and require permit coverage. Approval will be granted by USFWS, as appropriate, as part of the Take authorized in the Section 7 Biological Opinion for the HCP Amendment and/or the HCP Amendment Section 10(a) ITP.³

Biologists will also conduct surveys for Covered Species on private land within the Plan Area being considered for purchase to provide mitigation of impacts on Covered Species. Although these surveys are not expected to require handling of individuals in most instances, incidental take of Covered Species may result if handling is needed.

³ Approval by CDFW will be granted through a Scientific Collecting Permit or Memorandum of Understanding until an NCCP Amendment with CESA/NCCPA ITP is complete.

Handling may also be required during biological monitoring in order to move Covered Species out of harm's way. Such surveys, handling, and incidental take will be covered by the HCP Amendment.

2.2.8 Habitat Management

SDG&E personnel or its contractors may perform habitat management as mitigation per Sections 5.2, 5.3, and 5.5. Management may include a range of stewardship Covered Activities, such as fencing, signage, and litter removal, and Covered Activities related to biological management such as restoration, enhancement, species salvage/translocation, and weed removal for the betterment of Covered Species and their habitat.

2.3 Conducting Covered Activities during Emergencies

In general, emergencies are those conditions that potentially or immediately threaten the integrity of the SDG&E system, including broken/leaking pipes, downed lines/poles, slumps, slides, surface fault ruptures, erosion, major subsidence, or other natural disaster. Emergencies, including fire, flood, accident, or other serious, unexpected situations requiring an immediate response, are not considered Covered Activities covered by the HCP Amendment.

It is recognized that SDG&E may need to conduct Covered Activities described above during or in response to emergencies, including as an emergency response to a Facility failure or urgent repair to prevent a Facility failure. Covered Activities conducted in response to an emergency are the same as defined in Section 2.2 above. The difference is limited to the timing and urgency of completing the work. Emergency response work typically requires immediate repairs and thus may necessitate an abbreviated environmental review process, or the environmental review process would occur after the emergency work. If not pre-screened, emergency work would require post-project assessments to determine impacts and associated mitigation. As a result, in considering potential impacts to Covered Species or their habitat, adjustments for time of day or seasonal constraints that may otherwise be applicable for Covered Activities may not be possible in the interest of system integrity and public health and safety.

During an emergency, SDG&E will immediately conduct the necessary Covered Activities to alleviate the situation. Covered Activities conducted in response to an emergency will be performed by SDG&E crews and/or contract crews under the direction of SDG&E and in accordance with the Operational Protocols and mitigation contained in Section 5, whenever possible. Typically, Pre-activity Surveys (see Section 5.1.3, OP 14) cannot be conducted prior to the repair Covered Activity. If the emergency is within or adjacent to habitat areas, the Biologist will conduct an assessment during the event, if possible, or after the event is complete. Once the emergency is stabilized, temporary and permanent habitat impacts will be assessed and recommendations made for revegetation Covered Activities and/or mitigation, as applicable, per Section 5.

3 Biology

This section identifies Covered Species and their habitat that are the subject of the HCP Amendment, discusses Covered Species conservation policies, and provides a description of potential impacts to Covered Species or their habitat caused by Covered Activities. In support of the HCP Amendment, a supplemental Covered Species Analysis was completed and is included as Appendix A.

3.1 Covered Species

For the purposes of the HCP Amendment, the term Covered Species is as defined in the, “all species, subspecies, and populations identified in Section 3, Table 3.1, of the HCP Amendment.” Covered Species that are not listed as threatened or endangered under the ESA are included because, in most cases, they will benefit from the habitat conservation actions to protect Listed Species.

Table 3.1 lists the 41 Covered Species for which the HCP Amendment is intended to provide protective and conservation measures over the term of the Take Authorizations. Table 3.1 has been updated in support of the HCP Amendment. Table 3.1 also identifies Covered Species for which additional Specific Protocols have been established. Appendix B contains the ECP that has been developed for golden eagle (*Aquila chrysaetos*) and bald eagle (*Haliaeetus leucocephalus*), which were Covered Species under the Subregional Plan and will continue to be Covered Species under the HCP Amendment. The ECP assesses eagle use in the Plan Area, estimates impacts, identifies avoidance and minimization measures, and provides a monitoring and mitigation approach to offset eagle impacts. Appendix C contains the Peninsular Bighorn Sheep Evaluation which assess impacts, identifies avoidance and minimization measures to offset peninsular bighorn sheep impacts.

The Covered Species have been updated based on coordination with USFWS and review of existing information. The SDG&E Subregional Plan, as approved in 1995, originally covered 110 species. These original 110 species, as well as additional sensitive species not covered under the 1995 Subregional Plan,⁴ were evaluated for coverage in support of the HCP Amendment and are reviewed more fully in Appendix D. SDG&E principally considered four criteria in determination whether to include or exclude species as Covered Species under the HCP Amendment:

1. Listing Status – Whether the species was either currently listed under the ESA or was likely to become listed during the remaining duration of the permit term.

⁴ Review focused primarily on CDFW sensitive wildlife (i.e., species of special concern, fully protected, or watch list species) and California Rare Plant Rank (CRPR) List 1A, 1B, 2A, and 2B species that have been detected within the Plan Area in the last 30 years. Species identified with lower status designations were not considered as likely to be listed over the life of the HCP, unless other supporting information was available that suggested potential for listing.

2. Geographic Range – Whether the species was currently known to occur or was expected to occur in the Plan Area based on knowledge of the species’ geographic range and the presence of suitable habitat.
3. Effects of Covered Activities – Whether the species could be adversely affected by Covered Activities that are currently occurring within the Plan Area or are likely to occur over remaining duration of the permit term.
4. Adequacy of Existing Data and Information on the Species – Whether sufficient data and information were available regarding the species’ life history, habitat requirements, and presence in the Plan Area to adequately evaluate effects on the species and develop appropriate protocols for avoiding, minimizing, or mitigating impacts.

SDG&E evaluated the four criteria in a stepwise fashion. If a species was neither currently listed under the ESA, nor likely to become listed during the remaining duration of the permit term, no further evaluation of the species was undertaken. The remaining species were evaluated for their potential to occur in the Plan Area. Those species listed or with potential to be listed under the ESA that occur within the Plan Area were evaluated on the final two criteria. For those species not covered, the rationale for exclusion was provided.

3.1.1 Critical Habitat

Critical habitat for 16 federally listed Covered Species occurs in the Plan Area (USFWS 2019). Distribution, location, and acreage of the designated critical habitat, along with the total approximate acreage located in the Plan Area, are provided for each respective federally listed Covered Species in Sections 2 through 6 of Appendix A. Attachment A of Appendix A provides a table summarizing the species with designated critical habitat in the Plan Area. Appendix C provides a table summarizing designated Critical Habitat for peninsular bighorn sheep.

3.2 Vegetation Communities and Other Land Covers in the Plan Area

Vegetation communities and other land cover types addressed by this Plan Area are listed below. Appendix E provides a crosswalk of the vegetation communities below relative to the Holland classification system (Holland 1986; Oberbauer et al. 2008) and the California Manual of Vegetation (Sproul et al. 2011). Appendix F provides a crosswalk of the habitat types below relative to the broader vegetation grouping in Tables 4.5 and 4.6. Figure 6 displays a generalized map of vegetation in the Plan Area. Table 3.2 summarizes vegetation community acreages in the Plan Area.

Table 3.1 HCP Amendment Covered Species List

Scientific Name	Common Name	ESA Status ¹	CESA Status ¹	Other Status ¹	Species-Specific Protocols (Y/N)	Narrow Endemic Protocols (Y/N)	Vernal Pool Protocols (Y/N)
Plants (16)							
<i>Acanthomintha ilicifolia</i>	San Diego thorn-mint	T	E	CRPR 1B.1	N	Y	N
<i>Ambrosia pumila</i>	San Diego ambrosia	E	-	CRPR 1B.1	N	Y	N
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>	Del Mar manzanita	E	-	CRPR 1B.1	N	Y	N
<i>Baccharis vanessae</i>	Encinitas baccharis	T	E	CRPR 1B.1	N	Y	N
<i>Brodiaea filifolia</i>	Thread-leaved brodiaea	T	E	CRPR 1B.1	N	Y	N
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i> (<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>)	Salt marsh bird's-beak	E	E	CRPR 1B.2	N	Y	N
<i>Chorizanthe orcuttiana</i>	Orcutt's spineflower	E	E	CRPR 1B.1	N	Y	N
<i>Deinandra conjugens</i> (<i>Hemizonia conjugens</i>)	Otay tarplant	T	E	CRPR 1B.1	N	Y	N
<i>Dudleya brevifolia</i>	Short-leaved dudleya	-	E	CRPR 1B.1	N	Y	N
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button-celery	E	E	CRPR 1B.1	N	N	Y
<i>Monardella viminea</i> (<i>Monardella linoides</i> ssp. <i>viminea</i>)	Willow monardella	E	E	CRPR 1B.1	N	Y	N
<i>Navarretia fossalis</i>	Spreading navarretia	T	-	CRPR 1B.1	N	N	Y
<i>Nolina interrata</i>	Dehesa nolina	-	E	CRPR 1B.1; BLM Sensitive	N	Y	N
<i>Orcuttia californica</i>	California Orcutt grass	E	E	CRPR 1B.1	N	N	Y
<i>Pogogyne abramsii</i>	San Diego mesa mint	E	E	CRPR 1B.1	N	N	Y
<i>Pogogyne nudiuscula</i>	Otay Mesa mint	E	E	CRPR 1B.1	N	N	Y
Invertebrates (4)							
<i>Branchinecta sandiegonensis</i>	San Diego fairy shrimp	E	-		N	N	Y
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	E	-		N	N	Y
<i>Pyrgus ruralis lagunae</i>	Laguna Mountains skipper	E	-		Y	N	N
<i>Lycaena hermes</i>	Hermes copper butterfly	T	-	USFS Sensitive	Y	N	N
Amphibians (3)							
<i>Anaxyrus californicus</i> (<i>Bufo microscaphus californicus</i>)	Arroyo toad	E	-	SSC	Y	N	N
<i>Rana draytonii</i> (<i>Rana aurora draytonii</i>)	California red-legged frog	T	-	SSC	Y	N	N
<i>Spea hammondii</i> or <i>Scaphiopus hammondii</i>	Western spadefoot	-	-	BLM Sensitive; SSC	N	N	Y
Reptiles (2)							
<i>Actinemys marmorata</i>	Western pond turtle	-	-	SSC; USFS Sensitive; BLM Sensitive	Y	N	N
<i>Phrynosoma blainvillii</i>	Coast horned lizard	-	-	BLM Sensitive; SSC	N	N	N
Birds (13)							
<i>Agelaius tricolor</i>	Tricolored blackbird	-	T	BLM Sensitive; SCC; BCC	Y	N	N
<i>Athene cunicularia</i> (<i>Athene cunicularia</i> ssp. <i>hypugaea</i>)	Burrowing owl	-	-	SSC; BCC; BLM Sensitive	Y	N	N
<i>Aquila chrysaetos</i>	Golden eagle	-	-	BGEPA; BLM Sensitive; FP; WL	Y	N	N
<i>Campylorhynchus brunneicapillus sandiegensis</i>	Coastal cactus wren	-	-	SSC; USFS Sensitive	Y	N	N

Scientific Name	Common Name	ESA Status ¹	CESA Status ¹	Other Status ¹	Species-Specific Protocols (Y/N)	Narrow Endemic Protocols (Y/N)	Vernal Pool Protocols (Y/N)
<i>Charadrius nivosus nivosus</i> (<i>Charadrius alexandrinus nivosus</i>)	Western snowy plover (Pacific Coast population distinct population segment)	T	-	SSC	Y	N	N
<i>Coccyzus americanus</i>	Western yellow-billed cuckoo (western distinct population segment)	T	E	USFS Sensitive; BLM Sensitive	Y	N	N
<i>Empidonax traillii extimus</i>	Southwestern willow flycatcher	E	E		Y	N	N
<i>Haliaeetus leucocephalus</i>	Bald eagle	Delisted	E	BGEPA; BLM Sensitive; FP; USFS Sensitive	Y	N	N
<i>Passerculus sandwichensis beldingi</i>	Belding's savannah sparrow	-	E	BCC	Y	N	N
<i>Polioptila californica californica</i>	Coastal California gnatcatcher	T	-	SSC	Y	N	N
<i>Rallus obsoletus levipes</i> (<i>Rallus longirostris levipes</i>)	Light-footed Ridgway's rail (light-footed clapper rail)	E	E	FP	Y	N	N
<i>Sternula antillarum browni</i> (<i>Sterna antillarum browni</i>)	California least tern	E	E	FP	Y	N	N
<i>Vireo bellii pusillus</i>	Least Bell's vireo	E	E		Y	N	N
Mammals (3)							
<i>Dipodomys stephensi</i>	Stephens' kangaroo rat	T	T		Y	N	N
<i>Ovis canadensis nelsoni</i>	Peninsular Bighorn Sheep	E	T	FP	Y	N	N
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	E	-	SSC	Y	N	N

¹ Sensitivity Status Key

ESA: E = Endangered; T = Threatened

CESA: E = Endangered; T = Threatened; R = Rare

Other:

California Rare Plant Rank (CRPR): Rank 1B = Plants rare, threatened, or endangered in California and elsewhere; Rank 2B = Plants rare, threatened, or endangered in California, but more common elsewhere; Rank 3 = Plants about which more information is needed (Review List); Rank 4 = Plants of limited distribution (Watch List). 0.1 = Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat); 0.2 = Moderately threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat); 0.3 = Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

SSC = California Department of Fish & Wildlife (CDFW) Species of Special Concern

FP = State Fully Protected

SP = State Specially Protected

WL = CDFW Watch List

BCC = U.S. Fish & Wildlife Service Bird of Conservation Concern

USFS Sensitive = U.S. Forest Service Sensitive Animal

BLM Sensitive = Bureau of Land Management Sensitive Animal

BGEPA = Bald and Golden Eagle Protection Act

- Southern Foredunes
- Southern Coastal Bluff Scrub
- Maritime Succulent Scrub
- Coastal Sage Scrub
- Big Sagebrush Scrub
- Buckwheat Scrub
- Alluvial Fan Scrub
- Desert Scrub
- Desert Dunes
- Badlands
- Chaparral
- Southern Maritime Chaparral
- Coastal Sage/Chaparral Mix
- Native Grassland
- Nonnative Grassland
- Open Oak Woodland
- Open Engelmann Oak Woodland
- Dense Engelmann Oak Woodland
- Coast Live Oak Forest
- Black Oak Forest
- Torrey Pine Forest
- Mountain Conifer Forest
- Coulter Pine Forest
- Mixed Oak/Coniferous Forest
- Big Cone Spruce
- Jeffrey Pine
- Eucalyptus Woodland
- Tecate Cypress Forest
- Meadow/Seep
- Southern Coastal Salt Marsh
- Alkali Marsh
- Freshwater Marsh
- Coast Live Oak Riparian Forest
- Riparian Forest
- Riparian Woodland
- Riparian Scrub
- Inland Water
- Shallow Bays
- Disturbed Wetlands
- Non-Vegetated Floodway/channel
- Beach-Saltpan
- Vernal Pool
- Disturbed
- Agricultural
- Bare Ground
- Landscaped/Ornamental
- Developed

Those land cover types that are not well defined by classification systems commonly used by practitioners in the region are defined below, for the purposes of the HCP Amendment, based on discussion with Wildlife Agencies:

- **Disturbed:** Disturbed habitat refers to any land in which the vegetative cover comprises less than 10% of the surface area (disregarding natural rock outcrops) and where there is evidence of soil surface disturbance and compaction (i.e., grading); or where the vegetative cover is greater than 10%, there is soil surface disturbance and/or compaction, and/or the presence of building foundations and/or debris (i.e., irrigation piping, fencing, old wells, abandoned farming or mining equipment). Vegetation on disturbed land (if present) will typically have a high predominance of nonnative, weedy species that are indicators of surface disturbance and/or soil compaction, such as Russian thistle (*Salsola tragus*), telegraph weed (*Heterotheca grandiflora*), mustard (*Brassica* spp.), castor bean (*Ricinus communis*), tumbleweed (*Amaranthus albus*), sweet fennel (*Foeniculum vulgare*), horehound (*Marrubium vulgare*), filarees (*Erodium* spp.), and sow-thistle (*Sonchus oleraceus*). Although nonnative grasses may be present on disturbed lands,

Table 3.2 Vegetation Communities and Cover Types within the Plan Area

Vegetation Communities and Other Cover Types¹	Plan Area (Acres)	Probable Impact Zone (Acres)²
<i>Riparian and Wetlands</i>	119,154	4,093
Alkali Playa	2,007	-
Beach/Coastal Dunes/Saltpan/Mudflats	1,319	94
Disturbed Wetland	191	24
Marsh	5,946	317
Meadows and Seeps	10,635	122
Non-Vegetated Channel	2,718	51
Open Water	26,418	438
Riparian Forest/Woodland	58,972	2,365
Riparian Scrub	10,875	670
Vernal Pools	72	13
<i>Uplands</i>	1,902,591	41,881
Badlands	46,075	-
Chaparral	822,591	15,592
Coastal Scrub	230,825	13,571
Desert Dunes	895	-
Desert Scrub	456,690	2,024
Forest/Woodland	203,954	2,461
Grasslands	130,350	7,917
Great Basin Scrub	11,212	315
<i>Other Cover Type</i>	794,185	306,935
Agriculture	139,636	10,594
Disturbed Habitat	13,719	2,370
Eucalyptus Woodland	2,348	650
Urban/Developed	638,482	293,321
Total³	2,815,930	352,909

¹ Appendix F provides a crosswalk showing the detailed habitat types that SDG&E has historically impacted relative to the grouping in Tables 4.4 and 4.5, below.

² The Probable Impact Zone (PIZ) is the defined area around existing SDG&E Facilities where impacts are reasonably likely to occur. Methodology for development of the PIZ is detailed in Section 4.1.3.2.

³ Values may not total due to rounding after summation.

they do not dominate the vegetative cover. Disturbed habitat is typically found in vacant lots, roadsides, and material storage areas.

- **Nonnative Grassland:** Nonnative grassland is characterized by a mixture of annual grasses and broad-leaved, herbaceous species. Nonnative grass species must constitute more than 50% of species present to constitute nonnative grassland. Annual species comprise from 50% to more than 90% of the vegetative cover, and most annuals are nonnative species. Nonnative grasses typically comprise at least 30% of the vegetation, although this number can be much higher in some years and lower in others depending on land use and climatic conditions. The presence of broad-leaved species (e.g., mustard) following winters of abnormally higher rainfall would still be classified as nonnative grassland if these species make up less than 50% cover. Shrubs and trees may also be present but represent a minority (less than 15%) of the vegetative and canopy cover. Nonnative grassland indicator

San Diego Gas & Electric HCP Amendment SDG&E Vegetation Communities and Cover Types Figure 6

Legend

- SDG&E Service Area
- Vegetation Communities and Land Cover Types**
- Riparian and Wetlands**
- Alkali Playa
- Beach/Coastal Dunes/Saltpan/Mudflats
- Disturbed Wetland
- Marsh
- Meadows and Seeps
- Non-Vegetated Channel, Floodway, Lakeshore Fringe
- Open Water
- Riparian Forest/Woodland
- Riparian Scrub
- Vernal Pools
- Uplands**
- Badlands
- Chaparral
- Coastal Scrub
- Desert Dunes
- Desert Scrub
- Forest/Woodland
- Grasslands
- Great Basin Scrub
- Other Cover Types**
- Agriculture
- Disturbed Habitat
- Eucalyptus Woodland
- Urban/Developed

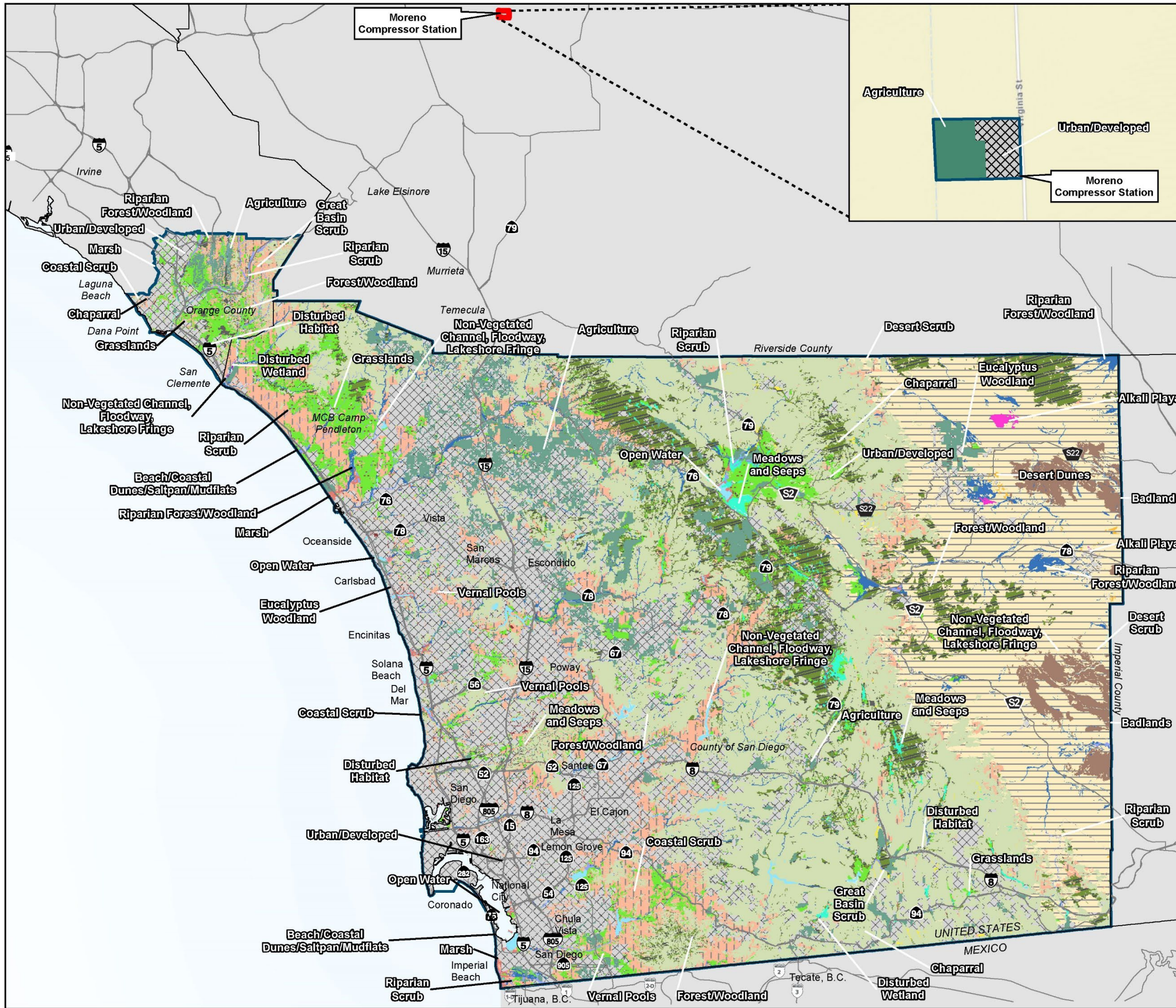


Data Date: 03/13/2020 Version Date: 10/28/2021



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species include brome grasses (*Bromus* spp.), wild oats (*Avena* spp.), fescues (*Vulpia* spp.), and filarees. Nonnative grassland typically supports habitat for small mammals, reptiles, and raptor foraging. Unimproved or natural grazing lands not subject to cultivation practices (see Agricultural definition) may still be classified as nonnative grassland.

- **Agricultural:** Agricultural habitat refers to lands that are currently disturbed by cultivation or other agricultural activities involving crop production practices and/or improvement of livestock grazing (e.g., field crops, improved pastures). Pastures fall into the agricultural heading if cultivation practices (e.g., discing, mowing, seeding, and irrigation or supplemental feeding and/or watering) are used periodically to improve land for livestock forage and result in a general absence of fossorial species availability for raptors and other predators. Agricultural habitat also includes agricultural practices that use relatively high amounts of labor and resources on relatively small areas of land, which tend to have significant permanent buildings and installations. Examples may include dairies, nurseries, cattle feedlots, and other confined animal feeding operations. Intentional plantings of trees, shrubs, or vines maintained for food production or commercial use, including orchards and vineyards, are also considered agricultural habitat types. These plantings tend to be perennial, can be artificially irrigated and fertilized, and usually do not involve intense annual soil disturbance. Lands that are not currently in production but that are identified as agriculture and have been cultivated in 3 of the last 5 years or according to accepted cultural practices will be considered fallow agriculture, regardless of species composition. Conversely, agricultural lands that have not been cultivated in 3 of the last 5 years, or that are proposed for conversion to non-agricultural land uses (e.g., residential, commercial, industrial), shall be mapped and mitigated according to the actual vegetation type (e.g., nonnative grassland) based on vegetative characteristics, without regard to current or historic land uses.
- **Bare Ground:** Bare ground land cover includes areas of native or imported soils that are unvegetated and consist of mostly exposed ground. These areas may include graded lands or land with other significant topsoil disturbance; naturally occurring bare areas; lands lacking biological value; lands subject to repeated and/or regular clearing for fuel management or O&M purposes (including unpaved access roads); maintained work areas, staging yards, equipment, and other construction-related Covered Activities; off-highway vehicles (OHVs) or hiking trails; and sites from old homes or other structures.
- **Developed:** Developed land refers to areas that have been permanently altered for human use and activities. Developed land may include paved parking lots, residential homes, commercial development and infrastructure, and paved roads.
- **Landscaped/Ornamental:** Landscaped/ornamental habitat includes intentionally planted areas generally associated with aesthetic improvements and urban development. Landscape/ornamental areas may include lawns, public parks, golf courses, aesthetic plantings associated with sidewalks, medians, residential or commercial developments or other city improvements (e.g., street trees), and golf courses.

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4 Impact Assessment

As a regional energy provider, SDG&E is responsible for the installation and O&M of Facilities that range from gas and electric transmission lines, local distribution networks, communications, and generation Facilities. The development and ongoing O&M of these Facilities, like all development, have impacts. To support the HCP Amendment process, a comprehensive analysis of Covered Activities and the associated impacts to Covered Species and their habitat is provided in the Covered Species Analysis (Appendix A). The Covered Species Analysis provides updated ecological information on each Covered Species, including its current status within the region and known threats or pressures to its continued survival. It then analyzes potential impacts of Covered Activities on Covered Species and their habitat.

As detailed below, to project future impacts over the remaining life of the HCP Amendment, the analysis relies in part on data collected over the first 23 years of implementation of the Subregional Plan. This approach was found to be an appropriate and conservative estimate of future impacts for several reasons. Because historical data, including both permanent impacts and temporary impacts that were fully restored, was used to estimate future permanent impacts, it overestimates permanent habitat impacts and is a conservative estimate of future potential impacts. In addition, virtually all major infrastructure is now largely in place and future impacts will be associated with O&M. To be conservative, projections of future impacts in this analysis assume the same level of New Construction and O&M impacts going forward and estimate that future New Construction impacts would be like those in past decades.

Moreover, impacts associated with energy development are not equated with typical commercial, industrial, and residential development. Typical development can permanently remove large areas of native vegetation, change the topography, and cover much of the developed area with impervious surfaces. In contrast, most of SDG&E's energy development occurs above or below the earth's surface with very small areas of permanent or temporary disturbance. In addition, impacts from energy development include narrow and unpaved access roads, habitat that continues to exist and grow in ROW, energy Facilities (except for generators) that are unoccupied and generate very little traffic, and little or no contribution to edge effects due to predatory pets or extensive human activity. Other than direct habitat loss, negative impacts that may occur from SDG&E's energy development are habitat fragmentation and provision of human/vehicle/equipment access to remote areas leading to potential exotic species invasion and destruction of habitat.

Construction impacts associated with SDG&E's energy development are also less than those of typical developments because (1) energy development projects are completed over a period of days rather than months or years as with other development projects, and (2) construction has less impact; for example, equipment and materials are often delivered by air, thereby minimizing ground disturbances.

4.1 O&M and New Construction Impact Assessment Methodology

The impact analysis herein is based primarily on SDG&E's historical data collected from 1996 through 2018. The historical data is used in conjunction with species habitat modeling data on Covered Species habitat distributions to further estimate potential species-specific impacts. Where appropriate (for example, species identified as having more specialized or restrictive habitat requirements and/or highly limited populations with specific known localities in the Plan Area), additional applicable data is used to further refine estimates of impacts and conclusions based thereon.

Using historical annual average impacts to habitat is a reliable, conservative predictor of anticipated annual average habitat impacts for the remaining duration of the permit term (through 2050). Past data includes habitat impacts associated with the construction of new Facilities to create and expand SDG&E's gas and power system. All major infrastructure is now largely in place, and SDG&E anticipates building new Facilities at a far lower rate than prior decades. Currently, SDG&E anticipates no new large-scale construction in the near term. Accordingly, past data, which incorporates impacts from Covered Activities that will not occur at the same rate in the future, likely overestimates future impacts. Nor is it likely that there will be any large, localized impact footprints associated with the creation of new Facilities that could significantly impact a localized population. In addition, impacts to Preserves and some Covered Species from New Construction may require a Minor Amendment consistent with Section 6.5.1.2 below, to ensure impacts to Preserves and these species are avoided and/or minimized.

Relatedly, in future years, SDG&E will be predominantly maintaining, repairing, and upgrading its existing system. Impacts associated with O&M are likely to be small and occur along long, linear lines across the 2,815,930-acre Plan Area. Given the nature of these Covered Activities, they are unlikely to significantly impact highly localized Covered Species.

In addition to summarizing historical impacts associated with Covered Activities from 1996 through 2018, the following sections describe methodologies for estimating future impacts through 2050 of HCP Amendment implementation for each Covered Species based on the historical and species habitat modeling data. In brief, for each Covered Species, the impact analysis followed a multi-step approach to estimate future impacts, summarized below:

- The analysis first provided an estimate of total Modeled Habitat for each Covered Species in the Plan Area (Section 4.1.3.1).
- It also established a Probable Impact Zone (PIZ), a defined area around existing SDG&E Facilities where impacts were reasonably likely to occur (Section 4.1.3.2).
- Quantified acreages of Modeled Habitat in the undeveloped portion of PIZ and the percentage of the undeveloped portion of PIZ that consisted of Modeled Habitat for each Covered Species were then quantified and multiplied by annual impact estimates to generate potential species-specific habitat impacts.

- Based on species abundance, available occurrence data, and other relevant factors for each Covered Species, the estimate of potential habitat impacts either became the final impact estimate or was further refined. More specifically:
 - For Covered Species that were wide-ranging in the Plan Area, the initial estimate was determined to be the final estimate of impacts.
 - For Covered Species with more specialized or restrictive habitat requirements and/or highly limited populations at known localities (including, e.g., narrow endemics species and vernal pool species):
 - Available occurrence data was summarized in the Plan Area and compared against the PIZ; and
 - From that comparison, a qualitative impact assessment was completed to address potential impacts to species.
- Applicable measures/protocols to avoid, minimize, or mitigate impacts to the Covered Species were then analyzed.

Based on these multiple steps, a conclusion was reached regarding the effect of future impacts through 2050 to the Covered Species as detailed in Appendix A.

4.1.1 Definitions of Permanent and Temporary Impacts

Covered Activities can result in permanent or temporary impacts to Covered Species and their habitat. Permanent and temporary impacts are defined as follows:

Permanent Impacts: Impacts resulting from Covered Activities that result in a permanent loss of habitat. These impacts generally alter soil, topography, and/or hydrological conditions, and typically result in areas maintained clear of vegetative growth and that may be impervious. Covered Activities resulting in permanent impacts occur when, for example, construction for the purposes of expanding, operating, and maintaining gas and electric infrastructure creates new access roads, installs or replaces electric overhead or underground Facilities or gas Facilities (not to include underground conduit), or removes habitat near Facilities for the purpose of fire prevention in areas of high fire potential or the presence of specific overhead hardware (e.g., pole brushing). Permanent impacts may also include injury or mortality of individual species.

Temporary Impacts: Impacts resulting from Covered Activities that do not result in permanent loss of habitat. Impacts associated with temporary habitat loss could include excavation, grading, repeated overland travel, extensive vegetation trimming/removal, or soil stockpiling that alters existing habitat, soils, topography, and hydrology for a period of time before reestablishing to preexisting conditions. For example, temporary impacts to Covered Species may arise from construction-related noise levels; construction-generated fugitive dust accumulation on surrounding habitat; and construction-related erosion, runoff, and sedimentation into plant communities. Impacts to species from Covered Activities would be temporary, as these impacts would end

with cessation of project construction and/or through successful post-construction restoration efforts.

Covered Activities can include overland travel with rubber-tired or tracked vehicles that due to low-intensity/duration may not be a measurable permanent or temporary habitat impact. For example, vegetation that is bent or peripherally damaged is not considered a measurable impact if it is limited enough to avoid causing mortality or habitat removal. In addition, vegetation trimming for footpath access to Facilities and routine tree trimming that does not remove individual shrubs/trees to the point of mortality are not considered measurable habitat impacts. It is considered a measurable habitat impact when individual shrubs or trees are completely removed or there is a potential to cause injury or mortality to a Covered Species. A Biologist will determine if impacts from overland travel or vegetation trimming will be considered no impact, temporary impacts requiring inclusion into the habitat Restoration and Enhancement Program (R/E Program) (see Section 5.2), or a permanent impact on a project-by-project basis through individual review of each Covered Activity just prior to its occurrence; the determination will be documented through Pre-activity Survey Report (PSR) process.

4.1.2 Historical Habitat Impacts

SDG&E has successfully implemented the Subregional Plan for more than 26 years since its approval in 1995. O&M and New Construction impacts that have occurred to various habitat types as a result of Covered Activities on existing and new Facilities are tracked in acres and were compiled for this impact analysis. Impacts to each habitat type are separated out by impact type (i.e., permanent versus temporary impacts). The majority of annual impacts resulting from Covered Activities have been temporary in nature (Table 4.1). Most Covered Activities tend to result in impacts (62%) to developed or disturbed land cover types (e.g., bare ground, developed, disturbed habitat). Consequently, less than 38% of historic impacts (on an annual average basis) under the Subregional Plan occurred to upland and riparian/wetland habitat (Table 4.1).

The overall average annual O&M and New Construction impacts to habitat across both temporary and permanent impact types on existing and new Facilities was 11.54 acres per year. Table 4.2 provides a detailed breakdown of each habitat type impacted under the Subregional Plan over the past two decades. The historical data demonstrates that SDG&E Operational Protocols have been effective in encouraging avoidance of riparian and wetland habitat, as very few permanent impacts have occurred to these habitat types. The primary upland habitat types impacted from 1996 through 2018 were chaparral, grassland, and coastal sage scrub (Table 4.2).

Table 4.1 SDG&E Subregional Plan Historical Impacts: New Construction and O&M Impact Summary 1996–2018 (acres)

Habitat Type	Total Temporary Impacts	Total Permanent Impacts	Average Annual Temporary Impacts	Average Annual Permanent Impacts	Percent Temporary of Total Impacts ²	Percent Permanent of Total Impacts ²	Total Impacts ³	Average Annual Impacts ³	Percent of Total Impacts ³
Habitat									
Riparian and Wetlands	4.08	1.09	0.18	0.05	0.58%	0.16%	5.18	0.23	0.74%
Uplands	150.79	109.49	6.56	4.76	21.52%	15.63%	260.28	11.32	37.15%
Habitat Subtotal	154.87	110.58	6.73	4.81	22.11%	15.78%	265.45	11.54	37.89%
Non-Habitat Type Subtotal ¹	396.12	39.04	17.22	1.70	56.54%	5.57%	435.16	18.92	62.11%
Total (Habitat and Non-Habitat) ⁴	550.99	149.62	23.96	6.51	78.64%	21.36%	700.61	30.46	100.00%

¹ Non-habitat impacts are shown for context and do not count towards the Subregional Plan impact cap.

² Percent of the combined total of temporary and permanent impacts (i.e., 700.61 acres).

³ Temporary and permanent impacts combined.

⁴ Values may not total due to rounding after summation.

Table 4.2 SDG&E Subregional Plan Historical Impacts: New Construction and O&M Detailed Impact Summary 1996–2018 by Habitat Type (acres)

Habitat Type	Total Temporary Impacts	Total Permanent Impacts	Average Annual Temporary Impacts	Average Annual Permanent Impacts	Percent Temporary of Total Impacts ²	Percent Permanent of Total Impacts ²	Total Impacts ³	Average Annual Impacts ³	Percent of Total Impacts ³
Riparian and Wetlands	4.08	1.09	0.18	0.05	0.58%	0.16%	5.18	0.23	0.74%
Alkali Marsh	0.06	<0.01	<0.01	<0.01	0.01%	<0.01%	0.06	<0.01	0.01%
Coast Live Oak Riparian Forest	0.36	0.03	0.02	<0.01	0.05%	<0.01%	0.39	0.02	0.06%
Disturbed Wetlands	0.33	0.03	0.01	<0.01	0.05%	<0.01%	0.36	0.02	0.05%
Freshwater Marsh	0.03	0.04	<0.01	<0.01	<0.01%	0.01%	0.07	<0.01	0.01%
Inland Waters	0.02	-	<0.01	-	<0.01%	-	0.02	<0.01	<0.01%
Meadow/Seep	0.43	<0.01	0.02	<0.01	0.06%	<0.01%	0.43	0.02	0.06%
Non-Vegetated Flood Channel	0.01	-	<0.01	-	<0.01%	-	0.01	<0.01	<0.01%
Riparian Forest	0.28	0.06	0.01	<0.01	0.04%	0.01%	0.34	0.01	0.05%
Riparian Scrub	1.86	0.32	0.08	0.01	0.27%	0.05%	2.18	0.09	0.31%
Riparian Woodland	0.44	0.19	0.02	0.01	0.06%	0.03%	0.64	0.03	0.09%
Southern Coastal Salt Marsh	0.27	<0.01	0.01	<0.01	0.04%	<0.01%	0.27	0.01	0.04%
Vernal Pool	<0.01	0.42	<0.01	0.02	<0.01%	0.06%	0.43	0.02	0.06%
Uplands	150.79	109.49	6.56	4.76	21.52%	15.63%	260.28	11.32	37.15%
Alluvial Fan Scrub	0.04	<0.01	<0.01	<0.01	0.01%	<0.01%	0.04	<0.01	0.01%
Big Sagebrush Scrub	1.53	0.25	0.07	0.01	0.22%	0.04%	1.78	0.08	0.25%
Black Oak Forest	0.06	0.03	<0.01	<0.01	0.01%	<0.01%	0.09	<0.01	0.01%
Buckwheat Scrub	1.95	1.02	0.08	0.04	0.28%	0.14%	2.96	0.13	0.42%
Chaparral	14.85	22.55	0.65	0.98	2.12%	3.22%	37.39	1.63	5.34%
Coast Live Oak Forest	1.11	0.25	0.05	0.01	0.16%	0.04%	1.37	0.06	0.20%

Habitat Type	Total Temporary Impacts	Total Permanent Impacts	Average Annual Temporary Impacts	Average Annual Permanent Impacts	Percent Temporary of Total Impacts ²	Percent Permanent of Total Impacts ²	Total Impacts ³	Average Annual Impacts ³	Percent of Total Impacts ³
Coastal Sage Scrub	35.75	33.28	1.55	1.45	5.10%	4.75%	69.03	3.00	9.85%
Coastal Sage Scrub/Chaparral Mix	6.74	8.93	0.29	0.39	0.96%	1.27%	15.67	0.68	2.24%
Coulter Pine Forest	<0.01	<0.01	<0.01	<0.01	<0.01%	<0.01%	<0.01	<0.01	<0.01%
Dense Engelmann Oak Woodland	0.03	<0.01	<0.01	<0.01	<0.01%	<0.01%	0.03	<0.01	<0.01%
Desert Scrub	2.30	3.72	0.10	0.16	0.33%	0.53%	6.02	0.26	0.86%
Grassland ⁴	82.64	38.51	3.59	1.67	11.80%	5.50%	121.15	5.27	17.29%
Jeffrey Pine Forest	0.01	0.01	<0.01	<0.01	<0.01%	<0.01%	0.02	<0.01	<0.01%
Maritime Succulent Scrub	0.03	0.04	<0.01	<0.01	<0.01%	0.01%	0.06	<0.01	0.01%
Mixed Oak/Coniferous Forest	0.48	0.07	0.02	<0.01	0.07%	0.01%	0.54	0.02	0.08%
Mountain Conifer Forest	0.08	0.02	<0.01	<0.01	0.01%	<0.01%	0.09	<0.01	0.01%
Open Engelmann Oak Woodland	0.35	0.01	0.02	<0.01	0.05%	<0.01%	0.36	0.02	0.05%
Open Oak Woodland	2.29	0.61	0.10	0.03	0.33%	0.09%	2.89	0.13	0.41%
Southern Coastal Bluff Scrub	-	<0.01	-	<0.01	-	<0.01%	<0.01	<0.01	<0.01%
Southern Maritime Chaparral	0.44	0.20	0.02	0.01	0.06%	0.03%	0.64	0.03	0.09%
Tecate Cypress Forest	0.11	<0.01	<0.01	<0.01	0.02%	<0.01%	0.11	<0.01	0.02%
Torrey Pine Forest	<0.01	-	<0.01	-	<0.01%	-	<0.01	<0.01	<0.01%
Non-Habitat Type¹	396.12	39.04	17.22	1.70	56.54%	5.57%	435.16	18.92	62.11%
Agricultural	19.24	0.13	0.84	0.01	2.75%	0.02%	19.37	0.84	2.76%
Bare Ground	137.27	10.44	5.97	0.45	19.59%	1.49%	147.71	6.42	21.08%
Developed	13.12	0.27	0.57	0.01	1.87%	0.04%	13.39	0.58	1.91%
Disturbed Habitat	188.70	21.00	8.20	0.91	26.93%	3.00%	209.70	9.12	29.93%
Eucalyptus Forest	0.40	0.29	0.02	0.01	0.06%	0.04%	0.68	0.03	0.10%
Landscape/Ornamental	16.70	6.79	0.73	0.30	2.38%	0.97%	23.49	1.02	3.35%
Pavement – Asphalt or Concrete	20.69	0.12	0.90	0.01	2.95%	0.02%	20.81	0.90	2.97%
Total (Habitat and Non-Habitat)⁵	550.99	149.62	23.96	6.51	78.64%	21.36%	700.61	30.46	100.00%

¹ Non-habitat impacts are shown for context and do not count towards the Subregional Plan impact cap.

² Percent of the combined total of temporary and permanent impacts (i.e., 700.61 acres).

³ Temporary and permanent impacts combined.

⁴ Grassland refers to both native and nonnative grasslands.

⁵ Values may not total due to rounding after summation.

Moreover, as detailed above, historical average annual impacts from O&M and New Construction likely overestimate impacts from New Construction as compared to future Covered Activities, which are expected to be overwhelmingly O&M on the existing system.

4.1.3 Potential Species Impacts

As discussed above, the gas and electric system is largely built out and construction of Facilities is essentially complete. Therefore, construction of new Facilities is not anticipated to occur at a rate on par with historical periods related to the development (rather than maintenance) of the system. Nonetheless, to be conservative, based on 23 years of historical data on existing and new Facilities, SDG&E assumes annual O&M and New Construction impacts through 2050 will be similar. Thus, averages of approximately 4.81 acres of permanent impacts and 6.73 acres of temporary impacts are expected on an annual basis as a result of Covered Activities, for a combined average of 11.54 acres of impacts on an annual basis. An estimate of impacts on habitat types can be directly extrapolated from the average annual impacts shown in Table 4.2. To refine the accuracy of the estimate of potential suitable habitat in the Plan Area, other factors beyond vegetation were considered, such as soil type and texture, elevation, slope, and ecoregion in the habitat modeling effort.

Section 4.1.3.1 provides an overview of how suitable habitat in the Plan Area is estimated for each Covered Species, using species habitat models. Section 4.1.3.2 describes how the modeled data is used in combination with historical data and the location of existing infrastructure to estimate the potential impacts to Covered Species habitat that could result from future Covered Activities. It is important to note that the use of habitat models only provides an estimate for analytical purposes.

Critically, however, the habitat modeling is not a substitute for a determination of actual impacts associated with a specific Covered Activity. Rather, actual impacts to Covered Species and their habitat will be quantified through individual review of each Covered Activity just prior to its occurrence and documented through the PSR process, as described in Section 5.1.3, and then summarized in the Annual Report. Thus, the analysis provided herein is for estimation purposes only.

4.1.3.1 Covered Species Habitat Modeling Methodology

This section summarizes the approach to estimating suitable habitat for Covered Species in the Plan Area. Ultimately, the goal of estimating suitable habitat acreage for each species is to quantify approximate potential impacts to each Covered Species resulting from Covered Activities for the remaining term of the existing permits.

County of San Diego Species Habitat Model

Approximate acreage of suitable habitat in the Plan Area was estimated through habitat modeling. As part of the San Diego MSCP, the County of San Diego developed species habitat models for more than 400 species known to occur within San Diego County. These habitat models generate species distribution outputs based on the habitat

requirements for each species. Specifically, the model habitat requirements consider six key environmental factors: vegetation, soil type, soil texture, elevation, slope, and ecoregion.

Regional data sources from the U.S. Department of Agriculture (USDA) and USGS are used to create data layers for each of the habitat factors used in the model, except for vegetation. The vegetation mapping layer incorporated into the habitat models is based on the classification system defined by Holland (1986), as modified by Oberbauer et al. (2008).

The models were originally developed by Technology Associates in cooperation with USFWS, CDFW, local jurisdictions in the San Diego region, and various consulting and academic biologists. The current versions of the species habitat model outputs, as of August 2, 2019, were obtained directly from the County of San Diego and added to the HCP Amendment's database to facilitate species-specific analyses.

Pacific Pocket Mouse Model

During coordination with USFWS, it was determined that a suitable habitat data layer from Marine Corps Base Camp Pendleton (MCBCP) was available for use. Suitable habitat data was acquired from MCBCP and was used for the habitat modeling specific to Pacific pocket mouse. Habitat polygons created by the USGS as part of a proposed management complex effort provided a more accurate representation of suitable habitat for this species; therefore, this dataset was used in place of the County model.

Peninsular Bighorn Sheep Essential Habitat

During coordination with USFWS, it was determined that peninsular bighorn sheep essential habitat provides the best representation of suitable habitat for this species. Essential habitat includes critical habitat and also extends beyond critical habitat boundaries to include areas that provide the physical and biological resources peninsular bighorn sheep require. The boundary was based on mapping of areas of 20% slope or greater as well as areas needed for peninsular bighorn sheep movement and is a more accurate representation of suitable habitat than the County model. Therefore, essential habitat was used in place of the County model.

County of San Diego Species Habitat Model Limitations and Associated Modifications

As with any ecological model, the outputs of the species habitat models have several limitations. First, the vegetation mapping used in the models is from a 1995 regional mapping effort that did not reflect more recent vegetation mapping efforts conducted in areas of San Diego County. Second, some areas within San Diego County have undergone urbanization or conversion to agriculture since 1995 and the vegetation layer from 1995 had not been updated to reflect post-1995 urbanization or agricultural development (these areas were still mapped as vegetation). Third, the existing species habitat models did not include two species proposed for coverage or the portion of the

Plan Area that extends into Orange County. These limitations, and modifications to address the limitations, are addressed in more detail below.

Vegetation Mapping

To summarize regional vegetation mapping efforts in San Diego County, two major vegetation mapping efforts have been used to describe existing conditions for vegetation communities in the San Diego region: (1) 2014 data, which covers much, but not all, of the western one-third of the region and uses a classification system of groups, alliances, and associations based on the National Vegetation Classification Standard and the California Manual of Vegetation (Sawyer et al. 2009; Sproul et al. 2011; SANDAG/SanGIS 2020); and (2) 1995 data modified and enhanced over the years from a variety of sources and that covers the entire region and uses the Holland classification system (Holland 1986; Oberbauer et al. 2008; SANDAG/SanGIS 2020).

After evaluation, further refining of the vegetation mapping with other information would not improve species habitat model outputs, as the vegetation categories the model uses are very broad. For example, the 168 vegetation classifications in the 1995 vegetation data set are consolidated into 18 vegetation groups for the model. The 2014 vegetation mapping effort divides vegetation communities into more detail, but once these categories are consolidated into the 18 categories used for the model, they are not materially different from the 1995 vegetation data.

Urbanization and Agricultural Conversion

To address the urbanization and agricultural conversion that occurred since 1995, the most recent San Diego Association of Governments (SANDAG) land use layer was used to remove urban or agricultural development from potential suitable habitat outputs. This three-step process included the following:

1. 2018 SANDAG/SanGIS Regional GIS Data Warehouse land use layers were used to identify parcels coded as urban/developed or agricultural land. The 2018 land use layer (published on May 14, 2019) was the most recent data available at the time of development (SANDAG/SanGIS 2020). Appendix G details which land use classifications are categorized as undeveloped and developed for purposes of this exercise. Agriculture land use categories Orchard or Vineyard, Intensive Agriculture, and Field Crops were considered developed for purposes of this exercise. It is understood that some species may use agriculture settings.

One agriculture land use category in the County of San Diego model includes all agricultural categories in the Holland classification system lumped together as one and therefore models potential suitable habitat in agricultural areas. Specifically, the model predicts species to occur within agriculture (e.g., burrowing owl). However, because all agriculture categories are combined, the model likely overestimates the suitability of habitat for these species. In addition, as described above, vegetation in the model is based on 1995 data, so some native vegetation (e.g., chaparral or grassland) may have been converted to agriculture since 1995. Not removing agriculture would overestimate Modeled

Habitat for species that use other habitat types that may have been converted to agriculture. Therefore, it was determined that, for an analysis at this scale, it would best to remove Modeled Habitat from the agriculture categories defined above, given that, ultimately, the PSR process will evaluate every project based on conditions at the time of the site visit.

2. The most recent conserved lands layer (published on September 23, 2019) from the SANDAG/SanGIS Regional GIS Data Warehouse Conserved Lands database was used to identify permanently conserved portions of parcels that had been coded as a developed land use (SANDAG/SanGIS 2020). The purpose of this step was to correct situations in which an entire parcel is coded in the land use data as a developed land use, but a portion of the parcel is vegetation that is subject to permanent conservation (e.g., a conservation easement). This was an important step to ensure that potential habitat was identified in species habitat model outputs. The process did not correct for situations where vegetation communities remain within a developed parcel and are not legally conserved, and thus are not trackable through SANDAG's Conserved Lands database.
3. A revised 2018 land use layer, with SANDAG's Conserved Lands removed, was then used to remove urban and/or agricultural development from model outputs.

Expanding County of San Diego Models into Orange County for All Covered Species

Expanding the model to include the portion of the Plan Area that extends into Orange County required creating the same data layers for Orange County that were used for the County of San Diego model. As previously mentioned, the model used six key environmental factors for generating a habitat map. These factors along with the sources of data for the portion of the Plan Area that extends into Orange County were as follows:

- **Vegetation** – Vegetation mapping was completed by Dave Bramlett and Jones & Stokes in 1992 (Bramlett and Jones & Stokes 1993). This map was updated in 2012 for habitat located in both the central and coastal subregions of Orange County by Aerial Information Systems (2015).
- **Ecoregion** – Ecoregion maps available from USGS (Griffith et al. 2016) were modified to match those from San Diego County.
- **Elevation** – Elevation categories were generated using 1/3 arc-second (approximately 10 meters) resolution Digital Elevation Models (DEMs) from USGS (2019).
- **Topography** – Topography was generated using USGS DEMs.
- **Soil Texture** – Soil texture maps were generated from USDA data from Wachtell (1978).
- **Soil Parent Material** – Soil parent material was identified in the USDA soil descriptions (Wachtell 1978) and used to generate soil parent material maps.

Species Habitat Model Methodology Conclusions

The best publicly available model data to predict species habitat in the Plan Area was used for this analysis. Additional species-specific models were considered, such as those K. Preston (2017) is currently developing for coastal cactus wren (*Campylorhynchus brunneicapillus*) and coastal California gnatcatcher (*Poliioptila californica californica*). However, other models being developed have not yet undergone peer review or were not available for public use at the time the data analysis was conducted. Thus, while the model outputs cannot be used to definitively identify occupied habitat, the County of San Diego species habitat models represent the best publicly available data to generate maps of potential suitable habitat for Covered Species for purposes of this analysis.

4.1.3.2 Estimating Impacts to Covered Species Habitat

Probable Impact Zone

The HCP Amendment evaluated potential impacts associated with both O&M, New Construction and Wildfire Fuels Management. To estimate potential impacts to Covered Species and their habitat in the boundaries of the Plan Area, SDG&E first established a PIZ around all existing SDG&E Facilities. The PIZ widths and corridors identified in Table 4.3 were measured from the center of infrastructure and represent the maximum area within which Covered Activities typically occur. SDG&E then modeled species habitat in the Plan Area and identified where habitat occurred within the PIZ.

Table 4.3 Assumptions for Establishing the Probable Impact Zone (PIZ)

Facility Type	Total Linear Distance in Plan Area (miles)	PIZ Width (feet)	Total PIZ Corridor Width (feet)¹
<i>Linear Facilities</i>			
Electric Distribution (Overhead and Underground)	23,325	25	50
Electric Transmission (Overhead and Underground)	2,241	200	400
Gas Distribution and Transmission (Underground)	8,652	150	300
Telecommunication (Overhead and Underground)	478	25	50
Access Roads	1,337	20	40
<i>Non-linear Facilities</i>			
Electric Substations	NA	50	NA
Gas Regulator/Compressor Stations ²	NA	50	NA

NA = not applicable

¹ Corridor width is two times the PIZ width.

² The Moreno Compressor Station was not included in the PIZ because the potential impact footprint for any expansion of this Facility is known. See Section 4.1.3.3 for details.

SDG&E's electric and gas Facilities are extensive and have easements and ROW, with width varying depending on many factors, including, *inter alia*; underlying land ownership; year issued; voltage/pressure of the line or pipe, respectively; and potential for future expansion. To develop a more consistent analysis, the PIZ standardized the widths for each type of Facility. It then buffered beyond that standard width to capture potential impacts that may occur outside of the easement.

The PIZ captures all components associated with linear infrastructure, such as poles and towers, guy wires, and gates. The PIZ also extends 50 feet from existing substations and regulator and compressor stations. In cases where PIZs overlap, they were merged into a single PIZ boundary using geographic information system (GIS) software. The resulting PIZ encompasses 352,909 total acres in the 2,815,930-acre Plan Area.

Quantification of Modeled Habitat Impacts

The PIZ as detailed above includes many areas that consist of developed or agricultural cover types; this provides a conservative approach for identifying known Covered Species occurrences that have potential to occur in the PIZ. However, the PIZ is overly conservative when calculating impact acreages of Modeled Habitat relative to the PIZ because the Covered Species habitat models do not include developed and agricultural cover types.

Accordingly, SDG&E eliminated developed and agricultural cover types from the PIZ to more accurately quantify impact acreages of Modeled Habitat. In San Diego County, SDG&E removed developed and agricultural cover types from the PIZ using the steps for the Modeled Habitat described under the "Urbanization and Agricultural Conversion" discussion in Section 4.1.3.1. For the portion of the PIZ in Orange County, SDG&E used vegetation mapping (see Section 4.1.3.1) to remove developed and agricultural cover types. After removing these cover types, SDG&E determined that approximately 48,665 acres of the 352,909-acre PIZ consists of potentially suitable habitat for Covered Species. SDG&E used 48,665 acres to quantify the proportion of Covered Species Modeled Habitat outputs that are present within the undeveloped portion of the PIZ (i.e., the portion of the PIZ that excludes developed and agricultural cover types and consists of habitat for Covered Species).

To calculate species-specific habitat impacts resulting from Covered Activities, SDG&E used GIS software to overlay the undeveloped portion of PIZ on species habitat models (described in Section 4.1.3.1). SDG&E then quantified the percentage of the undeveloped portion of PIZ that consisted of potentially suitable habitat for each Covered Species. SDG&E then multiplied this percentage by the total annual impact (all of which were assumed permanent) and temporary impact estimates as reported in Table 4.1 (i.e., 11.54 acres and 6.73 acres of impacts per year on existing and new

1. Review Annual Reports and Calculate Historical Impacts

Habitat Type	Average Annual Temporary Impacts	Average Annual Permanent Impacts	Average Annual Impacts
Riparian and Wetlands	0.18	0.05	0.23
Uplands	6.56	4.76	11.32
Total	6.73	4.81	11.54

2018 NCCP Summary 55 Year Permit Report

Year	Remaining Impact Bank (Acres)	Deduction (Acres)
1995	400,000	0,000
1996	394,167	5,833
1997	394,046	0,121
1998	393,558	0,488
1999	393,090	0,468
2000	391,808	1,282
2001	383,227	7,818
2002	382,494	2,744
2003	376,987	3,597
2004	378,362	1,525
2005	326,052	49,310
2006	296,054	27,998
2007	291,646	6,410
2008	292,308	9,298
2009	263,773	19,590
2010	244,623	19,150
2011	236,728	7,895
2012	227,991	8,737
2013	214,937	13,054
2014	208,512	16,525
2015	186,267	19,244
2016	182,014	29,248
2017	154,274	4,630
2018	134,547	19,727

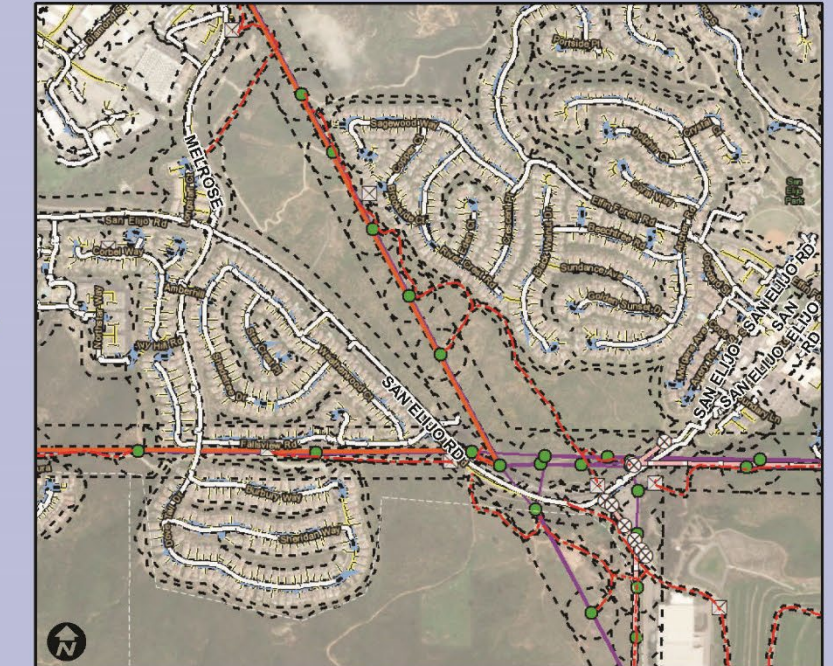
1996 - 2018 Reports and Impact Data

2. Modeling to Estimate Covered Species Habitat in Plan Area



Modeled Habitat 2019 County of San Diego Species Model

3. Probable Impact Zone (PIZ)



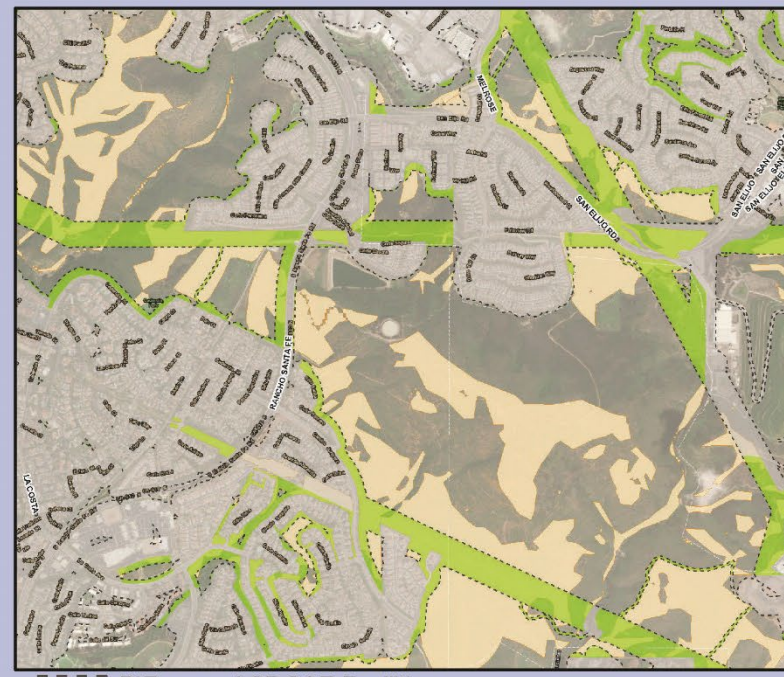
PIZ around SDG&E Facilities

4. Extent of PIZ Undeveloped (i.e., in Habitat): 48,665 acres



PIZ around SDG&E Facilities Developed Undeveloped

5. Calculate Extent of Undeveloped PIZ Supporting Modeled Habitat

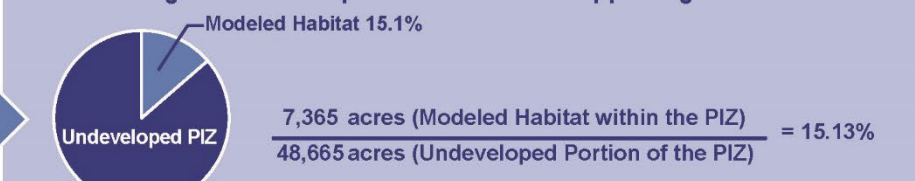


PIZ around SDG&E Facilities Modeled Habitat Developed Undeveloped

6. Calculate Species-Specific Impacts

$$\% \text{ of undeveloped PIZ supporting Modeled Habitat} \times \text{Average Annual Impacts} = \text{Predicted Acres of Modeled Habitat Impacts Per Year}$$

Example: Coastal California Gnatcatcher
1. Percentage of Undeveloped Portion of PIZ Supporting Modeled Habitat



2. Permanent Impacts to Coastal California Gnatcatcher Habitat:

$$15.13\% \times 11.54 \text{ acres}^1 = 1.75 \text{ acre/year}$$

3. Temporary Impacts to Coastal California Gnatcatcher Habitat:

$$15.13\% \times 6.73 \text{ acres} = 1.02 \text{ acre/year}$$

¹To be conservative it was assumed that all historical impacts were permanent impacts.

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Facilities, respectively), to generate species-specific habitat impacts (Figure 7).⁵ To be conservative and account for any unanticipated impacts that may not be included when using the overlay of Modeled Habitat within the PIZ, SDG&E then added a 15% buffer to the anticipated annual impacts. The following is an example of this calculation for both permanent and temporary impacts, using the coastal California gnatcatcher:

Example Calculation of Species-Specific Habitat Impacts:

1. Average Annual Impacts:

- Permanent = 11.54 acres per year (see Table 4.1)⁶
- Temporary = 6.73 acres per year (see Table 4.1)

2. Coastal California Gnatcatcher Modeled Habitat within PIZ: 7,365 acres

3. Percentage of Undeveloped Portion of PIZ Supporting Modeled Habitat⁷:

$$\frac{7,365 \text{ acres (Modeled Habitat within the PIZ)}}{48,665 \text{ acres (Undeveloped Portion of the PIZ)}} = 15.13\%$$

4. Average Annual Impacts to Coastal California Gnatcatcher Habitat:

- Permanent: 11.54 acres (Average Annual Impacts) x 15.13% (% of undeveloped portion of PIZ Supporting Modeled Habitat) = 1.75 acres/year x 15% (Unanticipated Impacts Buffer) = 2.01 acres/year [Table 4.4; Appendix A (Covered Species Analysis), Attachment B]
- Temporary: 6.73 acres (Average Annual Impacts) x 15.13% (% of undeveloped portion of PIZ Supporting Modeled Habitat) = 1.02 acres/year x 15% (Unanticipated Impacts Buffer) = 1.17 acres/year [Table 4.4; Appendix A (Covered Species Analysis), Attachment C]

5. Total Impacts to Coastal California Gnatcatcher Habitat:

- Permanent: 2.01 acres/year x 30 years = 60.26 acres [Table 4.4; Appendix A (Covered Species Analysis), Attachment B]
- Temporary: 1.17 acres/year x 30 years = 35.14 acres [Table 4.4; Appendix A (Covered Species Analysis), Attachment C]

This approach is based on two underlying concepts. First, it assumed that impacts and suitable habitat are distributed uniformly in the PIZ. Actual impacts and suitable habitat

⁵ The anticipated annual impacts are provided to demonstrate how total impacts were calculated and to provide an indication of the anticipated average annual impacts; however, the limit on impacts in the HCP Amendment is based on total cumulative impacts, not annual impacts.

⁶ To be conservative, it was assumed that all historical impacts were permanent impacts.

⁷ Removing developed and agricultural cover types from the PIZ for quantification of impacts allows for a more conservative estimate of impacts because, ultimately, impact acres are based on the proportion of Modeled Habitat within the PIZ. If the acres of Modeled Habitat within the PIZ were divided by the total 352,909 acres within the PIZ, then the percentage of Modeled Habitat within the PIZ would be reduced. This would consequently reduce the impact acreages calculated in step number 4.

are not uniformly distributed in the PIZ, and therefore species impacts each year may differ from the annual estimates calculated by this analysis, depending on the actual location of Covered Activities.

Second, the majority of historical impacts from O&M have occurred within the PIZ and it is reasonable to conclude the PIZ represents the area where the Covered Activities (i.e., O&M) are expected to take place over the remaining duration of the permit term. While most O&M would occur within the PIZ, New Construction may occur both within and outside the PIZ. The methodology described herein utilizes historical data for both O&M and New Construction impacts to habitat between 1996 and 2018 in the PIZ to estimate future habitat impacts.

To estimate the proportion of permanent impacts that could arise from New Construction versus O&M impacts, SDG&E analyzed historical data for New Construction impacts between 1996 through 2018. Those data showed that average permanent impacts from New Construction was approximately 2.21 acres per year. Going forward, SDG&E assumed all New Construction would occur outside the PIZ. Even though future New Construction is not expected to occur at the same rate as in the past, to be conservative it multiplied the 2.21 acres by 30 years (which is the remaining term of the Subregional Plan to the nearest decade), yielding a total 66.3 acres of permanent impacts. These impacts were estimated to occur to habitat from New Construction outside the PIZ, which represents approximately 16.6% of the overall 400 acres of permanent impacts to habitat. For each species, SDG&E calculated permanent impacts from New Construction by multiplying the annual impacts from Covered Activities by the proportion of impacts expected to occur from New Construction that SDG&E assumed would occur outside the PIZ (i.e., 16.6%).

SDG&E currently anticipates no new, large-scale construction in the near term or in future years requiring coverage under the HCP Amendment. Nonetheless, New Construction is considered, with limits discussed below, because it is possible that construction of new electric, gas, or other power generation or storage Facilities may be planned, sited, or routed in the Plan Area. The location/siting of new Facilities is dictated by and limited to the development approvals of such projects, and SDG&E often has limited control over the siting of these Facilities. The HCP Amendment, however, includes several limitations on New Construction to minimize its potential impacts (see Sections 5.1.11, 5.1.12, and 5.1.13; 5.4.2; and 6.5.1.3). For example, new Facilities that are within part of a Preserve or Proposed Preserve cannot impact more than 1.75 acres without a minor amendment. Nor does the HCP Amendment allow any impacts from New Construction anywhere in the Plan Area for narrow endemic plant species, vernal pool species, Hermes copper butterfly, Laguna Mountains skipper, arroyo toad, light-footed Ridgway's rail, tricolored blackbird, western yellow-billed cuckoo, Pacific pocket mouse, or Stephens' kangaroo rat. Moreover, the 400 acres of allowed permanent impacts further constrains New Construction as it would have to be balanced with what is needed for O&M impacts.

4.1.3.3 Moreno Compressor Station Impact Methodology

The Moreno Compressor Station, located in western Riverside County, encompasses approximately 20 acres of the Plan Area. The Moreno Compressor Station is a stand-alone parcel that is not contiguous with the remainder of the Plan Area. Approximately 14 acres of the property is developed, and the remaining portion of the property consists of sparse, disturbed vegetation and flat, bare terrain that has been disturbed by agricultural activity for more than 26 years.

Given the defined nature of the property and the known habitat impacts from expansion of the Facility, it was not necessary to implement the Covered Species habitat modeling effort and associated impact methodology at this location. The potential presence of each Covered Species in this portion of the Plan Area was instead evaluated based on a desktop analysis of each Covered Species' habitat requirements, an evaluation of current vegetation community and land cover conditions, and historical data collected by SDG&E over the last several years. Habitat impacts of 5 acres were assumed for each Covered Species identified as having suitable habitat in this portion of the Plan Area.

Actual habitat impacts in this portion of the Plan Area will be quantified and documented through individual review of each Covered Activity just prior to its occurrence through the PSR process, and will be specific to each individual project, as described in Section 5.1.3.

4.2 O&M and New Construction Impacts to/Take of Covered Species⁸

SDG&E has implemented the Subregional Plan's Operational Protocols for more than 26 years; as a result, its Covered Activities have resulted in very few (< 10) direct impacts to/take (mortality) of individual Covered Species over that time. Although direct impacts to/take is anticipated to remain minimal, Covered Activities will likely result in habitat impacts that may result in take of Covered Species when incidental to implementation of the HCP Amendment.

As with the Subregional Plan, the HCP Amendment remains intended to avoid incidents resulting in impacts to/take of Covered Species whenever possible and to implement measures to minimize and mitigate any impacts to the maximum extent possible. As fully explained in the Covered Species Analysis appended as Appendix A hereto and incorporated herein by reference, implementation of the HCP Amendment is not anticipated to appreciably reduce the numbers, reproduction, or distribution of any

⁸ There are no prohibitions under the ESA for the take of listed plants on non-federal lands, unless taking of those plants violates state law. Before USFWS issues a permit, however, the effects of the Proposed Action on ESA-listed plants must be analyzed, because Section 7 of the ESA requires that issuance of an ITP not jeopardize any Listed Species, including plants. Here, there are 16 Covered Species of plants under the HCP Amendment, of which 14 are listed as endangered or threatened under the ESA. The HCP Amendment uses the phrase "impacts to/take of Covered Species" to account for impacts to both plant species (for which USFWS does not authorize take) and wildlife species (for which USFWS can authorize take).

Covered Species population in the Plan Area or rangewide or impair the function of designated critical habitat to the species' survival or recovery.

Impacts to/take of certain Covered Species designated in Table 3.1 as narrow endemic or vernal pool plant species, Laguna Mountains skipper, Hermes copper butterfly, arroyo toad, southwestern willow flycatcher, light-footed Ridgway's rail, western yellow-billed cuckoo, tricolored blackbird, western pond turtle, California red-legged frog, Stephens' kangaroo rat, or Pacific pocket mouse will be limited to unavoidable impacts from repairs to existing Facilities. For New Construction projects, impacts to/take of these Covered Species would not be covered by the HCP Amendment, unless reviewed and approved by the USFWS through a Minor Amendment consistent with Section 6.5.1.2.

As noted above, the supplemental Covered Species Analysis, Appendix A hereto, is fully incorporated by reference and is designed to be read as part of Section 4. It further discusses and analyzes impacts to Covered Species. Specifically, the Covered Species Analysis provides detailed and updated information regarding the potential effects of Covered Activities to Covered Species and their habitat as a result of SDG&E's continued implementation of the HCP Amendment. As previously noted, the Covered Species Analysis provides updated ecological information on each Covered Species, including its current status within the region, known threats or pressures to its continued survival, and potential effects of Covered Activities on the Covered Species and its habitat. The Covered Species Analysis considers SDG&E's longstanding conservation strategy for avoidance, minimization, and mitigation of impacts resulting from Covered Activities and includes the vernal pools, narrow endemic plant, and Species-Specific Protocols as described in Sections 5.1.11, 5.1.12, and 5.1.13, respectively, that will be incorporated to enhance current practices.

4.2.1 Animals

Habitat impacts and take of Covered Species of animals will likely occur as a result of Covered Activities⁹ and may include death or harm consistent with the legal definitions. Take from direct killing of or injury to individuals may result from collision with vehicles or equipment or from being crushed during habitat disturbance. Ground-dwelling wildlife species may become trapped and entombed within their burrows. The direct killing or injury to individuals, however, has been exceedingly rare over the past 26 years and is likely to be the least common impact to species.

Indirect impacts, however, will likely occur as an unavoidable and unintentional consequence of conducting certain Covered Activities, including the operation of machinery and equipment, and their associated noise. Indirect impacts may occur in the form of elevated noise, dust, and lighting levels; changes in hydrology, runoff, and sedimentation; decreased water quality; soil compaction; increased human activity; and the introduction of invasive plants. Noise, nighttime lighting, dust, sedimentation, and erosion from nearby construction and equipment operation or new permanent Facilities

⁹ Covered Activities, including installation, use, maintenance, and repair of Facilities, are more fully described in Section 2.

may degrade the surrounding habitat and could negatively alter breeding behavior and movement patterns. Displacement may occur when habitat for individuals is removed and/or they move away from impacts from edge effects and are subsequently forced to compete with resident animals for food and living space.

Although less common due to the linear nature and permeability of many of SDG&E's Facilities and the restoration efforts following post-construction, habitat fragmentation may also indirectly impact Covered Species. Increased human presence, construction-generated noise and nighttime lighting, and edge effects associated with new Facilities may negatively affect species distribution, habitat connectivity, and wildlife movement.

Table 4.4 provides estimated permanent and temporary impact acreages to Covered Species Modeled Habitat in the Plan Area based on the methodology described in Section 4.1. See Sections 3 through 6 of the Covered Species Analysis (Appendix A) for additional detailed analysis of potential impacts, including estimated habitat acreage impacts, to Covered Species of wildlife.

4.2.2 Plants

In contrast to prohibitions on take of listed fish and wildlife (including that which may result from habitat modification), under the federal ESA (16 U.S.C. Section 1531, *et seq.*), it is only unlawful for any person to “remove and reduce to possession endangered plant species from areas under federal jurisdiction; maliciously damage or destroy any such species on any such area; or remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law.” 16 U.S.C. Section 1538(a)(2)(B).

Direct impacts to individual plants (including mature individuals, bulbs, and viable seeds) may occur from equipment and vehicle crushing and from vegetation trimming required during execution of Covered Activities. Indirect impacts to individual plants may include the introduction of exotic species, soil compaction of suitable soils within proximity to individual plants or populations, and dust cover associated with ground disturbance. Exotic species can quickly establish in disturbed habitat and will outcompete native plant species for resources. Dust settlement atop native habitat associated with ground disturbance may affect overall plant health by interfering with photosynthesis, respiration, and transpiration processes. Runoff, sedimentation, and erosion can also adversely impact plant populations by damaging individuals or by altering site conditions sufficiently to favor other species (native and exotic nonnatives) that would competitively displace the sensitive plant species.

Table 4.4 provides estimated permanent and temporary impact acreages to Covered Species Modeled Habitat in the Plan Area based on the methodology described in Section 4.1. See Section 2 of the Covered Species Analysis (Appendix A) for additional detailed analysis of potential impacts, including estimated habitat acreage impacts, to Covered Species of plants.

4.2.3 Impacts to Habitat

Covered Activities will likely result in impacts to the habitats of Covered Species. Impacts to habitat, including but not limited to, grading, excavation, and erosion, along with human access to restricted areas, will likely occur in some areas as a result of Covered Activities. Modification of habitat may reduce the prey base or other biological resources for Covered Species and thereby affect an individual's ability to survive. Implementation of the Operational Protocols in Section 5.1 will avoid or reduce these impacts to the maximum extent possible. Unavoidable habitat impacts will be mitigated, as described in Sections 5.2 and 5.5.

In support of the HCP Amendment, SDG&E evaluated 23 years of data from temporary and permanent impacts that occurred due to Covered Activities. Based on the changes in climate, such as prolonged droughts and an increase in the frequency and severity of wildfires in the region, SDG&E began to focus on O&M that would fire harden the existing electric system within the SDG&E service area. Except for the addition of a Wildfire Fuels Management, Covered Activities remain substantially the same. Therefore, reliance on historic impact data is an appropriate way to extrapolate future impacts.

SDG&E considered historical annual average impacts to habitat to be a good estimator of anticipated annual average habitat impacts for the duration of the HCP Amendment term. This assumption was reasonable for several reasons: (1) Existing data included impacts that did not result in permanent loss of habitat, thereby overstating permanent habitat impacts from Covered Activities; (2) All major infrastructure is now largely in place; and (3) SDG&E does not anticipate new, major projects that would create large impacts. Future impacts will predominantly be associated with O&M and are likely to be small and distributed along linear areas across the Plan Area.

To estimate impacts through 2050 (the term of the HCP Amendment), SDG&E assumed that future impacts to vegetation communities would be similar to historical impacts. With the assumption that all historical impacts were permanent impacts, to be conservative the historical annual average was extrapolated over 30 years (approximately 11.54 acres per year, for a total of 346 acres of permanent impacts over 30 years) (Table 4.5). This initial estimate was then increased to accommodate reasonable and unanticipated impacts. Specifically, to provide for any unanticipated impacts from HCP Amendment implementation through 2050, a 15% buffer (52 acres) was added to the anticipated total (Table 4.5). Thus, based on historical data and the additional acreage buffer, approximately 400 acres of permanent impacts are estimated to occur to vegetation from HCP Amendment implementation through 2050 (Table 4.5). As discussed in Section 4.1.3.2, based on reviewing historical data and assuming New Construction would occur at the same annual rate moving forward, SDG&E anticipates that approximately 66 acres of permanent impacts from New Construction will occur from HCP Amendment implementation through 2050.

Table 4.4 Anticipated Permanent, Temporary, and Wildfire Fuels Management Species Impacts (acres)

Common Name	Scientific Name	Permanent Impacts ¹					Temporary Impacts ¹			Wildfire Fuels Management ¹		
		Annual Impacts ^{2,3}	Total O&M and New Construction Impacts through 2050 ^{3,5}	O&M Impacts through 2050	New Construction Impacts through 2050	Percentage of Modeled Habitat Impacted through 2050 ⁶	Annual Impacts ^{2,3}	Impacts through 2050 ^{3,5}	Percentage of Modeled Habitat Impacted through 2050 ⁶	Annual Impacts ⁴	Impacts through 2050 ^{3,5}	Percentage of Modeled Habitat Impacted through 2050 ⁶
Plants												
San Diego thorn-mint	<i>Acanthomintha ilicifolia</i>	1.35	40.58	33.84	6.74	0.09%	0.79	23.66	0.05%	0.71	21.40	0.05%
San Diego ambrosia	<i>Ambrosia pumila</i>	0.18	5.54	4.62	0.92	0.06%	0.11	3.23	0.03%	0.10	2.92	0.03%
Del Mar manzanita	<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>	0.23	7.02	5.85	1.17	0.16%	0.14	4.10	0.09%	0.12	3.70	0.08%
Encinitas baccharis	<i>Baccharis vanessae</i>	0.44	13.09	10.92	2.17	0.03%	0.25	7.63	0.02%	0.23	6.90	0.01%
Thread-leaved brodiaea	<i>Brodiaea filifolia</i>	0.30	8.92	7.44	1.48	0.11%	0.17	5.20	0.06%	0.16	4.71	0.06%
Salt marsh bird's-beak	<i>Chloropyron maritimum</i> ssp. <i>maritimum</i> (<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>)	0.01	0.24	0.2	0.04	0.04%	<0.01	0.14	0.02%	-	-	-
Orcutt's spineflower	<i>Chorizanthe orcuttiana</i>	0.09	2.62	2.19	0.43	0.14%	0.05	1.53	0.08%	0.05	1.38	0.07%
Otay tarplant	<i>Deinandra conjugens</i> (<i>Hemizonia conjugens</i>)	0.10	3.02	2.52	0.5	0.15%	0.06	1.76	0.08%	0.05	1.60	0.08%
Short-leaved dudleya	<i>Dudleya brevifolia</i>	0.09	2.84	2.37	0.47	0.14%	0.06	1.65	0.08%	0.05	1.50	0.07%
San Diego button-celery	<i>Eryngium aristulatum</i> var. <i>parishii</i>	0.16	4.94	4.12	0.82	0.08%	0.10	2.88	0.04%	-	-	-
Willow monardella	<i>Monardella viminea</i> (<i>Monardella linoides</i> ssp. <i>viminea</i>)	0.40	11.98	9.99	1.99	0.08%	0.23	6.99	0.05%	0.21	6.32	0.04%
Spreading navarretia	<i>Navarretia fossalis</i>	0.16	4.94	4.12	0.82	0.08%	0.10	2.88	0.04%	-	-	-
Dehesa nolina	<i>Nolina interrata</i>	0.03	1.01	0.84	0.17	0.04%	0.02	0.59	0.03%	0.02	0.53	0.02%
California Orcutt grass	<i>Orcuttia californica</i>	0.23	6.81	5.68	1.13	0.15%	0.13	3.97	0.09%	-	-	-
San Diego mesa mint	<i>Pogogyne abramsii</i>	0.09	2.79	2.33	0.46	0.11%	0.05	1.63	0.06%	-	-	-
Otay Mesa mint	<i>Pogogyne nudiuscula</i>	0.03	0.95	0.79	0.16	0.14%	0.02	0.55	0.08%	-	-	-
Invertebrates												
San Diego fairy shrimp	<i>Branchinecta sandiegonensis</i>	0.21	6.43	5.36	1.07	0.09%	0.12	3.75	0.05%	-	-	-
Riverside fairy shrimp	<i>Streptocephalus woottoni</i>	0.31	9.44	7.87	1.57	0.12%	0.18	5.50	0.07%	-	-	-
Laguna Mountains skipper	<i>Pyrgus ruralis lagunae</i>	<0.01	0.11	0.09	0.02	0.01%	<0.01	0.06	0.01%	<0.01	0.06	0.01%
Hermes copper butterfly	<i>Lycaena hermes</i>	4.91	148.85	124.14	24.71	0.03%	2.89	86.81	0.02%	2.61	78.52	0.02%
Amphibians												
Arroyo toad	<i>Anaxyrus californicus</i> (<i>Bufo microscaphus californicus</i>)	0.32	9.62	8.02	1.6	0.04%	0.19	5.61	0.02%	0.17	5.08	0.02%
California red-legged frog	<i>Rana draytonii</i> (<i>Rana aurora draytonii</i>)	0.71	21.44	17.88	3.56	0.04%	0.42	12.50	0.02%	0.38	11.31	0.02%
Western spadefoot	<i>Spea hammondii</i> or <i>Scaphiopus hammondii</i>	5.90	177.04	147.65	29.39	0.04%	3.44	103.25	0.02%	-	-	-

Common Name	Scientific Name	Permanent Impacts ¹					Temporary Impacts ¹			Wildfire Fuels Management ¹		
		Annual Impacts ^{2,3}	Total O&M and New Construction Impacts through 2050 ^{3,5}	O&M Impacts through 2050	New Construction Impacts through 2050	Percentage of Modeled Habitat Impacted through 2050 ⁶	Annual Impacts ^{2,3}	Impacts through 2050 ^{3,5}	Percentage of Modeled Habitat Impacted through 2050 ⁶	Annual Impacts ⁴	Impacts through 2050 ^{3,5}	Percentage of Modeled Habitat Impacted through 2050 ⁶
Reptiles												
Western pond turtle	<i>Actinemys marmorata</i>	0.65	19.36	16.15	3.21	0.04%	0.38	11.29	0.02%	0.34	10.21	0.02%
Coast horned lizard	<i>Phrynosoma blainvillii</i>	7.10	212.86	177.53	35.33	0.02%	4.14	124.14	0.01%	3.74	112.28	0.01%
Birds												
Tricolored blackbird	<i>Agelaius tricolor</i>	1.17	35.15	29.32	5.83	0.05%	0.68	20.50	0.03%	-	-	-
Burrowing owl	<i>Athene cunicularia (Athene cunicularia ssp. hypugaea)</i>	1.78	53.34	44.49	8.85	0.02%	1.04	31.10	0.01%	0.93	28.13	0.01%
Coastal cactus wren	<i>Campylorhynchus brunneicapillus sandiegensis</i>	2.97	89.13	74.33	14.8	0.07%	1.73	51.98	0.04%	1.57	47.01	0.04%
Western snowy plover (Pacific Coast population distinct population segment)	<i>Charadrius nivosus nivosus (Charadrius alexandrinus nivosus)</i>	0.05	1.46	1.22	0.24	0.09%	0.03	0.85	0.05%	-	-	-
Western yellow-billed cuckoo (western distinct population segment)	<i>Coccyzus americanus</i>	0.26	7.88	6.57	1.31	0.06%	0.15	4.60	0.04%	0.14	4.16	0.03%
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	0.61	18.23	15.2	3.03	0.04%	0.35	10.63	0.02%	0.32	9.61	0.02%
Belding's savannah sparrow	<i>Passerculus sandwichensis beldingi</i>	0.03	0.89	0.74	0.15	0.07%	0.02	0.52	0.04%	-	-	-
Coastal California gnatcatcher	<i>Polioptila californica californica</i>	2.01	60.26	50.26	10	0.06%	1.17	35.14	0.04%	1.06	31.78	0.03%
Light-footed Ridgway's rail (light-footed clapper rail)	<i>Rallus obsoletus levipes (Rallus longirostris levipes)</i>	0.08	2.52	2.1	0.42	0.07%	0.05	1.47	0.04%	-	-	-
California least tern	<i>Sternula antillarum browni (Sterna antillarum browni)</i>	0.02	0.70	0.58	0.12	0.14%	0.01	0.41	0.08%	-	-	-
Least Bell's vireo	<i>Vireo bellii pusillus</i>	0.49	14.71	12.27	2.44	0.04%	0.29	8.58	0.02%	0.26	7.76	0.02%
Mammals												
Stephens' kangaroo rat	<i>Dipodomys stephensi</i>	0.61	18.44	15.38	3.06	0.04%	0.36	10.76	0.02%	0.32	9.73	0.02%
Peninsular Bighorn Sheep ⁷	<i>Ovis canadensis nelsoni</i>	0.25	7.55	6.30	1.25	<0.01%	0.15	4.40	<0.01%	-	-	-
Pacific pocket mouse	<i>Perognathus longimembris pacificus</i>	0.05	1.50	1.25	0.25	0.06%	0.03	0.87	0.03%	-	-	-

¹ Note that anticipated impacts to Modeled Habitat have been calculated to provide an approximation of the potential impacts on Modeled Habitat for each Covered Species. Actual impacts on Covered Species habitat would be assessed, avoided, and minimized through the existing Pre-activity Survey Report [PSR] process.

² The sum of anticipated and potential unanticipated (15% of Anticipated Average) impacts in Appendix A (Covered Species Analysis), Attachments B and C.

³ Numbers rounded after summation.

⁴ Based on SDG&E's 2019 Pilot Study (see Section 4.4), SDG&E assumed that up to 100 acres per year will undergo Wildfire Fuels Management through 2050, and that a 7% net percent reduction of native canopy cover will be consistent, on average, over the remaining permit term; resulting in 7 acres of habitat impacts per year. The percentage of the undeveloped portion of PIZ that consisted of potentially suitable habitat for applicable Covered Species was quantified, and this percentage was multiplied by Wildfire Fuels Management annual impact estimate of 7 acres per year, to estimate the impacts on Modeled Habitat on an annual basis. Species with no impacts within the table will not be impacted by Wildfire Fuels Management because Wildfire Fuels Management would not have direct habitat impacts on peninsular bighorn sheep, vernal pool, marsh, or beach species. Wildfire Fuels Management would also not be conducted within Pacific pocket mouse habitat.

⁵ To be conservative, annual average multiplied by 30 years.

⁶ Total O&M and New Construction impacts divided by all modeled Habitat within the Plan Area.

⁷ Impacts for peninsular bighorn sheep are based on essential habitat as described in Appendix C (Peninsular Bighorn Sheep Evaluation).

**Table 4.5 Anticipated Permanent Habitat Impacts
Associated with Operation & Maintenance and New Construction (acres)**

Habitat Type	Total Impacts 1996–2018	Average Annual Impacts 1996–2018	Anticipated Permanent Impacts through 20500 Years ¹	Unanticipated Impacts from Future Covered Activities (15% of Anticipated Average)	Total O&M and New Construction Permanent Impacts through 2050 ^{2, 3}	O&M Permanent Impacts through 2050	New Construction Permanent Impacts through 2050
Riparian and Wetlands	5.18	0.23	6.75	1.01	7.77	6.48	1.29
Disturbed Wetlands	0.36	0.02	0.47	0.07	0.54	0.45	0.09
Marsh	0.39	0.02	0.51	0.08	0.59	0.49	0.1
Meadow/Seep	0.43	0.02	0.56	0.08	0.65	0.54	0.11
Non-Vegetated Flood Channel	0.01	<0.01	0.01	<0.01	0.01	0.01	<0.01
Open Water	0.02	<0.01	0.02	<0.01	0.03	0.03	<0.01
Riparian Forest/Woodland	1.36	0.06	1.78	0.27	2.04	1.7	0.34
Riparian Scrub	2.18	0.09	2.85	0.43	3.27	2.73	0.54
Vernal Pools	0.43	0.02	0.55	0.08	0.64	0.53	0.11
Uplands	260.28	11.32	339.49	50.92	390.41	325.61	64.8
Chaparral	53.70	2.33	70.05	10.51	80.55	67.18	13.37
Coastal Scrub	72.11	3.14	94.05	14.11	108.16	90.21	17.95
Desert Scrub	6.02	0.26	7.85	1.18	9.03	7.53	1.5
Forest/Woodland	5.51	0.24	7.19	1.08	8.27	6.9	1.37
Grasslands	121.15	5.27	158.03	23.70	181.73	151.56	30.17
Great Basin Scrub	1.78	0.08	2.32	0.35	2.67	2.23	0.44
Grand Total⁴	265.45	11.54	346.24	51.94	398.18	332.09	66.09

¹ Annual average multiplied by 30.

² Sum of anticipated and potential unanticipated impacts.

³ The 5 acres of anticipated impacts to the agricultural and/or disturbed land cover types associated with the expansion of the Moreno Compressor Station are not included; SDG&E does not mitigate for either of these land cover types.

⁴ Values may not total due to rounding after summation.

Using the above methodology, SDG&E also estimated that annual temporary impacts will be approximately 6.73 acres per year, for a total of 202 acres of temporary impacts through 2050. As with overall impacts, this initial estimate was increased by 15% to accommodate reasonable unanticipated impacts (Table 4.6). Based on the foregoing calculation, SDG&E estimated that approximately 232 acres of temporary impacts may occur to vegetation from HCP Amendment implementation through 2050 (Table 4.6). Although this methodology resulted in higher estimated temporary impacts as compared to historical averages, to be conservative, SDG&E's request for incidental take for temporary impacts will be reduced to 210 acres, which is in line with historical averages (i.e., approximately 7 acres/year x 30 years).¹⁰

**Table 4.6 Anticipated Temporary Habitat Impacts
Associated with Operation & Maintenance and New Construction (acres)**

Habitat Type	Total Temporary Impacts 1996–2018	Average Annual Temporary Impacts 1996–2018	Anticipated Temporary Impacts through 2050 ¹	Unanticipated Impacts from Future Covered Activities (15% of Anticipated Average)	Total Temporary Impacts through 2050 ²
Riparian and Wetlands	4.08	0.18	5.33	0.80	6.13
Disturbed Wetlands	0.33	0.01	0.42	0.06	0.49
Marsh	0.35	0.02	0.46	0.07	0.53
Meadow/Seep	0.43	0.02	0.56	0.08	0.64
Non-Vegetated Flood Channel	0.01	<0.01	0.01	<0.01	0.01
Open Water	0.02	<0.01	0.02	<0.01	0.03
Riparian Forest/Woodland	1.08	0.05	1.41	0.21	1.63
Riparian Scrub	1.86	0.08	2.43	0.36	2.80
Vernal Pools	<0.01	<0.01	0.01	<0.01	0.01
Uplands	150.79	6.56	196.68	29.50	226.18
Chaparral	22.03	0.96	28.73	4.31	33.04
Coastal Scrub	37.77	1.64	49.26	7.39	56.65
Desert Scrub	2.30	0.10	3.01	0.45	3.46
Forest/Woodland	4.52	0.20	5.89	0.88	6.78
Grasslands	82.64	3.59	107.79	16.17	123.96
Great Basin Scrub	1.53	0.07	2.00	0.30	2.30
Grand Total⁴	154.87	6.73	202.01	30.30	232.31³

¹ Annual average multiplied by 30.

² Sum of anticipated and potential unanticipated impacts.

³ As noted above, SDG&E's request for incidental take for temporary impacts will be reduced to 210 acres, which is a more conservative approach that is in line with historical averages (i.e., approximately 7 acres/year x 30 years).

⁴ Values may not total due to rounding after summation.

¹⁰ Acreage was rounded to the nearest whole acre for ease of implementation. A 210-acre limit is also within 4% of historical averages without assuming a 15% contingency.

Vegetation categories have been grouped to provide a general habitat-based impact summary. Appendix F provides a crosswalk showing the detailed habitat types that have historically been impacted relative to the grouping in Tables 4.5 and 4.6. To introduce anticipated impacts at the landscape level, Tables 4.5 and 4.6 provide an overview of historical impacts and projected impacts by broad habitat categories. This historical data was used in conjunction with species habitat modeling data on Covered Species habitat distributions to estimate potential species-specific impacts (see Table 4.4 and Attachment B, C, and D of Appendix A).

4.2.3.1 Critical Habitat

Covered Activities may affect proposed and designated critical habitat that has been identified for 16 of the Covered Species (Appendix A, Attachment A and Appendix C). Appendix C provides a table summarizing impacts to designated Critical Habitat for peninsular bighorn sheep.

4.2.4 Duration and Intensity of Impacts

The duration and intensity of impacts to Covered Species will vary depending on the location and type of Covered Activity being conducted. Some Covered Activities will result in occasional indirect impacts to individuals while others may result in greater impacts such as the killing of individuals or permanent habitat loss in the Plan Area. While direct harm to Covered Species is rare, it, along with Covered Activities that modify habitat, may be expected to occur throughout the year and may occur within any or all of the Plan Area. However, with implementation of Species-Specific Protocols in Section 5.1, no direct harm to breeding birds is expected, including CDFW Fully Protected species.

For example, Covered Activities such as the installation, use, maintenance, or repair of Facilities may cause temporary harassment of individuals, while grading and clearing of electric substation pads, gas Facilities, or access roads may result in permanent disturbance. Most Covered Activities will allow a majority of Covered Species to re-occupy habitat after the completion of installation, maintenance, and repair of a Facility and during its use (e.g., transmission line).

4.3 Impacts Associated with Habitat Management

Habitat management will include a range of Covered Activities, such as fencing, signage, litter removal, restoration, enhancement, species salvage/translocation, and weed removal for the betterment of Covered Species and their habitat. However, habitat management may result in some impacts to Covered Species and their habitat. The magnitude of these potential impacts would depend on the size and type of activity, proximity to individuals or a population, life stage of the species, and duration of the impacts on habitat characteristics. Management plans would maximize beneficial impacts and minimize adverse impacts through the incorporation of avoidance and minimization measures for Covered Species and their habitat.

4.4 Wildfire Fuels Management Program Impact Assessment Methodology

The wildfire fuels management program impact analysis herein is based primarily on SDG&E's Wildfire Fuels Management Program, which was launched as a pilot program in 2019 and was described in *SDG&E Wildfire Fuels Management Program 2019 Annual Report for BLM, USFS, and Private Lands* (SDG&E 2020a). Information from the 2019 Annual Report was used in conjunction with species habitat modeling data on Covered Species habitat distributions to further estimate potential species-specific impacts. The framework for the methodology is based on that described in Section 4.1.

Based on information in the 2019 Annual Report, the following section estimates total habitat impacts from the HCP Amendment implementation through 2050. It also describes methodologies for estimating Covered Species that may be impacted by Wildfire Fuels Management from HCP Amendment implementation through 2050 based on the pilot and species habitat modeling data.

4.4.1 Projected Habitat Impacts

SDG&E successfully implemented Wildfire Fuels Management in 2019 and anticipates continuing to reduce wildfire fuels along infrastructure during the remaining permit term. The Program aimed to reduce fire fuel load around distribution and transmission lines within the SDG&E service area. Reducing fire fuel load was anticipated to reduce the risk of point source wildfire ignitions in high fire risk areas along SDG&E's ROW caused by infrastructure, O&M, or environmental hazards. Additionally, reducing fuel load may protect SDG&E infrastructure by reducing the intensity of wildfires that enter from outside the ROW.

Based on 2019 information, on average, for every 100 acres treated, 9 acres of native vegetation cover was removed, and 2 acres of nonnative vegetation cover was removed. All Wildfire Fuels Management in 2019 occurred in eastern San Diego County. Treatment Areas in 2019 targeted upland habitat and primarily occurred within chaparral and forest/woodland habitat types within or adjacent to an easement for SDG&E Facilities (specifically, transmission and distribution electric infrastructure).

As noted in Section 2.2.5.4, Wildfire Fuels Management focuses on removing nonnative species, which benefits the overall ecological value of the surrounding vegetation communities, as well as dead/down woody vegetation that provides fuel for wildfire. In addition, Wildfire Fuels Management may involve the thinning¹¹ of select native vegetation in Treatment Areas with a focus on preserving habitat value and native species diversity. Treatment Areas where native, mostly mature dominant species were thinned will be maintained in an early successional state of the vegetation community.

To maintain this state, Treatment Areas will need ongoing vegetation management. Annual maintenance of Treatment Areas solely consists of weed control Covered

¹¹ Thinning involves the selective removal of parts of native vegetation to increase space between plants and make room for future growth.

Activities to remove fine fuels similar to practices conducted for habitat restoration Covered Activities. Thinning of native shrub species, after the initial treatment, is anticipated to occur on a 3- to 5-year basis depending on growth rates. During these treatments, native vegetation will not be completely removed in Treatment Areas, but thinning will reduce total cover of individual native shrubs. This reduction in cover by individual native plants (hereinafter referred to as canopy cover) is anticipated to remain relatively constant so long as continuing treatments occur in the Treatment Area. If treatments cease, it is anticipated that native shrub species would regrow, and the percentage canopy cover would increase towards a native climax state.

To estimate future habitat impacts associated with Wildfire Fuels Management, SDG&E focused on the reduction in canopy cover (i.e., the decrease in native shrub cover post-treatment as compared to pre-treatment) that could be expected from continued treatment in future Treatment Areas. It then applied that anticipated reduction in cover to the estimated annual acres that will undergo Wildfire Fuels Management through 2050.

Specifically, SDG&E relied on the average percent difference between pre-thinning and post-thinning cover values of native and nonnative vegetation as reported in the 2019 Annual Report. As noted above, on average, for every 100 acres treated, 9 acres of native vegetation cover was removed and 2 acres of nonnative vegetation cover was removed. Because removal of nonnative vegetation benefits Covered Species and their habitat and promotes the establishment of native vegetation, the average acreage of nonnative vegetation cover loss was subtracted from the acreage of native vegetation cover loss, yielding a net vegetation cover loss of 7 acres per 100 acres treated. SDG&E assumed that this 7-acre net reduction of native canopy cover for every 100 acres treated will be consistent, on average, over the remaining permit term.

Based on the total acres treated during the 2019 Annual Report and planned impact acreage for future years, it is assumed that up to 100 acres per year will undergo Wildfire Fuels Management through 2050. Applying the above methodology for estimating impacts related to reduction in canopy cover, the acreage of estimated impacts for the remaining permit term is as follows:

1. Average Annual Wildfire Fuels Management Impacts:

For every 100 acres of Wildfire Fuels Management, 7 acres of habitat impacts per year (see Section 4.4.1).

2. Total Wildfire Fuels Management Impact over Remaining 30 Year Permit Term:

7 acres of habitat impacts per year x 30 years = 210 acres

The majority of the 210 acres of impacts are expected to occur within upland habitats (primarily chaparral). Some minor impacts may occur within riparian or wetland habitat, such as riparian forests or scrub, in situations where vegetation is causing a high ignition risk. Treatment Areas will be selected in future years by evaluating the areas of greatest risk for ignition within and adjacent to Facilities. An anticipated acreage by habitat communities cannot be accurately predicted as the location selected is

dependent on many factors, including existing site conditions that can change from year to year. Impacts will be monitored and tracked as described in section 5.5.1.2 Wildfire Fuels Management.

4.4.2 Estimating Impacts to Covered Species

To calculate species-specific habitat impacts resulting from Covered Activities, the same conceptual process used for O&M and New Construction was applied to Wildfire Fuels Management (Section 4.1.3). The methodology described herein was applied to those Covered Species that have some potential to be impacted by Wildfire Fuels Management. Wildfire Fuels Management would not have direct habitat impacts on vernal pool species, marsh species, desert species, or species inhabiting beach habitat. Accordingly, the methodology was not applied to these species.

Applicable Covered Species included upland and riparian scrub/forest species. For these Covered Species, the impact analysis followed a multi-step approach to estimate future impacts. The analysis first used the estimate of total Modeled Habitat for applicable Covered Species in the Plan Area as described in Section 4.1.3.1 and Modeled Habitat was overlaid on the PIZ to estimate where impacts were reasonably likely to occur (Section 4.1.3.2).

The percentage of the undeveloped portion of PIZ that consisted of potentially suitable habitat for each Covered Species was quantified (Section 4.1.3.2), and this percentage was multiplied by the Wildfire Fuels Management annual impact estimate of 7 acres per year (Section 4.4.1), to generate species-specific habitat impacts. The following is an example of this calculation, using the coastal California gnatcatcher:

Example Calculation of Species-Specific Habitat Impacts:

1. Average Annual Wildfire Fuels Management Impacts:

For every 100 acres of Wildfire Fuels Management, 7 acres of habitat impacts per year (see Section 4.4.1)

2. Coastal California Gnatcatcher Modeled Habitat within PIZ:

7,365 acres

3. Percentage of Undeveloped Portion of PIZ Supporting Modeled Habitat: !!

$$\frac{7,365 \text{ acres (Modeled Habitat within the PIZ)}}{48,665 \text{ acres (Undeveloped Portion of the PIZ)}} = 15.70\%$$

4. Average Annual Wildfire Fuels Management Impacts to Coastal California Gnatcatcher Habitat:

7 acres (Average Annual Impacts) x 15.70% (% of undeveloped portion of PIZ Supporting Modeled habitat) = 1.1 acres/year

The Covered Species Analysis (Appendix A) provides estimated habitat acreage impacts to Covered Species that may be directly impacted by Wildfire Fuels Management. The effect of future impacts through 2050 to the Covered Species is detailed in Appendix A relative to applicable measures/protocols to avoid, minimize, or mitigate impacts to the Covered Species.

4.4.3 Impacts to/Take of Covered Species

4.4.3.1 Animals

Habitat impacts and take of Covered Species of animals inhabiting habitat undergoing Wildfire Fuels Management may occur as a result of these Covered Activities. Terrestrial species could be impacted due to loss of habitat for nesting and foraging, from collision with vehicles or if they are crushed as a result of construction. In addition, personnel enter Treatment Areas on foot and utilize chain saws, weed whackers, and hand tools to thin vegetation. Indirect impacts will likely occur as an unavoidable and unintentional consequence of conducting Wildfire Fuels Management, including the operation of machinery (e.g., chipper) and equipment, and their associated noise. Indirect impacts may occur in the form of elevated noise and increased human activity. Displacement may occur when habitat for individuals is modified and/or they move away from impacts and are subsequently forced to compete with resident animals for food and living space, thus impacting breeding behavior and movement patterns. SDG&E will implement the Operational Protocols and Species-Specific Protocols in Section 5.1 to avoid or minimize impacts to covered animal species.

The loss of canopy cover may prove beneficial for some Covered Species (e.g., coast horned lizard), but may negatively impact habitat for other Covered Species. Modification of habitat may reduce biological resources for Covered Species and thereby affect an individual's ability to survive. The thinning of native habitat and associated disturbance to the habitat may also introduce nonnative weeds to areas that are currently not disturbed. By removing and/or thinning nonnative vegetation, removing dead and down woody vegetation, and focusing on nonnative fire-promoting species, wildfire occurrences within backcountry portions of the Plan Area may lessen in severity, thereby allowing established areas of native habitat to remain intact and provide breeding and foraging opportunities to Covered Species. In addition, the removal of nonnative vegetation may aid in the reestablishment of native vegetation by reducing competition among plants and therefore improving the quality of existing native habitat and resources essential for Covered Species survival. Implementation of the mitigation measures in Section 5.1 will avoid or reduce these impacts to the maximum extent possible. Unavoidable habitat impacts will be mitigated, as described in Section 5.5.

Table 4.4 provides estimated Wildfire Fuels Management impact acreages to Covered Species Modeled Habitat in the Plan Area based on the methodology described in Section 4.4.2. See Sections 3 through 6 of the Covered Species Analysis (Appendix A) for additional detail on impacts to Covered Species of wildlife.

4.4.3.2 Plants

Direct impacts to individual plants (including mature individuals, bulbs, and viable seeds) may occur from trampling by field crews associated with vegetation trimming required during implementation of Wildfire Fuels Management. Direct take of Covered Species will likely be rare because personnel can avoid mature individuals, and seed banks are not expected to be impacted by foot traffic within Wildfire Fuels Management areas.

Although Wildfire Fuels Management may result in negative impacts as described above, it should be noted that, in some cases, indirect impacts could result in benefits to certain Covered Species of plants. By removing and/or thinning nonnative vegetation, removing dead and down woody vegetation, and focusing on nonnative fire-promoting species, wildfire occurrences within backcountry portions of the Plan Area may lessen in severity, thereby allowing established areas of native habitat supporting native plant species to remain intact. In addition, the removal of nonnative vegetation may aid in the reestablishment of native plant species by reducing competition among plants for surrounding resources.

Table 4.4 provides estimated Wildfire Fuels Management impact acreages to Covered Species Modeled Habitat in the Plan Area based on the methodology described in Section 4.4.2. See Section 2 of the Covered Species Analysis (Appendix A) for additional detail on impacts to Covered Species of plants. SDG&E will implement the Operational Protocols and Species-Specific Protocols in Section 5.1 to avoid or minimize impacts to plant Covered Species.

4.4.3.3 Critical Habitat

Wildfire Fuels Management may affect proposed and designated critical habitat that has been identified for 16 of the Covered Species (Appendix A, Attachment A and Appendix C). Appendix C provides a table summarizing impacts to designated Critical Habitat for peninsular bighorn sheep.

4.4.4 Duration and Intensity of Impacts

Wildfire Fuels Management is of short duration and low impact/intensity. Little to no ground disturbance occurs while thinning vegetation. These activities may occur throughout the year and work during the avian nesting season may have an increased effect during this time; however, with implementation of Species-Specific Protocols in Section 5.1, no direct harm to breeding birds is expected. The loss of canopy cover would result in a long-term effect to Covered Species habitat as it may be beneficial for some Covered Species, but may negatively impact habitat for other Covered Species. Overall, the long-term impacts are expected to be a net benefit due to the reduction in nonnative weeds and fire risk.

5 Protocols and Mitigation

5.1 Operational Protocols and Species-Specific Protocols

Operational Protocols represent an environmentally sensitive approach to traditional utility construction, maintenance, and repair. Covered Activities recognizing that slight adjustments in construction techniques can yield major benefits for the environment. The appropriate Operational Protocols for each individual project shall be determined and documented by the Biologist. The following Operational Protocols shall be adhered to by SDG&E. Species-Specific Protocols shall supersede general Operational Protocols where applicable. SDG&E and USFWS recognize that methods for reducing and minimizing impacts may change over time, and these measures were developed with the best available information. Where new or improved measures provide more efficient or effective conservation, changes to Operational Protocols may be mutually agreed to by SDG&E and USFWS via a Minor Amendment.

5.1.1 General Behavior for All Field Personnel

1. When environmentally sensitive areas/limits have been established, employees and contract workers shall strictly limit their activities, vehicles, equipment, and construction materials to avoid impacts beyond the delineated limits.
2. Vehicles must be kept on access roads. A 15 miles-per-hour speed limit shall be observed on dirt access roads to allow species to disperse. Vehicles must be turned around in established or designated areas only.
3. No wildlife, including rattlesnakes, may be harmed, except to protect life and limb.
4. Firearms shall be prohibited on the ROW except for firearms used by security personnel.
5. Feeding of wildlife is not allowed.
6. SDG&E personnel are not allowed to bring pets on the ROW in order to minimize harassment or killing of wildlife and to prevent the introduction of destructive domestic animal diseases to native wildlife populations.
7. Parking or driving underneath oak trees is not allowed in order to protect root structures except in established traffic areas.
8. Plant or wildlife species may not be collected for pets or any other reason.

9. Littering is not allowed. SDG&E personnel shall not deposit or leave any food or waste on the ROW or adjacent property.
10. Wildfires shall be prevented or minimized by exercising care when driving and by not parking vehicles where catalytic converters can ignite dry vegetation. SDG&E vehicles shall carry all required fire tools such as water backpack pumps, shovels, and/or fire extinguishers while operating in the field in accordance with SDG&E's Wildland Fire Prevention Plan (SDG&E 2020b). Shields, protective mats, or other fire prevention methods shall be used during grinding and welding to prevent or minimize the potential for fire. Smoking may only occur in designated smoking areas or in a 10-foot clearing void of all grass or other vegetation as in accordance with SDG&E's Wildland Fire Prevention Plan (SDG&E 2020b) or as discussed in the most current internal fire prevention standard and practices.
11. Field crews shall refer environmental issues, including wildlife relocation, dead or sick wildlife, hazardous waste, the presence of highly invasive nonnative species that are not known to be established in California, especially perennial species rated as high or moderate threat by Cal-IPC, or questions about avoiding environmental impacts, to the Biologist. Biologists or experts in wildlife handling may need to be brought in by the Biologist for assistance with wildlife relocations.

5.1.2 Training

12. All SDG&E personnel and contractors working within the project area shall participate in SDG&E's employee training program, which includes annual training, project-specific training, and as-needed training. The scope of each type of training is included Section 6.3.1.
13. Designated SDG&E staff shall conduct selected reviews of SDG&E operations. Any proposed modifications to Operational Protocols, procedures, or conditions shall be in coordination with USFWS as prescribed in Section 6.5.

5.1.3 Pre-activity Surveys

14. The Biologist shall conduct Pre-activity Surveys for all Covered Activities as outlined in Section 6.3.2 occurring within or adjacent to habitat with potential to support Covered Species. The Biologist shall complete a PSR to document the environmental review of the potential impacts to Covered Species as a result of implementing a Covered Activity.
15. To ensure that habitats are not inadvertently impacted, the Biologist shall determine the extent of habitat and flag boundaries of habitats that must be avoided. When necessary, the Biologist should also demarcate appropriate equipment laydown areas; vehicle turnaround areas; and

pads for placement of large construction equipment such as cranes, bucket trucks, augers, etc. When appropriate, the Biologist shall make office and/or field presentations to field staff to review and become familiar with natural resources to be protected on a project-specific basis.

5.1.4 Maintenance, Repair, and Construction of Facilities

16. Maintenance, repair, and construction of Facilities shall be designed and implemented to minimize new disturbance, erosion on manufactured and other slopes, and offsite degradation from accelerated sedimentation, and to reduce maintenance and repair costs.
17. Routine maintenance of all Facilities includes visual inspections on a regular basis, conducted from vehicles driven on the access roads where possible. If it is necessary to inspect areas that cannot be seen from the roads, the inspection shall be done on foot, or from the air.
18. When the view of a gas transmission line marker becomes obscured by vegetation on a regular basis requiring repeated habitat removal, consideration shall be given to the replacement of markers with taller versions.
19. Erosion shall be minimized on access roads and other locations primarily with water bars. The water bars are mounds of soil shaped to direct flow and prevent erosion.
20. Hydrologic impacts shall be minimized through the use of state-of-the-art technical design and construction techniques to minimize ponding; eliminate flood hazards; and avoid erosion and siltation into any creeks, streams, rivers, or bodies of water by use of best management practices.
21. When siting new Facilities, every effort shall be made to cross the wetland habitat perpendicular to the watercourse, spanning the watercourse to minimize the amount of disturbance to riparian areas (see Figure 4).
22. Gas and other Facilities cross streambeds and require maintenance and repair. During such times, water may be temporarily diverted as long as sensitive fish are not stranded and, after disturbance, natural drainage patterns are restored to minimize the impact of the disturbance and help to reestablish or enhance the habitat. Erosion control during construction in the form of intermittent check dams and culverts should also be considered to prevent alteration to natural drainage patterns and prevent siltation.
23. Impacts to wetlands shall be minimized by avoiding pushing soil or brush into washes or ravines.

24. During work on Facilities, all trucks, tools, and equipment should be kept on existing access roads or cleared areas, to the extent possible.
25. The Biologist must approve of activity prior to working in sensitive areas where disturbance to habitat may be unavoidable.
26. Insulator washing is allowed from access roads if other applicable protocols are followed.
27. Brush clearing around Facilities for non-emergency fire protection shall not be conducted from March through August without prior approval by the Biologist. The Biologist shall make sure that the habitat contains no active nests, burrows, or dens prior to clearing.
28. Wire stringing is allowed year-round in sensitive habitat if conductor is not allowed to drag on the ground or in brush, and vehicles remain on access roads. Pre-activity Surveys shall be conducted in accordance with the HCP Amendment and shall determine if nesting will be potentially impacted from all Covered Activities including stringing. Recommendations shall be made to avoid impacts to nesting birds.
29. Maintenance of cut and fill slopes shall consist primarily of erosion repair. In situations where revegetation would improve the success of erosion control, planting or seeding with native hydroseed mix may be done on slopes.
30. Spoils created during maintenance operations shall be disposed of only on previously disturbed areas designated by the Biologist or used immediately to fill eroded areas. Cleared vegetation shall be hauled off the ROW to a permitted disposal location.
31. Environmentally sensitive tree trimming locations shall be identified in the tree trim computer database system utilized by tree trim contractors. (This database also tracks the date of each tree trim, type of tree, where threatening dogs reside, etc.) The Biologist shall be contacted to perform a Pre-activity Survey when trimming is planned in environmentally sensitive areas from March through August. Whenever possible, trees in environmentally sensitive areas (determined by USFWS and SDG&E) shall be scheduled for trimming in the non-sensitive times. If additional environmentally sensitive tree trimming locations are identified, USFWS shall coordinate with SDG&E on the potential inclusion into the database.
32. If any previously unidentified dens, burrows, or plants are located on any project site after the Pre-activity Survey, the Biologist shall be contacted. The Biologist shall determine how to best avoid or minimize impacting the resource by considering such methods as project or work plan

redevelopment, equipment placement or construction method modification, seasonal/time of day limitations, etc.

33. The Biologist shall conduct biological monitoring as recommended in the PSR. At completion of work, the Biologist shall check to verify compliance, including observing that flagged areas have been avoided and that reclamation, including site stabilization and/or erosion control, has been properly implemented. Also, at completion of work, the Biologist is responsible for removing all habitat flagging from the construction site.
34. The Biologist shall conduct checks on mowing procedures, to ensure that mowing is limited to a 12-foot-wide area on straight portions of the road (slightly wider on radius turns), and that the mowing height is no less than 4 inches.
35. Supplies or equipment where wildlife could hide (e.g., pipes, culverts, pole holes) shall be inspected prior to moving or working on them to reduce the potential for injury to wildlife. Supplies or equipment that cannot be inspected or from which animals could not be removed shall be capped or otherwise covered at the end of each workday. Old piping or other supplies that have been left open shall not be capped until inspected and any species found within allowed to escape. Ramping shall be provided in open trenches when necessary. If an animal is found entrapped in supplies or equipment, such as a pipe section, the supplies or equipment shall be avoided and the animal(s) left to leave on its own accord, except as otherwise authorized by USFWS.
36. All steep-walled trenches or excavations used during construction shall be inspected twice daily (early morning and evening) to protect against wildlife entrapment. If wildlife are located in the trench or excavation, the Biologist shall be called immediately to remove them if they cannot escape unimpeded.
37. Large amounts of fugitive dust could interfere with photosynthesis. Fugitive dust created during clearing, grading, earth-moving, excavation, or other construction shall be controlled by regular watering. At all times, fugitive dust emissions shall be controlled by limiting vehicle speed to 15 miles per hour.
38. Pest control Covered Activities as described in Section 2.2.3.4 shall conform to existing laws and in accordance with underlying property owner restrictions. In areas adjacent to Preserves and/or known locations of Covered Species, SDG&E shall employ limited use of pest control management and avoid effects to non-targeted species to the extent practical.

5.1.5 Maintenance of Access Roads

39. In each case of repair of erosion by grading, addition of fill, and compacting, the total area of disturbance shall be minimized by careful access and use of appropriately sized equipment. Repairs shall be done after Pre-activity Surveys conducted by the Biologist and in accordance with the recommendations regarding biological monitoring and relevant protocols. Consideration should be given to source of erosion problem, when source is within control of SDG&E.
40. Vegetation control through grading should be used only where the vegetation obscures the inspection of Facilities, access may be entirely lost, or the threat of Facility failure or fire hazard exists. The graded access road area should not exceed 12 feet wide on straight portions (radius turns may be slightly wider). New access roads shall be designed to current width standards, as appropriate.
41. Mowing habitat can be an effective method for protecting the vegetative understory while at the same time creating access to a work area. Mowing should be used when permanent access is not required since, with time, total revegetation is expected. If mowing is in response to a permanent access need, but the alternative of grading is undesirable because of downstream siltation potential, it should be recognized that periodic mowing shall be necessary to maintain permanent access.
42. Maintenance work on access roads should not expand the existing roadbed.
43. Material for filling in road ruts should never be obtained from the sides of the road that contain habitat without approval from the Biologist.

5.1.6 Construction of New Access Roads

44. SDG&E access roads shall be designed and constructed according to the Standards Regarding SDG&E Transmission Corridors (SDG&E 2020c) or as discussed in the most current guidance.
45. Access roads shall be made available to managers of the regional preserve system subject to coordination with SDG&E.
46. New access roads shall be designed to be placed in previously disturbed areas and areas that require the least amount of grading in sensitive areas during construction whenever possible. Preference shall be given to the use of stub roads rather than linking Facilities tangentially.
47. SDG&E shall consider providing access control on access roads leading into the regional preserve system where such control provides benefit to sensitive resources.

48. Every effort shall be made to avoid constructing new roads during the nesting season. If construction of new roads is necessary during the nesting season, the presence or absence of nesting species shall be determined by a Biologist and appropriate avoidance and minimization recommendations followed.

5.1.7 Construction and Maintenance of Access Roads through Streambeds

49. Construction of new access roads through streambeds requires a Streambed Alteration Agreement from CDFW and/or consultation with the U.S. Army Corps of Engineers. Construction in marsh areas, soft sand, or open water in most cases shall be accomplished through the use of helicopters for the delivery of materials, poles, personnel, and platforms. Roads should be avoided to the extent feasible.
50. Maintenance or construction vehicle access through shallow creeks or streams is allowed. However, no filling for access purposes in waterways is allowed without the installation of appropriately sized culverts. The use of geotextile matting should be considered when it would protect wetland species.
51. Staging/storage areas for equipment and materials shall be located outside of riparian areas.

5.1.8 Survey Work

52. Brush clearing for footpaths or line-of-sight cutting is not allowed from March through August in sensitive habitat without prior approval from the Biologist, who shall ensure that activity does not adversely affect a Covered Species.
53. SDG&E survey personnel must keep vehicles on existing access roads. No clearing of brush for panel point placement is allowed from March through August without prior approval from the Biologist.
54. Hiking off roads or paths for survey data collection is allowed year-round so long as other protocols are met.

5.1.9 Emergency Repairs

55. Emergency repair of Facilities is required in situations that potentially or immediately threaten the integrity of the SDG&E system, such as pipe leaks, or downed lines, slumps, slides, major subsidence, etc. Repairs conducted in response to an emergency situation would follow the Operational Protocols contained herein to fullest extent possible.

56. Once the emergency has stabilized, any unavoidable environmental damage shall be reported to the Biologist by the foreman. The Biologist shall develop a mitigation plan and ensure its implementation is consistent with the HCP Amendment.

5.1.10 Activities of Underlying Fee Owners

57. Most SDG&E Facilities are owned, operated, and maintained on public and private land through easements where access is granted through ROW; SDG&E does own land in fee for various Facilities. The actions of underlying fee owners cannot be controlled by SDG&E and are not covered by the HCP Amendment.
58. When sensitive habitat exists on either side of a ROW, SDG&E shall not oppose underlying fee owners dedicating said property to conservation purposes. Underlying fee owners are expected to comply with applicable federal, state, and local regulations.

5.1.11 Vernal Pool and Road-Rut Protocols¹²

Term	Definition
Vernal Pool	Seasonal, depression-type wetlands that result from a unique set of physical parameters and support a specific biological assemblage of plant and animal species. Functional vernal pool ecosystems form under specific physical conditions when small, shallow depressions collect precipitation to create a seasonally perched water table.
Vernal Pool Complex	A collection of vernal pools that occur in proximity, on the same soil series, and are typically biogeographically and hydrologically connected.
Vernal Pool Watershed	A topographically defined catchment area from which surface water flows to a vernal pool.
Road Rut	Man-made road ruts and other seasonal depressions that are not vernal pools may contain wildlife associated with vernal pools, such as fairy shrimp, but will not contain vernal pool plant indicator species.

5.1.11.1 Vernal Pools (naturally occurring, non-man-made)

59. Impacts to vernal pools and/or their watersheds (vernal pool habitat) shall be avoided through project design considerations, to the maximum extent practicable. Vehicular traffic through dry vernal pools shall not be considered an impact that requires mitigation.
60. If impacts to vernal pool habitat cannot be avoided, a survey shall be conducted by a Biologist using established survey protocols for vernal pool Covered Species. If project timing does not allow for surveys,

¹² The Vernal Pool Protocols detailed herein were adapted from and supersede the Vernal Pool Clarification dated July 26, 2004.

SDG&E shall confer with USFWS to determine if any vernal pool Covered Species should be assumed present.

61. If surveys determine a vernal pool is occupied (or is assumed occupied), permanent impacts that cannot be avoided shall be mitigated per the occupied vernal pool mitigation ratios in Table 5.5., or through other alternatives outlined in Section 5.5, as agreed to by USFWS. This mitigation would need to be approved prior to Covered Activities occurring within the vernal pool, complex, or watershed.
62. If surveys determine vernal pools are not occupied, permanent impacts that cannot be avoided shall be mitigated per the unoccupied vernal pool mitigation ratios in Table 5.5., or through other alternatives outlined in Section 5.5, as agreed to by USFWS. This mitigation would need to be approved prior to Covered Activities occurring within the vernal pool, complex, or watershed.
63. Prior to permanent and temporary impacts, SDG&E shall confer with USFWS on whether soil (inoculum) and/or vernal pool plant seed shall be salvaged from the impacted vernal pools. Seed from vernal pool indicator plants shall be collected from the pools that will be impacted when the plants have dried and before the seed disperses. Seed collection may not be possible when precluded by weather or physical constraints, such as the Covered Activity occurring at a time of year when no seed is present. However, it is assumed that salvaged soil would contain a seed bank for these species, and they would be allowed to recover once the soil was reinstalled.

Inoculum shall be collected only from vernal pools that are free of versatile fairy shrimp (*Branchinecta lindahli*), and when it is dry to avoid damaging or destroying fairy shrimp cysts. Hand tools (i.e., shovels and trowels) shall be used to remove the first 2 inches of soil from the pools. Whenever possible, the trowel shall be used to pry up intact chunks of soil, rather than loosening the soil by raking and shoveling, which can damage the cysts. The soil from each pool shall be stored individually in labeled boxes that are adequately ventilated and kept out of direct sunlight in order to prevent the occurrence of fungus or excessive heating of the soil and stored offsite at an appropriate facility for vernal pool inoculum. Inoculum from different source pools shall not be mixed for seeding any restored pools, unless otherwise approved by USFWS.

64. For all construction occurring adjacent to vernal pools, SDG&E shall work with a Biologist having local experience with vernal pool resources, to conduct Covered Activities in a manner that avoids potential impacts to vernal pools. The Biologist shall oversee and monitor, as needed, Covered Activities occurring adjacent to vernal pools. The biological monitor shall hold a preconstruction meeting to brief the crew on the

location of sensitive resources and construction boundaries. Vernal pools adjacent to impact areas shall be fenced as appropriate with orange safety fencing to ensure no people or equipment impact the vernal pools during construction. A silt fence shall be installed along the base of the roadway to prevent increased erosion or sedimentation during construction adjacent to vernal pool areas. Gravel bags shall be placed along the bottom of the fence to minimize erosion or sedimentation into vernal pools and removed upon completion of construction. Best management practices placed near and around vernal pools shall be installed appropriately as to not impact vernal pool watersheds, with oversight from a Biologist.

65. Grading Covered Activities immediately adjacent to vernal pools shall be timed to avoid wet weather to minimize potential impacts (e.g., siltation) to the vernal pools unless the area to be graded is at an elevation below the pools. To achieve this goal, grading adjacent to avoided pools shall comply with the following:
- a. Grading shall occur only when the soil is dry to the touch both at the surface and 1 inch below. A visual check for color differences (i.e., darker soil indicating moisture) in the soil between the surface and 1 inch below indicates whether the soil is dry.
 - b. After rainfall of greater than 0.2 inch, grading shall occur only after the soil surface has dried sufficiently as described above, and no sooner than 2 days (48 hours) after the rain event ends.
 - c. If rain occurs during grading, work shall stop and resume only after soils are dry, as described above.
 - d. Grading shall be done in a manner to prevent runoff from entering preserved vernal pools.
 - e. If necessary, water spraying shall be conducted at a level sufficient to control fugitive dust but not to cause runoff into vernal pools.
 - f. If mechanized grading is necessary, grading shall be performed in a manner to minimize soil compaction (i.e., use the smallest type of equipment needed to feasibly accomplish the work).
66. If SDG&E needs to temporarily work in vernal pools or complexes under wet conditions, vehicular and foot traffic shall be directed away from the pools. If vehicular and foot traffic cannot be directed away from the pools due to construction requirements, other impact minimization measures shall be used, such as the installation of steel plates or fabric mats. A qualified Biologist shall be present to oversee implementation of minimization measures.

67. When vernal pools are located above gas lines and repair work is necessary, work areas shall be minimized and soil shall be stockpiled for replacement after repairs.
68. To the extent feasible, all construction equipment shall be fueled, staged, and maintained at least 100 feet from the nearest vernal pools. If this is not feasible, drip pans or other means shall be implemented to protect vernal pools from accidental spills.
69. For new projects, impacts to vernal pools and vernal pool Covered Species would only be covered through the Minor Amendment process as discussed in Section 6.5.1.2, including acquiring Mitigation Credits as discussed in Section 5.5.

5.1.11.2 Road Ruts and Other Seasonal, Man-Made Depressions

70. Impacts from Covered Activities to road ruts and other seasonal, man-made depressions where there is potential for fairy shrimp to occur shall be avoided through project design considerations, to the extent feasible. Vehicular traffic through dry road ruts and other seasonal, man-made depressions shall not be considered an impact that requires mitigation.
71. If impacts to road ruts and other seasonal, man-made depressions where there is potential for fairy shrimp cannot be avoided, a survey shall be conducted by a Biologist using established survey protocols for fairy shrimp to determine species presence. If project timing does not allow for surveys, it shall be assumed that the road ruts and other seasonal, man-made depressions are occupied.
72. If surveys determine that road ruts and other seasonal, man-made depressions are occupied (or assumed occupied), permanent impacts that cannot be avoided shall be mitigated per the vernal pool mitigation ratios in Table 5.5. or through other alternatives outlined in Section 5.5 as agreed to by USFWS. This mitigation would need to be approved prior to Covered Activities occurring to the road ruts and other seasonal, man-made depressions.
73. If surveys determine road ruts and other man-made depressions are not occupied by Covered fairy shrimp species, Covered Activities and impacts shall be allowed without mitigation.
74. Prior to permanent and temporary impacts to occupied road ruts, soil (inoculum) shall be collected as described in Section 5.1.11.1, Protocol 63 for vernal pools.
75. Grading Covered Activities on existing access roads shall not take place when the soils are wet, as described in Section 5.1.11.1, Protocol 65 for vernal pools, to minimize indirect impacts from erosion and sedimentation.

Prior to grading Covered Activities, a Biologist shall demarcate a road rut proposed for grading and a Biologist shall be present during grading Covered Activities. Direct impacts when grading existing access roads shall be avoided by lifting the blade of the grader over the demarcated road rut within the road. Any windrows resulting from grading in the vicinity of vernal pools or complexes shall be flattened with equipment tires to avoid affecting hydrology in the area.

5.1.12 Narrow Endemic Plant Protocols

76. Impacts to narrow endemic plants as identified in Table 3.1 are to be avoided to the extent practical.
- When work occurs within a known or potential area of occurrence of a narrow endemic plant, then focused surveys shall occur within the appropriate blooming seasons. If project timing does not allow for surveys, it shall be assumed that all habitat to be impacted is occupied.
 - If a narrow endemic is observed or assumed to be within the work area, it shall be avoided to the greatest extent practicable. A Biologist shall be onsite to assist crews in avoiding impacts to the extent practicable. The Biologist shall use flagging as needed and monitor Covered Activities to ensure avoidance of impacts. The Biologist shall have the authority to immediately stop any Covered Activity that does not adhere to the project environmental constraints to avoid the unanticipated impacts. Additional measures, such as installing matting within temporary work areas to avoid soil compaction, may also be recommended.
 - If avoidance is not feasible, SDG&E shall confer with USFWS to determine the best approach for minimization of impacts, including additional measures such as restoration, enhancement of suitable habitat, and salvage/relocation of species to a suitable location. Permanent impacts to narrow endemic plants that cannot be avoided shall be mitigated in kind per the mitigation ratios in Table 5.4, or through other alternatives in Section 5.5 agreed to by USFWS.
 - For new projects, impacts to narrow endemic plants or their supporting habitat would only be covered through the Minor Amendment process as discussed in Section 6.5.1.2, including acquiring Mitigation Credits as discussed in Section 5.5.

5.1.13 Species-Specific Protocols

SDG&E's long-standing conservation strategy for avoidance, minimization, and mitigation of impacts has effectively avoided and minimized impacts from Covered

Activities. Based upon over 26 years of experience and the current status of certain Covered Species, the following additional Species-Specific Protocols are incorporated to enhance current practices. Not all measures may be relevant or applicable in all cases. For Species-Specific Protocols, the applicable measures shall be identified within the PSR and submitted to USFWS for review.¹³

77. Laguna Mountains Skipper (*Pyrgus ruralis lagunae*)

- Impacts from Covered Activities where there is a potential for Laguna Mountains skipper to occur on Palomar Mountain or designated critical habitat with PBFs in the Lagunas (LMS-Habitat) shall be avoided through project design considerations, to the extent feasible. PBFs include:
 - The hostplants, Cleveland's horkelia (*Horkelia clevelandii*) or *Potentilla glandulosa*, in meadows or forest openings needed for reproduction.
 - Nectar sources suitable for feeding by adult Laguna Mountains skippers, including *Lasthenia* spp., *Pentachaeta aurea*, *Ranunculus* spp., and *Sidalcea* spp. found in woodlands or meadows.
 - Wet soil or standing water associated with features such as seeps, springs, or creeks where water and minerals are obtained during the adult flight season.
- If impacts to LMS-Habitat cannot be avoided, a Biologist shall survey LMS-Habitat that has the potential to be impacted by Covered Activities. Surveys are to be conducted during the adult flight season (April 15 through August 15) using appropriate survey techniques to determine presence of Laguna Mountains skipper. If project timing does not allow for adult flight season surveys, it shall be assumed that all LMS-habitat to be impacted is occupied.
- If surveys determine that LMS-Habitat is occupied (or assumed occupied due to lack of survey), permanent impacts that cannot be avoided shall be mitigated in kind per the mitigation ratios in Table 5.4, or through other alternatives in Section 5.5 agreed to by USFWS. This mitigation would need to be approved prior to Covered Activities occurring within LMS-Habitat.
- If surveys determine LMS-Habitat is not occupied, Covered Activities and impacts shall be allowed. Impacts to unoccupied LMS-Habitat shall be mitigated per Section 5.5, Table 5.3a.

¹³ Species-Specific Protocols for golden eagle and bald eagle are provided in the Eagle Conservation Plan included as Appendix B.

- When work shall occur within or adjacent to LMS-Habitat, timing of Covered Activities shall be evaluated to ensure minimization of impacts to Laguna Mountains skipper. A qualified Biologist shall provide recommendations to avoid and minimize impacts to this species. Depending on the Covered Activity and construction methods required, minimization of impacts may be increased by conducting work within the diapause phase, or in the flight season for this species. Recommendations shall be included in the PSR for USFWS review. Measures that may be implemented include, but are not limited to, the following:
 - Flag Cleveland's horkelia for avoidance. The host plants shall be avoided to the extent feasible.
 - When trampling Cleveland's horkelia is necessary to conduct work, plywood boards shall be placed where crews shall be working in order to distribute weight more evenly and reduce impacts to Cleveland's horkelia.
 - Pole replacement may be conducted by helicopter, where feasible, to reduce impacts on the ground from vehicle and equipment travel and staging.
 - Incorporate Cleveland's horkelia seed collection and dispersal into native habitat restoration Covered Activities, where appropriate.
 - For new projects, impacts to Laguna Mountains skipper and LMS-Habitat would only be covered through the Minor Amendment process as discussed in Section 6.5.1.2, including acquiring Mitigation Credits as discussed in Section 5.5.

78. Hermes Copper Butterfly (*Lycaena hermes*)

- Impacts from Covered Activities to Hermes copper butterfly Mapped Areas with physical and biological features (PBFs) (HCB-Habitat¹⁴) shall be avoided through project design considerations, to the extent feasible. PBFs include spiny redberry (*Rhamnus crocea*) and nectar sources (e.g., California buckwheat [*Eriogonum fasciculatum*]). Mapped Areas are based on known and historic occurrences. The Mapped Areas shall be updated annually as new Hermes copper butterfly sightings are documented. A 1-kilometer radius (or approximately 0.6 mile) circle shall be placed around each new Hermes copper butterfly sighting and included in the Mapped Area. USFWS shall be responsible for updating the

¹⁴ HCB-Habitat is defined as areas that have the physical and biological features and are within the Mapped Areas as delineated by USFWS and updated annually.

Mapped Areas and providing the updated information to SDG&E by December 1 of each year, for use the following year.

- If impacts to Hermes copper butterfly Mapped Areas cannot be avoided, a survey of HCB-Habitat with potential to be impacted shall be conducted by a Biologist during the adult flight season using appropriate survey techniques to determine presence of Hermes copper butterfly. If project timing does not allow for adult flight season surveys, it shall be assumed that all HCB-Habitat to be impacted is occupied.
- If surveys determine that HCB-Habitat is occupied (or assumed occupied due to lack of survey), permanent impacts that cannot be avoided shall be mitigated in kind per the mitigation ratios in Table 5.4, or through other alternatives in Section 5.5 agreed to by USFWS. This mitigation would need to be approved prior to Covered Activities occurring within HCB-Habitat.
- If surveys determine HCB-Habitat is not occupied, Covered Activities and impacts shall be allowed. Permanent impacts to unoccupied HCB-Habitat shall be mitigated per Section 5.5, Table 5.3a.
- When work shall occur within or adjacent to HCB-Habitat, timing of Covered Activities shall be evaluated to ensure minimization of impacts to Hermes copper butterfly. A qualified Biologist shall provide recommendations to avoid and minimize impacts to this species. Depending on the Covered Activity and construction methods required, minimization of impacts may be increased by conducting work within the diapause phase, or in the flight season for this species. Recommendations shall be included as part of the PSR for USFWS review. Measures that may be implemented include, but are not limited to, the following:
 - Flag spiny redberry and California buckwheat for avoidance. The host plants shall be avoided to the extent feasible.
 - Pole replacement may be conducted by helicopter, where feasible, to reduce impacts on the ground from vehicle and equipment travel and staging.
 - Incorporate larval host plant species (i.e., spiny redberry) and California buckwheat) into native habitat restoration plans, where appropriate.
 - When SDG&E routine road maintenance shall be conducted in HCB-Habitat, individual shrubs along the road edge and the edges of established work pads shall be flagged by the Biologist and avoided to the maximum extent practicable. Trimming of spiny redberry individuals shall be limited to

those encroaching into access road and established work pads. Removal of habitat encroaching within the roads and work pads is anticipated to be minimal as cyclical, routine maintenance is conducted to maintain 24/7 access to Facilities. Vegetation trimming as described is not anticipated to incur measurable impacts.

- For new projects, impacts to Hermes copper butterfly and HCB-Habitat would only be covered through the Minor Amendment process as discussed in Section 6.5.1.2, including acquiring Mitigation Credits as discussed in Section 5.5.

79. Arroyo Toad (*Anaxyrus californicus*)

- Impacts from Covered Activities where there is a potential for arroyo toad to occur or in designated critical habitat with PBFs (ARTO-Habitat) shall be avoided through project design considerations, to the extent feasible. PBFs include:
 - Rivers or streams with hydrologic regimes that supply water to provide space, food, and cover needed to sustain eggs, tadpoles, metamorphosing juveniles, and adult breeding toads. Breeding pools must persist a minimum of 2 months for the completion of larval development. However, due to the dynamic nature of southern California riparian systems and flood regimes, the location of suitable breeding pools may vary from year to year. Specifically, the conditions necessary to allow for successful reproduction of arroyo toads are:
 - Breeding pools that are less than 6 inches deep;
 - Areas of flowing water with current velocities less than 1.3 feet per second; and
 - Surface water that lasts for a minimum of 2 months during the breeding season (a sufficient wet period in the spring months to allow arroyo toad larvae to hatch, mature, and metamorphose).
 - Riparian and adjacent upland habitats, particularly low-gradient (typically less than 6%) stream segments and alluvial streamside terraces with sandy or fine gravel substrates that support the formation of shallow pools and sparsely vegetated sand and gravel bars for breeding and rearing of tadpoles and juveniles; and adjacent valley bottomlands that include areas of loose soil where toads can burrow underground, to provide foraging and living areas for juvenile and adult arroyo toads.

- A natural flooding regime, or one sufficiently corresponding to natural, that:
 - Is characterized by intermittent or near-perennial flow that contributes to the persistence of shallow pools into at least mid-summer;
 - Maintains areas of open, sparsely vegetated, sandy stream channels and terraces by periodically scouring riparian vegetation; and
 - Also modifies stream channels and terraces and redistributes sand and sediment, such that breeding pools and terrace habitats with scattered vegetation are maintained.
- Stream channels and adjacent upland habitats that allow for movement to breeding pools, foraging areas, overwintering sites, upstream and downstream dispersal, and connectivity to areas that contain suitable habitat.
- If impacts to ARTO-Habitat cannot be avoided, a Biologist shall survey ARTO-Habitat that has the potential to be impacted by Covered Activities following current USFWS protocols to determine species presence. If project timing does not allow for surveys, it shall be assumed that all ARTO-Habitat to be impacted is occupied.
- If surveys determine that ARTO-Habitat is occupied (or assumed occupied due to lack of survey), permanent impacts that cannot be avoided shall be mitigated in kind per the mitigation ratios in Table 5.4, or through other alternatives in Section 5.5 agreed to by USFWS. This mitigation would need to be approved prior to Covered Activities occurring within ARTO-Habitat.
- If surveys determine ARTO-Habitat is not occupied, Covered Activities and impacts shall be allowed. Impacts to unoccupied ARTO-Habitat shall be mitigated per Section 5.5, Tables 5.3a and 5.3b.
- When work shall occur within or adjacent to ARTO-Habitat, timing of Covered Activities shall be evaluated to ensure minimization of impacts to arroyo toad. A qualified Biologist shall provide recommendations to avoid and minimize impacts to this species. Recommendations shall be included in the PSR for USFWS review. Measures that may be implemented include, but are not limited to, the following:
 - A Biologist shall be present during construction as needed in order to avoid impacts to arroyo toad.

- A Biologist shall lead a worker environmental awareness training for crews and conduct a sweep of the work area prior to the beginning of work each day, as needed. If arroyo toad individuals are found, the individuals shall be relocated by a Biologist out of harm's way.
- A Biologist shall guide the crews to select an appropriate area for equipment and material staging that specifically excludes or minimizes any areas with the high potential for arroyo toad to occur.
- A Biologist shall escort construction vehicles along an overland travel route that minimizes potential impacts to sensitive species.
- Covered Activities shall be designed to avoid or minimize the placement of equipment or personnel within the stream channel, on sand and fine gravel bars, on intermittent shallow pools, on banks, on sparsely vegetated sandy terraces, and/or on flats within waters of the United States. A qualified Biologist shall be present during construction within suitable habitat in order to avoid impacts, including to arroyo toad.
- Covered Activities within uplands that may support arroyo toad shall take place from approximately March 15 through August 15 when practicable during the arroyo toad breeding season when arroyo toads are typically more active and closer to breeding habitat.
- Covered Activities within stream channels that may support arroyo toad breeding shall take place from approximately August 16 through March 14 when practicable to avoid the arroyo toad breeding season. When practicable, Covered Activities shall be timed so that work within a stream channel is conducted when flows are at their lowest or are nonexistent.
- Prior to clearing, grubbing, and construction, arroyo toad exclusionary fencing shall be installed around the perimeter of all work areas within potential arroyo toad breeding habitat as determined by a qualified arroyo toad Biologist and USFWS.¹⁵ In areas without water flows, the fence shall consist of woven nylon fabric or similar material at least 2 feet high, staked firmly to the ground. In areas with water flows, an appropriate fabric shall be used to permit water

¹⁵ A qualified arroyo toad Biologist will be approved by USFWS and must be able to identify arroyo toad visually and vocally and should have experience in handling and translocating arroyo toads. In addition, the Biologist should be familiar with all life stages and habitat of the arroyo toad.

movement while restricting arroyo toads from entering the exclusion area. In areas where soils are suitable for burrowing, the lower 1 foot of material shall stretch outward along the ground and be secured with a continuous line of sandbags to prevent burrowing beneath the fence. Doubling this line (i.e., stacking sand or gravel bags two-deep) may reduce maintenance and should be considered to improve the integrity of the fencing. In areas where soils are not suitable for burrowing, (i.e., hardpack soils), fencing may be buried to reduce maintenance concerns and improve the integrity of the fencing over time. Decisions on the appropriate fencing installation method for a given reach shall be made by the qualified arroyo toad Biologist. All fencing shall be removed following completion of all project-related Covered Activities. Ingress and egress of equipment and personnel shall use a single access point to the site, which shall be as narrow as possible and closed off by exclusionary fence when personnel are not on the work site.

- Prior to vegetation grubbing or construction, but after exclusionary fence has been installed around the impact footprint, at least three surveys for arroyo toads of any life stages or clutches shall be conducted within the fenced area by a qualified Biologist knowledgeable of arroyo toad biology and ecology. Surveys shall be conducted during the appropriate climatic conditions during the appropriate time of day or night to maximize the likelihood of encountering arroyo toads. If climatic conditions are not appropriate for arroyo toad movement during the surveys, a qualified Biologist may attempt to elicit a response from the arroyo toads, during nights (i.e., at least 1 hour after sunset) with temperatures above 50 degrees Fahrenheit (to the extent practicable depending on time of year), by spraying the project area with water to simulate a rain event. If arroyo toads of any life stages or clutches are found within the project area, they shall be captured and translocated, by the Biologist, to the closest area of suitable habitat. Before each workday begins, the qualified Biologist shall also check to see if arroyo toads have entered the impact footprint. If arroyo toads are found within the impact footprint, the individuals shall be moved outside of the impact footprint, if suitable habitat exists, or out of harm's way.
- The qualified Biologist shall be present each morning before construction begin to inspect all arroyo toad exclusionary fencing for damage or holes, conduct a sweep of the work area for arroyo toad of any life stages, inspect any covered

stockpiles for gaps or sign that arroyo toads have accessed the soils underneath and shall be present when these covers are removed. If burrows characteristic of arroyo toads are found, the burrows shall be hand excavated. The project Biologist shall relocate any arroyo toads found to suitable habitat adjacent to the construction site but at least 200 feet away.

- Nighttime construction shall be avoided in and/or adjacent to occupied ARTO-Habitat. If critical work during nighttime hours is necessary, a biological monitor shall conduct a clearance survey of the access road and work areas within 500 feet of occupied ARTO-Habitat year-round.
- In areas with the potential for arroyo toad, stockpiled soils shall be covered with plastic or other material at the end of each workday. Any covered stockpile edges shall be held in place by sandbag, fabric-wrapped wattles, or hydromulch at soil storage sites to avoid creating an attractive nuisance for toads.
- Holes or trenches created by Covered Activities that have the potential to trap arroyo toads shall be covered with cover plates or other materials at the end of each workday. Holes or trenches that are covered shall have the edges sealed with sandbags, bricks, or boards to prevent arroyo toads from becoming trapped in holes or trenches. The project Biologist shall inspect all holes and trenches (covered and uncovered) for the presence of arroyo toads prior to disturbance of soils or removal of cover plates. The project Biologist shall be present when the cover plates are removed and shall inspect and relocate any arroyo toads that may have entered the trench during the night to suitable habitat adjacent to the construction site but at least 200 feet away.
- For new projects, impacts to arroyo toad and occupied ARTO-Habitat would only be covered through the Minor Amendment process as discussed in Section 6.5.1.2, including acquiring Mitigation Credits as discussed in Section 5.5.

80. California Red-legged Frog (*Rana draytonii*)

- Within 14 days prior to the onset of construction, a qualified Biologist shall conduct preconstruction surveys for California red-legged frog within areas that fall within 300 feet of any suitable aquatic habitat for this species. If California red-legged frogs are observed during the preconstruction survey, they shall be avoided to the greatest extent practicable. If avoidance is not feasible,

SDG&E shall confer with USFWS to determine the best approach for minimization of impacts, including additional measures such as restoration, enhancement of suitable habitat, and salvage/relocation of species to a suitable location. For new projects, impacts to California red-legged frog and its habitat would only be covered through the Minor Amendment process as discussed in Section 6.5.1.2, including acquiring Mitigation Credits as discussed in Section 5.5.

81. Western Pond Turtle (*Actinemys marmorata*)

- Within 14 days prior to the onset of construction, a qualified Biologist shall conduct preconstruction surveys for western pond turtle within areas that fall within 100 feet of any suitable aquatic and upland nesting habitat for this species. If western pond turtles are observed during the preconstruction survey, they shall be avoided to the greatest extent practicable. If avoidance is not feasible, SDG&E shall confer with USFWS to determine the best approach for minimization of impacts, including additional measures such as restoration, enhancement of suitable habitat, and salvage/relocation of species to a suitable location.
- For new projects, impacts to western pond turtle and its habitat would only be covered through the Minor Amendment process as discussed in Section 6.5.1.2, including acquiring Mitigation Credits as discussed in Section 5.5.

82. Tricolored Blackbird (*Agelaius tricolor*)

- Impacts from Covered Activities where there is a potential for the tricolored blackbird to occur (TRBL-Habitat) shall be avoided through project design considerations, to the extent feasible.
- If impacts to TRBL-Habitat cannot be avoided, a Biologist shall survey TRBL-Habitat that has the potential to be impacted by Covered Activities using appropriate survey techniques to determine species presence. If project timing does not allow for surveys, it shall be assumed that all TRBL-Habitat to be impacted is occupied.
- If surveys determine that TRBL-Habitat is occupied (or assumed occupied due to lack of survey), permanent impacts that cannot be avoided shall be mitigated in kind per the mitigation ratios in Table 5.4, or through other alternatives in Section 5.5 agreed to by USFWS. This mitigation would need to be approved prior to Covered Activities occurring within TRBL-Habitat.

- If surveys determine TRBL-Habitat is not occupied, Covered Activities and impacts shall be allowed. Impacts to unoccupied TRBL-Habitat shall be mitigated per Section 5.5, Table 5.3b.
- Whenever practicable, minimize impacts through timing of work in freshwater marsh TRBL-Habitat to avoid the nesting season for tricolored blackbird and conduct TRBL-Habitat removal prior to the initiation of the riparian avian breeding season breeding season (March 15 through September 15).
- If work is scheduled during the riparian avian breeding season and within suitable habitat, a Biologist shall conduct a preconstruction nesting survey to ensure that no tricolored blackbird active nests are present within 500 feet of Covered Activities.
- If nesting surveys indicate an active nest is likely or an active tricolored blackbird nest is observed, no Covered Activities shall be implemented within 500 feet of the nest. Work within nest buffers may not resume until the young fledge and disperse, or the nest has been determined to fail by the Biologist. In the event that the buffer criteria cannot be achieved, SDG&E shall develop alternative measures approved by USFWS. Specific buffer requirements may be reduced with approval by USFWS on a project-by-project basis as appropriate.
- When an active nest is present, a Biologist shall be onsite during Covered Activities as needed to avoid and minimize the potential for impacts to individuals.
- Direct take of nesting individuals and destruction of active nests are not allowed.

For new projects, impacts to tricolored blackbird and TRBL-Habitat would only be covered through the Minor Amendment process as discussed in Section 6.5.1.2, including acquiring Mitigation Credits as discussed in Section 5.5.

83. Burrowing Owl (*Athene cunicularia*)

- Impacts from Covered Activities where there is known or a potential for burrowing owl to nest (e.g., in the vicinity (within 600 meters [or approximately 0.4 mile] of known nesting occurrences) (BUOW-Habitat) shall be avoided through project design considerations, to the extent feasible. Vegetation communities considered suitable for burrowing owl nesting shall include low-lying open vegetation such as open coastal sage scrub, native and nonnative annual grassland, landscape/ornamental, and disturbed habitats.

- If impacts to BUOW-Habitat cannot be avoided, a Biologist shall survey BUOW-Habitat that has the potential to be impacted by Covered Activities following current protocols to determine species presence. If project timing does not allow for surveys, permanent impacts to potential nesting habitat shall be assumed occupied.
- If surveys determine that BUOW-Habitat is occupied (or assumed occupied due to lack of survey), permanent impacts that cannot be avoided shall be mitigated in kind per the mitigation ratios in Table 5.4, or through other alternatives in Section 5.5 agreed to by USFWS. This mitigation would need to be approved prior to Covered Activities occurring within BUOW-Habitat.
- If surveys determine BUOW-Habitat is not occupied, Covered Activities and impacts shall be allowed. Impacts to unoccupied BUOW-Habitat shall be mitigated per Section 5.5, Table 5.3a.
- During the breeding season (February 1 through August 31) and non-breeding (September 1 through January 31), a preconstruction survey (i.e., take avoidance survey) shall be conducted no less than 14 days prior to initiating ground disturbance Covered Activities when there is the presence of small mammal burrows that have potential to support burrowing owl. The Biologist shall conduct a preconstruction survey to ensure that no active burrows are present within 300 feet of Covered Activities. The Biologist shall also survey irrigation pipes, culverts, and other depressions or non-natural “burrows” that may provide shelter for burrowing owl.
- If active burrowing owl nests or burrow shelters are identified, no Covered Activities shall be conducted within a minimum distance of 300 feet of the nest. Work within nest buffers may not resume until the young fledge and disperse, or the nest has been determined to fail by the Biologist. In the event that the buffer criteria cannot be achieved, SDG&E would develop alternative measures approved by USFWS. Specific buffer requirements may be reduced with approval by USFWS on a project-by-project basis as appropriate.
- When an active nest is present, a Biologist shall be onsite during Covered Activities as needed to avoid and minimize potential impacts to individuals.
- During the nonbreeding season, individual burrowing owls that shall be directly impacted by the Project may be passively relocated with concurrence from USFWS. Passive relocation methodologies shall be outlined in a project-specific plan and follow the most current guidelines accepted by USFWS.
- Direct take of nesting individuals and destruction of active nests are not allowed.

- Pesticides are prohibited in areas where burrowing owls are present.

84. Golden Eagle (*Aquila chrysaetos*)

- Species-Specific Protocols for golden eagle are provided in the ECP included as Appendix B.

85. Coastal Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*)

- Impacts from Covered Activities where there is a potential for coastal cactus wren to occur, especially individuals or groupings of cactus greater than 2 feet tall (CACW-Habitat), shall be avoided through project design considerations, to the extent feasible.
- If impacts to CACW-Habitat cannot be avoided, a Biologist shall survey CACW-Habitat that has the potential to be impacted by Covered Activities using appropriate survey techniques to determine species presence. If project timing does not allow for surveys, it shall be assumed that all CACW-Habitat to be impacted is occupied.
- If surveys determine that CACW-Habitat is occupied (or assumed occupied due to lack of survey), permanent impacts that cannot be avoided shall be mitigated in kind per the mitigation ratios in Table 5.4, or through other alternatives in Section 5.5 agreed to by USFWS. This mitigation would need to be approved prior to Covered Activities occurring within CACW-Habitat.
- If surveys determine CACW-Habitat is not occupied, Covered Activities and impacts shall be allowed. Impacts to unoccupied CACW-Habitat shall be mitigated per Section 5.5, Table 5.3a.
- Whenever practicable, minimize impacts through timing of work in CACW-Habitat and conduct CACW-Habitat removal prior to the initiation of the upland avian breeding season (February 15 through August 31).
- If work is scheduled during the breeding season and within CACW-Habitat, a Biologist shall conduct a preconstruction nesting survey to ensure that no active cactus wren nests are present within 300 feet of the Covered Activities.
- If an active nest is observed, no Covered Activities shall be conducted within 300 feet of the nest. Work within nest buffers may not resume until the young fledge and disperse, or the nest has been determined to fail by the Biologist. In the event that the buffer criteria cannot be achieved, SDG&E would develop alternative measures approved by USFWS. Specific buffer requirements may

be reduced with approval by USFWS on a project-by-project basis as appropriate.

- When an active nest is present, a Biologist shall be onsite during Covered Activities as needed to avoid and minimize potential impacts to individuals.
- Direct take of nesting individuals and destruction of active nests are not allowed.
- Salvage native cactus to be impacted within CACW-Habitat and make available for use in restoration projects per County of San Diego guidelines for cactus salvage or other appropriate references.

86. Western Snowy Plover (*Charadrius nivosus nivosus*)

- Permanent impacts to western snowy plover nesting sites from Covered Activities shall be avoided.
- Temporary impacts from Covered Activities where there is a potential for western snowy plover to occur or in designated critical habitat with PBFs (SNPL-Habitat) shall be avoided through project design considerations, to the extent feasible.
- Schedule work within 800 feet of western snowy plover nesting sites between September 15 and March 1 to the maximum extent possible. If work is scheduled to occur during the breeding season, no Covered Activities shall be implemented within 800 feet of the nesting site. Work within nest buffers may not resume until the young fledge and disperse, or the nest has been determined to fail by a western snowy plover Biologist. In the event that the buffer criteria cannot be achieved, SDG&E would develop alternative measures and/or biological monitoring approved by USFWS. Specific buffer requirements may be reduced with approval by USFWS on a project-by-project basis as appropriate.
- For projects scheduled within 200 feet of potential western snowy plover habitat during the non-breeding season (September 16 through February 28), the western snowy plover Biologist shall conduct preconstruction surveys for western snowy plovers in and within 200 feet of the project footprint.
 - If western snowy plovers are observed within 200 feet of the project footprint, a western snowy plover Biologist shall monitor the western snowy plovers at least once per day during construction activities.
 - If western snowy plovers are observed within the project footprint, the western snowy plover Biologist may slowly walk

towards the western snowy plovers, allowing the western snowy plovers to move away from the project footprint, prior to commencing project activities. The western snowy plover Biologist shall guide the western snowy plovers at least 200 feet from the project footprint.

- To the extent feasible, new linear Facilities within 800 feet of western snowy plover nesting sites shall be placed underground. If overhead structures (poles) are necessary, SDG&E shall explore engineering designs that shall reduce available perch location for potential avian predators.
- To control the spread of weeds that may degrade western snowy plover nesting sites, all earth-moving construction equipment shall be thoroughly power-washed before working within 200 feet of western snowy plover nesting sites.
- Any stockpiled soils within 200 feet of western snowy plover nesting sites shall be covered with plastic or other material and the edges shall be held in place by sandbags at the end of each workday.
- Direct take of nesting individuals and destruction of active nests are not allowed.
- Temporary impact areas within western snowy plover nesting sites shall be re-contoured to mimic the natural landscape.

87. Western Yellow-billed Cuckoo (*Coccyzus americanus*)

- Impacts from Covered Activities where there is a potential for the western yellow-billed cuckoo to occur (WYBC-Habitat) shall be avoided through project design considerations, to the extent feasible.
- If impacts to WYBC-Habitat cannot be avoided, a Biologist shall survey WYBC-Habitat that has the potential to be impacted by Covered Activities using appropriate survey techniques to determine species presence. If project timing does not allow for surveys, it shall be assumed that all WYBC-Habitat to be impacted is occupied.
- If surveys determine that WYBC-Habitat is occupied (or assumed occupied due to lack of survey), permanent impacts that cannot be avoided shall be mitigated in kind per the mitigation ratios in Table 5.4, or through other alternatives in Section 5.5 agreed to by USFWS. This mitigation would need to be approved prior to Covered Activities occurring within WYBC-Habitat.

- If surveys determine WYBC-Habitat is not occupied, Covered Activities and impacts shall be allowed. Impacts to unoccupied WYBC-Habitat shall be mitigated per Section 5.5, Table 5.3b.
- Whenever practicable, minimize impacts through timing of work in WYBC-Habitat to avoid the nesting season for riparian avian species and conduct WYBC-Habitat removal prior to the initiation of the riparian avian breeding season (March 15 through September 15).
- If work is scheduled during the riparian avian breeding season and within WYBC-Habitat, a Biologist shall conduct a preconstruction nesting survey to ensure that no western yellow-billed cuckoo active nests are present within 300 feet of the Covered Activities.
- If nesting surveys indicate an active nest is likely or an active nest is observed, no Covered Activities shall be implemented within 300 feet of the nest. Work within nest buffers may not resume until the young fledge and disperse, or the nest has been determined to fail by the Biologist. In the event that the buffer criteria cannot be achieved, SDG&E shall develop alternative measures to be approved by USFWS. Specific buffer requirements may be reduced, with approval of USFWS, on a project-by-project basis as appropriate.
- When an active nest is present, a Biologist shall be onsite during Covered Activities as needed to avoid and minimize the potential for impacts to individuals.
- Direct take of nesting individuals and destruction of active nests are not allowed.
- For new projects, impacts to yellow-billed cuckoo and WYBC-Habitat would only be covered through the Minor Amendment process as discussed in Section 6.5.1.2, including acquiring Mitigation Credits as discussed in Section 5.5.

88. Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

- Impacts from Covered Activities where there is a potential for southwestern willow flycatcher to occur or in designated critical habitat with PBFs (SWFL-Habitat) shall be avoided through project design considerations, to the extent feasible. PBFs include:
 - *Riparian vegetation.* Riparian habitat along a dynamic river or lakeside, in a natural or man-made successional environment (for nesting, foraging, migration, dispersal, and shelter) that is composed of trees and shrubs (that can include Gooddings willow (*Salix gooddingii*), coyote willow

(*Salix exigua*), Geyer's willow (*Salix geyeriana*), arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), yewleaf willow (*Salix taxifolia*), pacific willow (*Salix lucida*), boxelder (*Acer negundo*), tamarisk sp. (*Tamarix* sp.), Russian olive (*Elaeagnus angustifolia*), buttonbush (*Cephalanthus occidentalis*), cottonwood (*Populus deltoides*), stinging nettle (*Urtica dioica*), alder sp. (*Alnus* sp.), velvet ash (*Fraxinus velutina*), poison hemlock (*Conium maculatum*), blackberry (*Rubus ursinus*), seep willow (*Baccharis salicifolia*), oak sp. (*Quercus* sp.), rose sp. (*Rosa* sp.), sycamore (*Platanus occidentalis*), false indigo (*Baptisia australis*), Pacific poison oak (*Toxicodendron diversilobum*), grape sp. (*Vitis* sp.), Virginia creeper (*Parthenocissus quinquefolia*), Siberian elm (*Ulmus pumila*), and walnut sp. (*Juglans* sp.)) and some combination of:

- Dense riparian vegetation with thickets of trees and shrubs that can range in height from about 6 to 98 feet. Lower-stature thickets 6 to 13 feet tall are found at higher elevation riparian forests and tall-stature thickets are found at middle and lower-elevation riparian forests;
 - Areas of dense riparian foliage at least from the ground level up to approximately 13 feet above ground or dense foliage only at the shrub or tree level as a low, dense canopy;
 - Sites for nesting that contain a dense (about 50% to 100%) tree or shrub (or both) canopy (the amount of cover provided by tree and shrub branches measured from the ground);
 - Dense patches of riparian forests that are interspersed with small openings of open water or marsh or areas with shorter and sparser vegetation that creates a variety of habitat that is not uniformly dense. Patch size may be as small as 0.25 acre or as large as 175 acres.
- If impacts to SWFL-Habitat cannot be avoided, a Biologist shall survey SWFL-Habitat that has the potential to be impacted by Covered Activities following current USFWS protocols to determine species presence. If project timing does not allow for surveys, it shall be assumed that all SWFL-Habitat to be impacted is occupied.
 - If surveys determine that SWFL-Habitat is occupied (or assumed occupied due to lack of survey), permanent impacts that cannot be avoided shall be mitigated in kind per the mitigation ratios in Table

5.4, or through other alternatives in Section 5.5 agreed to by USFWS. This mitigation would need to be approved prior to Covered Activities occurring within SWFL-Habitat.

- If surveys determine SWFL-Habitat is not occupied, Covered Activities and impacts shall be allowed. Impacts to unoccupied SWFL-Habitat shall be mitigated per Section 5.5, Table 5.3b.
- Whenever practicable, minimize impacts through timing of work in riparian SWFL-Habitat to avoid the nesting season for riparian avian species and conduct SWFL-Habitat removal prior to the initiation of the riparian avian breeding season (March 15 through September 15).
- If work is scheduled during the riparian avian breeding season, and within suitable SWFL-Habitat, a Biologist shall conduct a preconstruction nesting survey to ensure that no active southwestern willow flycatcher nests are present within 300 feet of the Covered Activities.
- If an active southwestern willow flycatcher nest is observed, no Covered Activities shall be implemented within 300 feet of the nest. Work within nest buffers may not resume until the young fledge and disperse, or the nest has been determined to fail by the Biologist. In the event that the buffer criteria cannot be achieved, SDG&E would develop alternative measures approved by USFWS. Specific buffer requirements may be reduced with approval by USFWS on a project-by-project basis as appropriate.
- When an active nest is present, a Biologist shall be onsite during Covered Activities as needed to avoid and minimize the potential for impacts to individuals.
- Direct take of nesting individuals and destruction of active nests are not allowed.
- For new projects, impacts to southwestern willow flycatcher and SWFL-Habitat would only be covered through the Minor Amendment process as discussed in Section 6.5.1.2, including acquiring Mitigation Credits as discussed in Section 5.5.

89. Bald Eagle (*Haliaeetus leucocephalus*)

- Species-Specific Protocols for bald eagle are provided in the ECP included as Appendix B.

90. Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*)

- Whenever practicable, minimize impacts through timing of work in Belding's savannah sparrow habitat (BSS-Habitat) to avoid the

nesting season and conduct BSS-Habitat removal outside the breeding season (March 15 through September 15).

- If work is scheduled during the Belding's savannah sparrow breeding season, and within suitable BSS-Habitat, a Biologist shall conduct a preconstruction nesting survey to ensure that no active Belding's savannah sparrow nests are present within 300 feet of the Covered Activities.
- If an active Belding's savannah sparrow nest is observed, no Covered Activities shall be implemented within 300 feet of the nest. Work within nest buffers may not resume until the young fledge and disperse, or the nest has been determined to fail by the Biologist. In the event that the buffer criteria cannot be achieved, SDG&E would develop alternative measures approved by USFWS. Specific buffer requirements may be reduced with approval by USFWS on a project-by-project basis as appropriate.
- When an active nest is present, a Biologist shall be onsite during Covered Activities as needed to avoid and minimize the potential for impacts to individuals.
- Direct take of individuals and destruction of active nests are not allowed.

91. Coastal California Gnatcatcher (*Polioptila californica californica*)

- Whenever practicable, minimize impacts through timing of work in coastal California gnatcatcher habitat (CAGN-Habitat) to avoid the nesting season and conduct CAGN-Habitat removal prior to the initiation of the breeding season (February 15 through August 15).
- If work is scheduled during the coastal California gnatcatcher breeding season, and within suitable CAGN-Habitat, a Biologist shall conduct a preconstruction nesting survey to ensure that no active coastal California gnatcatcher nests are present within 300 feet of the Covered Activities.
- If an active coastal California gnatcatcher nest is observed, no Covered Activities shall be implemented within 300 feet of the nest. Work within nest buffers may not resume until the young fledge and disperse, or the nest has been determined to fail by the Biologist. In the event that the buffer criteria cannot be achieved, SDG&E would develop alternative measures approved by USFWS. Specific buffer requirements may be reduced with approval by USFWS on a project-by-project basis as appropriate.

- When an active nest is present, a Biologist shall be onsite during Covered Activities as needed to avoid and minimize the potential for impacts to individuals.
- Direct take of individuals and destruction of active nests are not allowed.

92. Light-footed Ridgway's Rail (*Rallus obsoletus levipes*)

- Impacts from Covered Activities where there is a potential for the light-footed Ridgway's rail to occur (LFRR-Habitat) shall be avoided through project design considerations, to the extent feasible.
- If impacts to LFRR-Habitat cannot be avoided, a Biologist shall survey LFRR-Habitat that has the potential to be impacted by Covered Activities using appropriate survey techniques to determine species presence. If project timing does not allow for surveys, it shall be assumed that all LFRR-Habitat to be impacted is occupied.
- If surveys determine that LFRR-Habitat is occupied (or assumed occupied due to lack of survey), permanent impacts that cannot be avoided shall be mitigated in kind per the mitigation ratios in Table 5.4, or through other alternatives in Section 5.5 agreed to by USFWS. This mitigation would need to be approved prior to Covered Activities occurring within LFRR-Habitat.
- If surveys determine LFRR-Habitat is not occupied, Covered Activities and impacts shall be allowed. Impacts to unoccupied LFRR-Habitat shall be mitigated per Section 5.5, Table 5.3b.
- Whenever practicable, minimize impacts through timing of work in LFRR-Habitat to avoid the nesting season for riparian avian species and conduct LFRR-Habitat removal prior to the initiation of the light-footed Ridgway's rail breeding season (March 1 through August 31).
- If work is scheduled during the light-footed Ridgway's rail breeding season and within LFRR-Habitat, a Biologist shall conduct preconstruction nesting surveys to attempt to identify any active light-footed Ridgway's rail nests within 500 feet of the proposed Covered Activities.
- If nesting surveys indicate an active nest is likely or if an active nest is observed, no Covered Activities shall be conducted within 500 feet of the nest. Work within nest buffers may not resume until the young fledge and disperse, or the nest has been determined to fail by the Biologist. In the event that the buffer criteria cannot be achieved, SDG&E would develop alternative measures approved

by USFWS. Specific buffer requirements may be reduced with approval by USFWS on a project-by-project basis as appropriate.

- If light-footed Ridgway's rail individuals are present within the impact footprint at the time of construction, SDG&E shall halt work until the individuals have left the work area. The Biologist shall direct construction personnel to begin work in portions of the impact footprint farthest away from the light-footed Ridgway's rails. A Biologist shall be onsite during Covered Activities as needed to avoid impacts to individuals.
- When an active nest is present, a Biologist shall be onsite during Covered Activities as needed to avoid and minimize the potential for impacts to individuals.
- Direct take of individuals and destruction of active nests are not allowed.
- For new projects, impacts to LFRR-habitat would only be covered through the Minor Amendment process as discussed in Section 6.5.1.2, including acquiring Mitigation Credits as discussed in Section 5.5.

93. California Least Tern (*Sternula antillarum browni*)

- Permanent impacts from Covered Activities to California least tern nesting sites shall be avoided.
- Temporary impacts from Covered Activities to California least tern nesting sites shall be avoided through project design considerations, to the extent feasible.
- Work within 800 feet of California least tern nesting sites shall be scheduled during the non-breeding season (i.e., September 15 through March 31) to the maximum extent possible. If work is scheduled to occur during the breeding season, no Covered Activities shall be implemented within 800 feet of the nesting site. Work within nest buffers may not resume until the young fledge and disperse, or the nest has been determined to fail by a California least tern Biologist. In the event that the buffer criteria cannot be achieved, SDG&E would develop alternative measures and/or biological monitoring approved by USFWS. Specific buffer requirements may be reduced with approval by USFWS on a project-by-project basis as appropriate.
- To the extent feasible, new linear Facilities within 800 feet of California least tern nesting sites shall be placed underground. If overhead structures (poles) are necessary, SDG&E shall explore engineering designs, including perch deterrents or other equipment

that shall reduce the available perch location for potential avian predators.

- For existing linear Facilities within 800 feet of California least tern nesting sites (power poles and lines immediately west of San Elijo Lagoon nest site) or other known predator perches (power pole north and east of Batiquitos Lagoon nest sites W-2 and W-1, power poles and lines along the Silver Strand between Coronado and Imperial Beach), SDG&E shall explore perch deterrents or other equipment that shall reduce the available perch locations for potential avian predators. SDG&E may also contribute to a predator management fund, or directly support predator management at individual California least tern nesting sites, in coordination with USFWS. Nothing herein shall preclude SDG&E from undergrounding Facilities as it determines appropriate.
- To control the spread of weeds that may degrade California least tern nesting sites, all earth-moving construction equipment shall be thoroughly power-washed before working within 200 feet of California least tern nesting sites.
- Any stockpiled soils within 200 feet of California least tern nesting sites shall be covered with plastic or other material and the edges shall be held in place by sandbags at the end of each workday.
- Temporary impact areas within California least tern nesting sites shall be re-contoured to mimic the natural landscape.
- Direct take of nesting individuals and destruction of active nests are not allowed.

94. Least Bell's Vireo (*Vireo bellii pusillus*)

- Impacts from Covered Activities where there is a potential for least Bell's vireo to occur, or in designated critical habitat with PBFs (LBVI-Habitat), shall be avoided through project design considerations, to the extent feasible.
- Whenever practicable, minimize impacts through timing of work in riparian areas where there is a potential for the least Bell's vireo to occur (LBVI-Habitat) to avoid the nesting season for riparian avian species and conduct LBVI-Habitat removal prior to the initiation of the riparian avian breeding season (March 15 through September 15).
- If work is scheduled during the riparian avian breeding season, and within suitable LBVI-Habitat, a Biologist shall conduct a preconstruction nesting survey to ensure that no active least Bell's vireo nests are present within 300 feet of the Covered Activities.

- If an active least Bell's vireo nest is observed, no Covered Activities shall be implemented within 300 feet of the nest. Work within nest buffers may not resume until the young fledge and disperse, or the nest has been determined to fail by the Biologist. In the event that the buffer criteria cannot be achieved, SDG&E would develop alternative measures approved by USFWS. Specific buffer requirements may be reduced with approval of USFWS on a project-by-project basis as appropriate.
- When an active nest is present, a Biologist shall be onsite during Covered Activities as needed to avoid and minimize the potential for impacts to individuals.
- Direct take of nesting individuals and destruction of active nests are not allowed.

95. Stephens' Kangaroo Rat (*Dipodomys stephensi*)

- Ground-disturbing impacts where there is a potential for Stephens' kangaroo rat to occur (SKR-Habitat) shall be avoided the maximum extent possible. Laydown/staging areas shall not be sited in suitable SKR-Habitat.
- SDG&E vehicles shall remain on existing access roads in SKR-Habitat to the maximum extent practicable. See also OP 2 (speed limits).
- Access route(s) shall be clearly marked with pin flags or similar flagging, which shall be followed by the vehicle driver. Vehicles shall proceed into the work site along the designated overland travel route and back out along the same route.
- In locations where overland travel is necessary for pole replacement, the pole replacements in SKR-Habitat shall be conducted with the use of a helicopter, if possible. A helicopter shall be used to set the new pole in the pole hole as well as to string in the new conductor.
- To distribute vehicle weight, plywood boards or alternate material as approved by the Biologist may be used to cover burrows within overland travel routes and work areas through SKR-Habitat.
- All work within SKR-Habitat shall occur during dry conditions when soil is not wet from a significant rainfall event.
- Except in emergencies, Covered Activities shall not occur off existing access roads after significant rainfall events when the soil is saturated, as Stephens' kangaroo rat burrows may be more susceptible to collapse and impacts from vehicular traffic.

- Berms shall not be impacted within SKR-Habitat.
- SDG&E shall retain a Stephens' kangaroo rat Biologist¹⁶ approved by USFWS to review and monitor Covered Activities that result in ground disturbance or vegetation clearing within SKR-Habitat. SDG&E shall submit the proposed Stephens' kangaroo rat Biologist's resume to USFWS for approval at least 30 days prior to initiation of Covered Activities within SKR-Habitat. The approved Stephens' kangaroo rat Biologist shall conduct the following activities:
 - a. At least 10 days prior to initiating maintenance work within SKR-Habitat, coordinate with USFWS on the implementation of the measures to minimize impacts to Stephens' kangaroo rat.
 - b. Shall provide a tailgate briefing of the specific biological constraints required during Covered Activities to avoid and minimize impacts to Stephens' kangaroo rat.
 - c. Prior to ground disturbance or vegetation clearing within SKR-Habitat, conduct a survey to identify all potential Stephens' kangaroo rat burrows within and surrounding the project footprint and mark each one with a pin flag for avoidance.
 - d. Prior to ground disturbance or vegetation clearing within SKR-Habitat, evaluate all project areas in SKR-Habitat to determine the best available access routes, which shall avoid or minimize disturbance to occupied SKR-Habitat and lead from the nearest dirt access road or route into the pole.
 - e. Based on the survey findings, the Stephens' kangaroo rat Biologist may recommend the erection of exclusion fencing and salvage trapping for Stephens' kangaroo rat within discrete work areas (e.g., at drainage improvement work areas and where vegetation will be uprooted) where significant soil disturbance is proposed. Otherwise, the Stephens' kangaroo rat Biologist shall walk a safe distance in front of vegetation trimming personnel, equipment, and any other grading implements or project-related Covered Activities to assist crews in avoiding impacts to burrows potentially occupied by Stephens' kangaroo rat. The

¹⁶ The Stephens' kangaroo rat Biologist will have completed at least 40 calendar nights performing small mammal live-trapping surveys, and will have handled at least 40 individual Stephens' kangaroo rat. The Stephens' kangaroo rat Biologist must also have experience using exclusion fencing to salvage and exclude small mammals from construction work areas, and/or experience performing small mammal translocations in the wild. If work is occurring on MCBCP, then the Biologist must also be approved by MCBCP.

Stephens' kangaroo rat Biologist shall have stop-work authority to avoid unauthorized impacts to suitable SKR-Habitat.

- f. When there is potential for direct impacts to Stephens' kangaroo rat from soil disturbance and the Stephens' kangaroo rat Biologist determines that exclusion fencing is warranted, the fencing design and location shall be reviewed and approved by USFWS to ensure that the fencing is of an appropriate height and is appropriately placed; the bottom of the fence is buried at least 12 inches below ground; and it is constructed in a manner that prevents Stephens' kangaroo rat from digging, crawling, or hopping under or over the fence. All fencing shall remain in place during soil-disturbing Covered Activities and it shall be removed under the direction of the Stephens' kangaroo rat Biologist.
- g. For applicable work areas where the erection of exclusion fencing is warranted, the Stephens' kangaroo rat Biologist shall also determine the need to conduct salvage trapping to remove Stephens' kangaroo rat from work areas. A final determination regarding the locations and plans for exclusion trapping shall be made by the Stephens' kangaroo rat Biologist in consultation with USFWS, and the Stephens' kangaroo rat Biologist shall submit to USFWS for review and approval, a detailed Stephens' kangaroo rat trap and release plan prior to any impacts to SKR-Habitat. Trapping of Stephens' kangaroo rat shall be conducted immediately preceding construction so as to minimize the likelihood that Stephens' kangaroo rats have an opportunity to re-inhabit the disturbance footprint. Trapping shall be conducted for at least 5 nights, with at least 2 consecutive nights of negative results at the end of the trapping session before construction begins. Should exclusion fencing be compromised in such a way that Stephens' kangaroo rat could enter the site during construction, repeat trapping may be conducted at the discretion of the Stephens' kangaroo rat Biologist.
- h. All Stephens' kangaroo rat captured for removal from work areas shall be released into adjacent habitat.
- i. Biological monitoring reports shall be provided to USFWS reporting the results of any Stephens' kangaroo rat trapping and salvage efforts. Reports shall be provided upon initiation of efforts, when there is a change in circumstance that affects Stephen's kangaroo rat, and at completion of construction.

- j. Check the integrity of all excavation unit covers, soil stockpile tarps, exclusion fencing, and any additional measures meant to exclude the Stephens' kangaroo rat each morning before the start of work and each evening at the culmination of each workday in suitable SKR-Habitat.
 - k. Each morning prior to commencement of work, check all equipment in suitable SKR-Habitat underneath and inside wheel wells for wildlife. Any Stephens' kangaroo rat or other animals encountered shall be removed and released in adjacent open habitat away from construction zones.
- For pole replacement work in SKR-Habitat, the first 12 inches of the pole hole shall be dug by hand, when practicable.
 - Any excavation (i.e., pole holes, trenches, fence posts) in SKR-Habitat shall implement the following measures:
 - Excavations shall be backfilled with the native soil or covered each day at the completion of work. Excavations shall be covered using rigid boards or plates, which shall then be covered by a sheet of thick plastic sheeting, the edge of which shall be buried by dirt from the excavation or by gravel/sand bags to prevent or minimize intrusion by rodents or ground-dwelling animals.
 - Excavations shall be checked twice daily (morning and afternoon) to verify no Stephens' kangaroo rat individuals are in the hole or on the net. The number of daily checks may be reduced with approval by USFWS. Any Stephens' kangaroo rat present on the net shall be removed and released into surface burrows in the immediate vicinity of the excavation.
 - Open holes shall be fitted with a ¼-inch hardware cloth "net" located approximately 24 inches below the top of the hole to capture Stephens' kangaroo rat. Development and utilization of alternate techniques are acceptable with review and approval by USFWS.
 - Any potential kangaroo rat burrows (note: gopher burrows are very similar in size to Stephens' kangaroo rat burrows) intersected by the dug holes shall be plugged to prevent or discourage access to the inner edge of the pole hole by rodents. Burrows shall be plugged with a circular cut piece of 2-by-4 slightly larger than the diameter of the burrow and secured in place with a rubber mallet.
 - To reduce the potential for direct impacts to Stephens' kangaroo rat, SDG&E access roads within SKR-Habitat shall be maintained

by mowing or weed whacking with hand tools where this maintenance method is practicable and successful in maintaining reliable SDG&E vehicle and equipment access to SDG&E Facilities at all times.

- For new projects, impacts to Stephens' kangaroo rat and SKR-Habitat would only be covered through the Minor Amendment process as discussed in Section 6.5.1.2, including acquiring Mitigation Credits as discussed in Section 5.5.
- Permanent impacts to SKR-Habitat within the current distribution of the species that cannot be avoided shall be mitigated in kind per the mitigation ratios in Table 5.4, or through other alternatives in Section 5.5 agreed to by USFWS. This mitigation would need to be approved prior to Covered Activities occurring within suitable SKR-Habitat.

96. Peninsular Bighorn Sheep (*Ovis canadensis nelsoni*)

- Species-Specific Protocols for Peninsular Bighorn Sheep are provided in Appendix C.

97. Pacific Pocket Mouse (*Perognathus longimembris pacificus*)

Impacts from Covered Activities to Pacific pocket mouse habitat (PPM-Habitat) shall be avoided through project design considerations, to the maximum extent practicable. PPM-Habitat is defined as Mapped Areas by the MCBCP in coordination with USFWS, and any other occupied areas found outside of MCBCP in the future. Mapped Areas of suitable habitat that comprise PPM-Habitat do not include areas of hardscape (i.e., concrete pads, paved roads, Facilities), existing and maintained access roads, and established work areas associated with SDG&E Facilities. If MCBCP or USFWS provides SDG&E with updated information on Pacific pocket mouse populations, SDG&E shall coordinate, as needed, with MCBCP and USFWS to incorporate the updated information on Pacific pocket mouse populations into PPM-Habitat, including potential expansion or contractions of the PPM-Habitat.

- Permanent impacts to PPM-Habitat that cannot be avoided shall be mitigated by a one-time in-lieu-fee payment approved by the USFWS as shown in Table 5.4. This in-lieu-fee payment must occur prior to Covered Activities within PPM Habitat and will be used to fund actions approved by the USFWS to mitigate unavoidable permanent impacts to PPM-Habitat.
- Temporary impact areas within PPM-Habitat shall be re-contoured to mimic the natural landscape when feasible. SDG&E shall

determine approach to re-contouring in consultation with the Pacific pocket mouse Biologist and the approach shall be described in the PSR.

- Ground disturbance or vegetation clearing Covered Activities in PPM-Habitat shall be avoided to the maximum extent possible. Laydown/staging areas shall not be sited in PPM-Habitat.
- Ground disturbance or vegetation clearing Covered Activities in PPM-Habitat shall be initiated when Pacific pocket mouse are active (April 15 through September 15). If ground disturbance or vegetation clearing Covered Activities cannot be initiated within this period, SDG&E shall coordinate with MCBCP Environmental Security and USFWS to determine if additional conservation measures are necessary.¹⁷ Work during this period shall not be initiated until approved by MCBCP and USFWS.
- Berms along the sides of access roads shall not be impacted within PPM-Habitat. All vehicles shall remain within the road prism during vegetation clearing and routine road maintenance. Overhanging vegetation on the berms shall be trimmed using hand tools and Pacific pocket mouse burrows shall be avoided.
- SDG&E vehicles shall remain on existing access roads in PPM-Habitat to the maximum extent practicable. See *also* OP 2 (speed limits).
- Access route(s), including footpaths, shall be clearly marked with pin flags or similar flagging, which shall be followed by the vehicle driver. Vehicles shall proceed into the work site along the designated overland travel route and back out along the same route.
- To distribute vehicle weight, plywood boards or alternate material as approved by the Biologist may be used to cover burrows within overland travel routes and work areas through PPM-Habitat.
- For pole replacement work in PPM-Habitat, the first 12 inches of the pole hole shall be dug by hand, when practicable.
- For ground disturbance or vegetation clearing occurring within PPM-Habitat, spoil piles left overnight shall be covered with tarps or plastic with the edges sealed with sandbags, bricks, or 2-by-4s to prevent Pacific pocket mouse from burrowing. Excavations shall be backfilled with the native soil or covered each day with material (e.g., plywood or solid metal grates with the edges sealed with

¹⁷ Should Pacific pocket mouse occur outside of MCBCP in the future, then SDG&E will coordinate directly with USFWS.

sandbags, bricks, or 2-by-4s) that is sufficient to prevent Pacific pocket mouse from falling into excavations.

- Any potential Pacific pocket mouse burrows intersected by the dug holes shall be plugged with a circular cut piece of 2-by-4 slightly larger than the diameter of the burrow and secured in place with a rubber mallet, to prevent or discourage access to the inner edge of the pole hole.
- To reduce the potential for direct impacts to Pacific pocket mouse, SDG&E access roads within PPM-Habitat shall be maintained by mowing or weed whacking with hand tools where this maintenance method is practicable and successful in maintaining reliable SDG&E vehicle and equipment access to SDG&E Facilities at all times.
- All work within PPM-Habitat shall occur during dry conditions when soil is not wet and susceptible to compaction from high moisture content. Because soil compaction potential is greatest when soil moisture is at or exceeds field capacity, as a general rule of thumb, work shall be avoided in wet soil conditions and within 72 hours of 0.5 inch of rainfall, unless someone familiar with soil texture analysis has probed the soil in the work areas and determined it to be sufficiently dry to support Covered Activities without an increased risk of soil compaction.
- SDG&E shall retain a Pacific pocket mouse Biologist¹⁸ approved by USFWS to review and monitor ground disturbance or vegetation clearing within PPM-Habitat. SDG&E shall submit a list of qualified Pacific pocket mouse Biologists' resumes annually to USFWS, for approval prior to initiation of ground disturbance or vegetation clearing within PPM-Habitat. USFWS-approved Pacific pocket mouse Biologist shall be approved by MCBCP Environmental Security at least 15 days prior to the initiation of ground disturbance or vegetation clearing within PPM-Habitat. The Pacific pocket mouse Biologist shall be provided with a copy of this consultation. The Pacific pocket mouse Biologist shall be available during preconstruction and construction phases to address protection of sensitive biological resources, monitor ongoing work, and maintain communications with construction personnel to facilitate the appropriate and lawful management of issues relating to biological resources. The Pacific pocket mouse Biologist shall report any non-compliance issues to the SDG&E or contractor crew

¹⁸ The Pacific pocket mouse Biologist will have completed at least 40 calendar nights performing small mammal live-trapping surveys, and will have handled at least 40 individual Pacific pocket mouse or individuals from another subspecies of *Perognathus longimembris*. The Pacific pocket mouse Biologist must also have experience using exclusion fencing to salvage and exclude small mammals from construction work areas, and/or experience performing small mammal translocations in the wild.

foreman/supervisor such that work can be halted if necessary and discussed with USFWS to ensure the proper implementation of species and habitat protection measures. SDG&E shall report all non-compliance issues to USFWS within 1 business day of being informed of the incident. The Pacific pocket mouse Biologist shall conduct the following activities that shall be addressed ahead of time in the PSR and approved by SDG&E:

- At least 10 days prior to initiating ground disturbance or vegetation clearing within PPM-Habitat, the Pacific pocket mouse Biologist shall coordinate with MCBCP Environmental Security and USFWS on the implementation of the measures to minimize impacts to Pacific pocket mouse.
- Provide a tailgate briefing of the specific biological constraints required during Covered Activities to avoid and minimize impacts to Pacific pocket mouse.
- Prior to ground disturbance or vegetation clearing within PPM-Habitat, the approved Pacific pocket mouse Biologist shall conduct a survey to identify all potential Pacific pocket mouse burrows within and surrounding the project footprint and mark each one with a pin flag for avoidance.
- Prior to ground disturbance or vegetation clearing within PPM-Habitat, evaluate all project areas in habitat to determine the best available access routes that shall avoid or minimize disturbance to PPM-Habitat. Based on the survey findings, the Pacific pocket mouse Biologist may recommend the erection of exclusion fencing and salvage trapping for Pacific pocket mouse within discrete work areas where significant soil disturbance is proposed. Otherwise, the Pacific pocket mouse Biologist shall walk a safe distance in front of vegetation trimming personnel, equipment, and any other grading implements or project-related Covered Activities to assist crews in avoiding impacts to burrows potentially occupied by Pacific pocket mouse. The Pacific pocket mouse Biologist shall have stop-work authority to avoid unauthorized impacts to PPM-Habitat.
- When there is potential for direct impacts to Pacific pocket mouse from ground disturbance or vegetation clearing and the Pacific pocket mouse Biologist determines that exclusion fencing is warranted, the fencing design and location shall be reviewed and approved by USFWS to ensure that the fencing is of an appropriate height and is appropriately placed; the bottom of the fence is buried 6–12 inches below ground; and it is constructed in a manner that prevents Pacific pocket mouse from digging, crawling, or hopping

under or over the fence. All fencing shall remain in place during ground disturbance or vegetation clearing Covered Activities and it shall be removed under the direction of the Pacific pocket mouse Biologist.

- For applicable work areas where the Pacific pocket mouse Biologist determines that the erection of exclusion fencing is warranted, the Pacific pocket mouse Biologist shall also determine the need to conduct salvage trapping to remove Pacific pocket mouse from work areas where there is a potential for direct impacts to Pacific pocket mouse. A final determination regarding the locations and plans for exclusion trapping shall be made by SDG&E and the Pacific pocket mouse Biologist in consultation with USFWS. SDG&E shall submit these plans in the PSR submittal to USFWS for review and approval including, if applicable, a detailed Pacific pocket mouse trap and release plan prior to any impacts to occupied PPM-Habitat. Trapping of Pacific pocket mouse shall be conducted immediately preceding construction so as to minimize the likelihood that Pacific pocket mice have an opportunity to re-inhabit the disturbance footprint. Trapping shall be conducted for at least 5 nights, with at least 2 consecutive nights of negative results at the end of the trapping session before construction begins.
- Each morning prior to commencement of work, check underneath all equipment and released in adjacent open habitat away from construction.
- Check the integrity of all excavation unit covers, soil stockpile tarps, and any additional measures meant to exclude the Pacific pocket mouse each morning before the start of work and each evening at the culmination of each workday in PPM-Habitat.
- Pacific pocket mouse that are captured from work areas shall either be donated to a pocket mouse captive breeding program, if one is in place, or released by the Pacific pocket mouse Biologist in consultation with USFWS.
- Biological monitoring reports shall be provided to USFWS reporting the results of any Pacific pocket mouse trapping and salvage efforts. Reports shall be provided upon initiation of efforts, when there is a change in circumstance that affects Pacific pocket mouse, and at completion of construction.

- For new projects, impacts to Pacific pocket mouse and PPM-Habitat would only be covered through the Minor Amendment process as discussed in Section 6.5.1.2, including acquiring Mitigation Credits as discussed in Section 5.5.

5.2 Habitat Restoration and Enhancement Measures

During the remaining term of this permit, Covered Activities may cause temporary impacts to habitat in the Plan Area that can be restored to their pre-activity condition. To mitigate these impacts, SDG&E will either withdraw Mitigation Credits or use the R/E Program detailed below. Withdrawing Mitigation Credits is an approach that may be used when impacts are not restored, which would include impacts that do not become part of the R/E Program or do not meet success standards and are removed from the R/E Program. These impacts will also be deducted from the HCP Amendment's 400 acres of authorized permanent impacts.

SDG&E may instead choose to use the R/E Program when onsite mitigation, or offsite mitigation at a location agreed to by USFWS, is anticipated to be more beneficial than withdrawing Mitigation Credits. In that case, acreages for impacts being mitigated through the R/E Program will be deducted from the 210 acres of authorized temporary impacts. Impacts successfully restored pursuant to the success standards detailed below will remain debited from the authorized temporary impacts but will not be deducted from the 400 acres of authorized permanent impacts or require any further mitigation. On the other hand, for impacts not restored according to the success standards detailed below, SDG&E will debit the acreage from the 400 acres of authorized permanent impacts and from SDG&E's mitigation accounts. In addition, SDG&E will credit back the acreage debited from the temporary impact cap. To illustrate this process, please see the mitigation flow diagram in Figure 8.

The remainder of this section details SDG&E's R/E Program for mitigating impacts to habitat.

5.2.1 Purpose

Habitat restoration and enhancement can increase the value of biological resources in an impact area and can also reduce habitat fragmentation for Covered Species and other species that may benefit from habitat connectivity. The goal of the R/E Program is to sustain and, where possible, increase the habitat value of sensitive vegetation communities throughout SDG&E's Plan Area. To accomplish this goal, the R/E Program seeks to establish native vegetation that will continue to propagate, mature, and expand after maintenance and monitoring are complete.

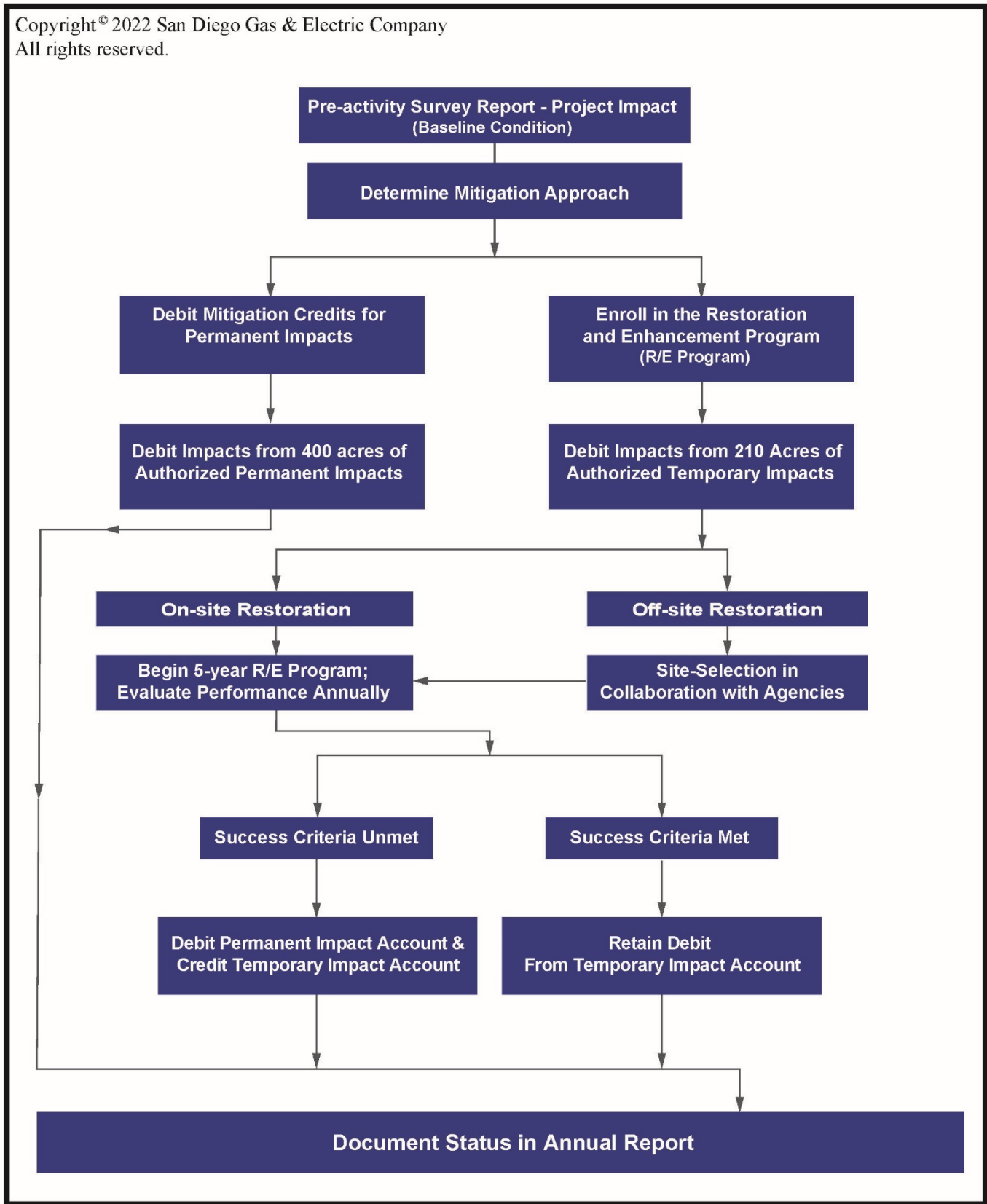


Figure 8. Mitigation Flow Chart



5.2.2 R/E Program Approach

Summary

The R/E Program is proposed primarily for mitigating temporary impacts but may also be used for mitigating permanent impacts in accordance with Section 5.5.3. It will be conducted under the direction of a habitat restoration specialist, as determined by SDG&E, employ one of three mitigation approaches described below, and last from 1 to 5 years for each site included for mitigation in the R/E Program.

Within the R/E Program, SDG&E will determine the appropriate mitigation approach for all impact areas, including which sites are placed into the R/E Program, which sites are removed from the R/E Program, and which restoration and enhancement methods are applied at each site. Sites selected for the offsite restoration will be decided in cooperation with, and with approval from, USFWS. SDG&E will provide R/E Program updates to agencies in the Annual Report.

Sites that meet the success standards will be documented in the Annual Report. Sites that do not (or are not expected to) meet final success standards within 5 years will be removed from the R/E Program. Sites removed from the R/E Program (or that do not become part of the R/E Program) will be stabilized according to the Operational Protocols described in Section 5.1 and will require Mitigation Credit withdrawal in accordance with Section 5.2.2.9 and at the ratios contained in Section 5.5. To illustrate this process, please see the mitigation flow diagram in Figure 8.

5.2.2.1 R/E Program Timeline

The R/E Program will last from 1 to 5 years; however, SDG&E may choose to continue to undertake R/E Covered Activities beyond that period. Likewise, SDG&E may demonstrate to USFWS that a selected site has achieved the R/E Program's success standards at R/E Program sites at any time during or after the R/E Program ends, with credits and debits from the permanent impact cap, Mitigation Credits, and/or temporary impact cap provided at a rate commensurate with the percent of Target Condition that has been achieved.

The R/E Program years will follow calendar years unless otherwise stated, with Year 1 being the first year of activity within the R/E Program. While dates of construction (i.e., the amount of time that has passed since the close of construction) will directly affect the condition of the site when it enters the R/E Program, these variations will not be included in the R/E Program timeline. Sites will be tracked only by the year of inclusion into the R/E Program. Maintenance, monitoring, and reporting, as described in the following sections, will occur annually for sites within the R/E Program.

5.2.2.2 Selecting a Site-Specific Approach

The R/E Program will mitigate impacts using one of three approaches: (1) restoration; (2) enhancement; or (3) offsite restoration. SDG&E will select the appropriate approaches for each site based on the specific needs of the site.

- **Restoration** includes planting, maintenance, and monitoring Covered Activities. Specifically, restoration of sites will include (i) adding native plant material through methods such as seed application or installation of plants salvaged from the impact area; (ii) undertaking R/E Program maintenance, such as weed control, decompaction, erosion control, and access control, to support site success; and (iii) conducting routine monitoring by a habitat restoration specialist at least annually. Restoration will typically be conducted on sites where native vegetation will not recover on its own within the 5-year R/E Program.
- **Enhancement** includes the same R/E Program maintenance and/or monitoring Covered Activities conducted on restoration sites but without the addition of native plant material. Maintenance will be conducted to support recovery of native vegetation that is anticipated to recover on its own within the 5-year R/E Program.
- **Offsite restoration** includes the above habitat restoration methods at one or more offsite locations where goals of the R/E Program can be better served than by either implementing onsite restoration/enhancement or Mitigation Credit withdrawal. For example, SDG&E's standard O&M typically result in small temporary impacts. SDG&E will track temporary impact acreages by project but, rather than mitigate for each temporary impact individually, SDG&E in coordination with USFWS may instead choose to combine temporary impact acreages from multiple projects together and propose to mitigate those impacts on an annual basis through a single larger site. This provides SDG&E and USFWS the flexibility to choose locations where the offsite restoration/enhancement strategy can be applied in a more ecologically appropriate setting. Offsite restoration/enhancement locations will be selected on a case-by-case basis; budget will be determined by SDG&E and site selection will be established cooperatively between SDG&E and USFWS. Specific restoration methods and success standards will be consistent with the R/E Program approach described in this section.

The specific implementation, maintenance, and monitoring approach provided in subsequent sections applies primarily to restoration and enhancement sites being mitigated onsite as part of the standard R/E Program. How these practices are applied to any offsite restoration/enhancement sites will be decided on a case-by-case basis by SDG&E in coordination with USFWS.

5.2.2.3 Site Selection

For purposes of the R/E Program, a site is defined as an area of contiguous temporary impact and a project may have multiple sites. SDG&E will select temporarily impacted areas for inclusion in the R/E Program on a case-by-case basis. In general, the minimum criteria for selection are sites within habitat where restoration and enhancement would be beneficial for increasing value of biological resources and providing habitat connectivity.

Small Sites (fewer than 1,000 square feet of contiguous temporary impacts)

The size of impacted sites is important because the ecological value of restoring and enhancing temporary impacts onsite increases as the size of the impact area increases. For sites less than 1,000 square feet, many relevant factors are assessed to determine whether to include the site in the R/E Program. These factors include, but are not limited to, quality of adjacent habitat, presence of nonnative species of concern in the service area, proximity to road edges, and individual landowner permissions.

Impacted sites less than 1,000 square feet may not be considered for the R/E Program if restoration and enhancement do not seem feasible or ecologically beneficial. Conversely, sites less than 1,000 square feet with high-quality habitat or sensitive species would likely be entered into the R/E Program. When not included in the R/E Program, sites will be stabilized and may be reseeded according to the Operational Protocols described in Section 5.1.

Sites Subject to Ongoing Periodic Disturbance

There is the potential that some sites within the Plan Area may be subject to ongoing periodic disturbance by Covered Activities, including areas around electric transmission and distribution overhead Facilities, underground vaults, or gas Facilities.

Rather than include these sites in the R/E Program, SDG&E may choose to treat the site as a permanent impact. In that case, SDG&E will draw down Mitigation Credits and maintain the site for future use. Once the site has been categorized as a permanent impact, no further drawdown of Mitigation Credits, restoration, or enhancement shall be required if the same impact footprint is later impacted by a future Covered Activity.

Other Relevant Factors for Site Selection

Other factors that will be evaluated when selecting sites include the following:

- **Ecological Value:** Sites will be prioritized for inclusion when the value of restoring impacted areas is greatest and the overall goals of the R/E Program are best achieved. Examples of preferred sites include those adjacent to habitat for Covered Species, those adjacent or connected to riparian areas, and those that occur within developed areas with degraded sensitive habitat where enhancement and restoration have greatest opportunity to improve habitat value for Covered Species.
- **Land Ownership:** The type of ownership will be considered for each site that meets the criteria for inclusion in the R/E Program. For example, some private landowners might prefer not to have the R/E Program on their land, whereas public landowners may welcome these Covered Activities. SDG&E will select sites for the R/E Program where landowners are in support of these Covered Activities and will support long-term management to maintain the increased biological values obtained through SDG&E's efforts.

- **Types of Impact:** Types of impacts vary depending on the Covered Activity conducted at the site. Low impact Covered Activities include crushing and minor trimming of vegetation. Moderate impacts include grubbing and mowing of vegetation. High impact Covered Activities include grading (such as for road access) and cut/fill slopes. Preference for the R/E Program will be sites with low to moderate impacts where restoration success standards can be achieved within the timeline of the R/E Program.
- **Vegetation Communities:** Other factors that will be considered include site-specific conditions at each site, such as the specific effect on the vegetation community that was impacted. Some types of impacts do not decrease habitat quality or may increase function for certain species. In many cases, the shift (possible increase or decrease) in functionality is temporary and will recover without action taken. Further, vegetation communities recover at very different rates. For example, a nonnative grassland dominated by annual species will recover within one to two growing seasons, while a mature chaparral community may require 5 years (or more).

Sites where recovery can be achieved within the timeline of the R/E Program will be prioritized for the R/E Program. Nonetheless, SDG&E in coordination with USFWS may also lengthen the duration of the R/E Program or modify success standards for select R/E Projects where a particular vegetation community would not meet success during the standard 5-year timeframe. For example, SDG&E and USFWS may determine that eradicating a particular invasive weed species population in a particular location is more important than restoring a native vegetation community. In this case, the total area that the invasive weed occupies would likely exceed the total restoration area requirement. A tailored solution for weed eradication may be appropriate for a modified success criterion; this approach would likely be financially feasible as well, because the R/E Program budget is based on the estimated cost for restoring the original impact area and conducting weed control Covered Activities costs less than conducting weed control and habitat restoration Covered Activities.

5.2.2.4 Establishing Target Condition and Success Standards for Sites

Target Condition

Once a site has been included in the R/E Program, a Target Condition will be determined for that site. The site's Target Condition is that which provides habitat value equivalent to that which was impacted, as defined by final success standards for a site. The Target Condition for each site will be based on (1) baseline condition as documented in the Pre-activity Survey or (2) an appropriate reference site if baseline conditions were not able to be documented before a site is impacted.

The Target Condition includes the preconstruction species composition and the percentage of native and nonnative cover at the site. When the Target Condition has been reached for a site, the amount of native species and cover is greater than or equal to the Target Condition and the amount of nonnative species and cover is less than or equal to the Target Condition. When SDG&E determines that the site has met the

success standards articulated below, SDG&E may request USFWS review and approval. SDG&E will include the site in a list of sites meeting final success standards in the Annual Report for the Wildlife Agencies review and approval. See Section 5.2.3. Upon USFWS review and concurrence with SDG&E's determination as provided on the Annual Report, monitoring, restoration, or enhancement Covered Activities may be discontinued. At that time, the habitat management responsibilities would likely be assumed by the underlying owner or land manager.

Use of Baseline Condition

Using the site's baseline (pre-activity) condition as documented in the PSR is the preferred method of establishing a site's Target Condition. Where possible, the PSR should include vegetation species and cover data that can be used to establish success standards. Post project monitoring, if determined necessary by SDG&E, should be conducted immediately after construction impacts have occurred to ensure the limits of impacts can clearly be identified.

Use of Reference Site

Reference sites will only be used if SDG&E is unable to collect pre-activity baseline condition data (e.g., emergency projects) or when rare plant population trends need to be monitored between more than one site. Reference sites will be of similar size to the impacted area and represent pre-activity conditions to the best extent possible (e.g., similar native and nonnative cover classes). One reference site can be used for multiple R/E Program sites if appropriate. See Section 5.2.2.7 for additional details on monitoring methods.

Target Conditions will demonstrate native species composition and cover appropriate for the successional stage of the vegetation community being restored and nonnative species cover equal to or less than the baseline condition. This will be documented in the PSR, at an appropriate adjacent reference site if applicable, or as otherwise agreed to in advance by USFWS.

Success Standards

Established success standards provide a reliable metric for confirming that the site (1) has fully established an early successional stage suitable for that site, and (2) is on a trajectory to continue developing into a native climax community. Here, because the successional process may take 15 years or more to achieve, reaching the climax community is often outside the scope and timeline of the R/E Program. Accordingly, the R/E Program focuses on the first 3 to 5 years of establishment to provide a foundation for ecological succession to continue. This is consistent with the R/E Program's goal of establishing native vegetation that will continue to propagate, mature, and expand after maintenance and monitoring are complete.

Success standards for the site's physical condition and percent of Target Condition are provided in Table 5.1. These standards support the goal of the R/E Program, which is to reestablish a functioning native vegetation community that is self-sustaining in

perpetuity. The final, 100% success standards can be achieved at any time within the 5-year R/E Program (e.g., if final success standards are met in Year 2, then the Target Condition has been achieved and no further Covered Activities may be required). If SDG&E demonstrates that the final success standards have been achieved beyond that 5-year window, it will receive appropriate credit at that time.

Table 5.1 Final Success Standards

R/E Program Approach	Physical Conditions	Percent of Target Condition (Baseline Condition or Reference Site)	
		Native Cover	Nonnative Cover
Restoration and Enhancement (onsite)	Restored and no significant erosion	Greater than or equal to Target Condition ^{1,2,3,4}	Less than or equal to Target Condition ^{1,2,5}
Offsite Restoration	As determined during agency coordination	As determined during agency coordination	As determined during agency coordination

¹ Values are relative to pre-activity condition or a reference site of the same size. The reference site should represent pre-activity condition to the extent possible and only be used when pre-activity data is not available.

² Percentages are calculated using the midpoint of each cover class. See Section 5.2.2.7, Monitoring.

³ Mitigation Credit and Impact Cap drawdown will be prorated for R/E Program sites with final native cover below 100% at a rate commensurate with the percent of Target Condition that has been achieved. Final review of R/E sites may be requested at any time during the R/E Program.

⁴ Suggested interim guidelines for native cover are ≥20% for Year 1, ≥35% for Year 2, ≥65% for Year 3, and ≥80% for Year 4.

⁵ Suggested interim guidelines for nonnative cover are ≤50% for Years 1–4. Nonnative plant species are those listed by the California Invasive Plant Council (Cal-IPC) as not native to California.

For purposes of monitoring project success (as provided in Section 5.2.2.7), native and nonnative cover is estimated using the method of foliar cover estimation. Foliar cover is defined as vertical projection of exposed leaf area onto the ground surface; it generally equals the percent of the site covered by shadow if the sun were directly overhead. Vegetation cover values are grouped into cover classes, as provided in Table 5.2. Cover classes are an effective way of estimating vegetation cover because they provide easily comparable information that meets project needs while normalizing for small variations in surveyor’s perspective (i.e., the difference between 28% and 32%).

Table 5.2 Vegetation Cover Classes

Cover Class	1	2	3	4	5	6	7	8	9
% Cover	<1	1–5	5–10	10–15	15–25	25–35	35–50	50–75	>75

Specific success standards for native and nonnative cover will be calculated independently for each site using the final success standards provided in Table 5.1. Site-specific success standards are calculated based on reference condition, as provided by the Pre-activity Survey or a reference site. For example, if the Pre-activity Survey found native cover to be in cover class 6 (25% to 35%), then the final success standard for native cover at that site would be cover class 6 or higher. If the Pre-activity Survey found nonnative cover to be in cover class 7 (35% to 50%), then the final success standard for that site would be cover class 7 or lower. Additionally, where

appropriate, USFWS has discretion to approve lower success criteria or deem that a site has been successfully restored.

For purposes of the R/E Program, nonnative species will be those determined by the California Invasive Plant Council (Cal-IPC) as not native to California. SDG&E will coordinate with USFWS to determine a weed control approach for plant species listed as High on the Cal-IPC inventory, and any other weed species that is not ubiquitous throughout the service area, if that species occurs within and outside of a given site proposed for the R/E Program. Controlling the population within the entire area that these species occupy is the only way to stop their spread within the service area.

5.2.2.5 Implementation

SDG&E will select the implementation approach based on the needs of the site. That approach can be adjusted, as needed, throughout the duration of the R/E Program. SDG&E will select an approach based on available data, including, but not limited to, the baseline condition as provided in PSRs (as described in Section 5.1.3) and post-project monitoring observations (as needed). While SDG&E may discuss methodologies with USFWS, decisions about how best to achieve final success standards and the responsibility to do so will remain with SDG&E.

Restoration will typically be conducted on sites where native vegetation will not reestablish on its own within the 5-year R/E Program. Enhancement will be conducted on sites where native vegetation is anticipated to reestablish on its own but needs support from maintenance to meet Target Conditions. If a site is expected to fully recover without restoration or enhancement, SDG&E will monitor it to verify that it has met Target Conditions. Sites that do not require restoration will skip the implementation phase and go directly to maintenance.

Once a site is selected for inclusion in the R/E Program, onsite restoration or onsite enhancement Covered Activities, if prescribed, should begin at that site as soon as feasible but would most likely occur between October and February in any given year. As detailed below, SDG&E's standard habitat restoration practice is to only use native seed, collected as close to the restoration site as possible, as determined by SDG&E's qualified restoration ecologist. Container plants may be used in some situations but are not preferred because they require irrigation and could unintentionally introduce soil pathogens. SDG&E will opportunistically salvage and replant native succulent species, which it will water once to settle soil around each individual's roots or pad/stem but will provide no additional watering.

When restoration is selected, native seed will be applied to sites at the appropriate time of year and will use state-of-the-art methodologies. Native species selected for application will be suitable for the vegetation community being restored and will be sourced from nearby locations when feasible. This method has proven successful for small and/or remote areas where supplemental irrigation is not feasible and has led to SDG&E's practice of only using locally collected native seed and eliminating the need to use the standard container planting and irrigation technique.

Application rates will be determined on a site-by-site basis as-needed to meet success standards. Seed viability testing will not be required, but viability will be considered for all seed applications when selecting seed and determining application rates. SDG&E has extensive knowledge and experience with seed purity and germination rates based on years of experience collecting, testing, and applying seed on company projects. Native seed will be applied by hand and raked into the soil in all cases except where another method is required to meet project goals. Other methods of seed application may include hydroseeding or imprinting but use of these methods will be rare due to the generally small size of sites. Hydroseed application may be used where it is required for purposes of site stabilization and erosion control; imprinting is usually best on very large sites. SDG&E does not use container plants, which eliminates the need for irrigation; however, salvaged native succulent species do receive one watering during the transplanting process.

Plant installation may be used where irrigation is not required, such as with cactus and succulent species. Plant installation will use material salvaged on or near the project site as appropriate.

Sites will be prepared for seed application by removing nonnative vegetation and associated biomass, as needed, to ensure proper seed-to-soil contact prior to seed application. Soil roughening and minor decompaction will be conducted using hand tools, as needed. Mechanical decompaction may be utilized but will be rare due to the small size of sites. Access will be controlled using signage, artificial barriers, and vertical mulch obtained from native species.

Native seed mixes will contain species suitable for ecological succession at the site and dominant species found in the impacted vegetation community. Seed will be collected from the impact area and surrounding vegetation community or can be purchased if collection is not feasible. Supplemental application of seed during Years 1 through 5 will be conducted as part of annual maintenance and as determined necessary by the habitat restoration specialist.

5.2.2.6 Maintenance

Maintenance will be conducted as needed at sites in the R/E Program and will begin once implementation has been completed. The timing of maintenance and number of visits per year will vary based on the needs of each site, but, in general, maintenance will occur one to four times per year. The timing and need for maintenance will be guided by qualitative and quantitative monitoring (as described in Section 5.2.2.7), which includes assessments for nonnative plant species.

The most common type of maintenance that will be conducted is weed control. For the purposes of the R/E Program, the term “weed” refers to any plant species listed as not native to California by Cal-IPC. All weed species within R/E Program sites are subject to control efforts. SDG&E will coordinate with USFWS to determine a weed control approach for plant species listed as high on the Cal-IPC Inventory and any other weed species that is not ubiquitous throughout the service area.

Methods of weed control will be selected on a case-by-case basis to meet the needs and constraints of each site. Weed control methods may include herbicide application and/or manual removal. Herbicide will be applied in accordance with product labels and all local, state, and federal regulations, as discussed in and consistent with Section 2.2.5.2.

Another common type of maintenance that will be conducted is erosion control. Surface erosion often increases at sites where vegetation cover has been reduced. Common erosion control measures will include straw wattles and soil bag installation. For more severe cases, erosion control blanket installation or hydromulch application may be required. Erosion control products will be composed of fully biodegradable materials that can be left onsite at the end of the R/E Program. Erosion control methods will be selected by SDG&E on a case-by-case basis to meet the needs and constraints of each site and will be in compliance with SDG&E's standard erosion control practices consistent with current industry standards, as described in Section 5.1.4.

Site access controls will be installed and maintained as needed at sites where unauthorized access is slowing native plant establishment or otherwise compromises project success. Installation of signage advising against unauthorized access can be a very effective control method in many cases; where signage is not effective, visible barriers of native plant debris and other material can be placed to form a physical barrier. In more extreme cases, a physical barrier such as fence or posts with rope may be installed. Site access controls will be selected on a case-by-case basis by SDG&E to meet the needs and constraints of each site.

Where determined necessary by the habitat restoration specialist, native seed may be applied during Years 1 through 5 as part of maintenance where the restoration approach is being undertaken. In addition, other types of maintenance not described here may also be conducted at the discretion of the habitat restoration specialist. Maintenance will be conducted as needed to support project success and could exceed the number of site visits mentioned above. Maintenance is not required if the results of monitoring show that it is not necessary for a site.

5.2.2.7 Monitoring

This section describes qualitative and quantitative monitoring methods that will be utilized for sites in the R/E Program to evaluate the status, inform maintenance needs, and determine if the site is on track to meet the Target Condition.

Qualitative Monitoring

Routine qualitative monitoring by a habitat restoration specialist will be conducted for all sites in the R/E Program. Qualitative monitoring will be conducted at least twice per year with at least one visit during the peak growing season; additional monitoring will be conducted as needed with a maximum of four visits annually. Qualitative monitoring can be conducted concurrently with quantitative monitoring. Monitoring visits may be reduced in situations where monitoring negatively affects restoration.

The purpose of qualitative monitoring is to observe overall site condition and determine maintenance that may be needed at the site. Qualitative monitoring includes, but is not limited to, looking for native seed germination, determining ideal timing for weed treatment, verifying the efficacy of weed treatment, and monitoring for OHV activity and erosion-prone areas.

During qualitative monitoring, special attention will be paid to nonnative species present onsite to determine whether they are common in the area or may pose significant threat to the quality of the surrounding habitat. As a best management practice, the R/E Program will include treatment and/or removal of highly invasive nonnative species, especially perennial species rated as high or moderate threat by Cal-IPC.

Quantitative Monitoring

Quantitative performance monitoring will be conducted for all sites in the R/E Program to evaluate progress towards meeting Target Condition success standards. Quantitative monitoring will be conducted at least once for each site in the R/E Program or as needed each year to track progress of the site towards final success standards. Quantitative monitoring can be conducted concurrently with qualitative monitoring.

The purpose of quantitative performance monitoring is to determine whether a site has reached its Target Condition during each year of the R/E Program. Annual quantitative monitoring is not required but is a standard habitat restoration practice and therefore will be conducted annually unless not warranted; at a minimum, it will be conducted when the site condition appears to have reached the Target Condition. Once the site meets final success standards, it is considered complete within the R/E Program.

Quantitative monitoring will use a modified relevé method that records species composition and cover within the impacted areas; for consistency, the pre-activity baseline condition assessment will use this same method. The relevé will include, at a minimum, a species list, total native cover, total nonnative cover, and site photographs. Quantitative monitoring will be conducted during the peak growing season by a team of Biologists with habitat restoration experience. Vegetation cover will be recorded using the cover classes provided in Table 5.2.

5.2.2.8 Reporting

All maintenance and monitoring Covered Activities conducted at sites in the R/E Program will be tracked internally using a tracking database or other method, as selected by SDG&E. Tracking will include types of Covered Activities conducted, date of the activity, personnel conducting the activity, and general observations (where applicable). The results of quantitative monitoring will be retained along with data collected during the baseline condition assessment or established reference site, if applicable. Trends with native and nonnative cover will be included with all reporting on the R/E Program. A summary of R/E Program status including number of sites active in the R/E Program, number of sites completed, and total acreage as it pertains to impacts being mitigated onsite will be included with the Annual Report.

5.2.2.9 Mitigation Credit Calculation

At the discretion of SDG&E, final review of R/E sites may be requested at any time during the R/E Program, and the duration of the R/E Program may be extended as needed to meet final success. Partial Mitigation Credits will be awarded for R/E Program sites with native cover that does not meet final success standards. For these sites, Mitigation Credits will be calculated as a percent of Target Condition that has been achieved using the midpoints of each cover class. For example, if the native cover success standard for a site is cover class 6 (25% to 35%, midpoint 30%), but it has only achieved native cover class 5 (15% to 25%, midpoint 20%), then Mitigation Credits would be awarded at a rate of 20/30, or 67%.

The final success standards detailed above establish a sliding scale for accounting for permanent and temporary impacts. As shown in Table 5.1, for example, if an R/E site achieves an equal amount of native cover as compared to the Target Condition (100% at any time within the 5-year R/E Program), the impact will not count against the permanent impact cap or require deduction of Mitigation Credits. Mitigation credits (and impact crediting) for R/E Program sites that achieve a final native cover below 100% of Target Condition will be prorated at a rate commensurate with the percent of Target Condition that has been achieved. For example, if a 10-acre site achieved 90% of the Target Condition, 1 acre would be deducted from the permanent impact cap and 1 acre at the applicable mitigation ratio in accordance with Section 5.5 would be deducted from the Mitigation Credits. The other 9 acres would remain as a deduction in the temporary impact cap.

5.2.3 Completion of the Habitat R/E Program

A given site will be considered complete when it has reached its Target Condition, as measured by success standards described in Section 5.2.2.4. The R/E Program allows 5 years for each site to reach Target Condition, but a site can be completed at any point within these 5 years when it achieves the Target Condition and/or there is agency concurrence that a site is on trajectory to meet the Target Condition. Additionally, where appropriate, USFWS has discretion to approve lower success criteria or deem that a site has been successfully restored. A site that has achieved the above success standards or is otherwise determined by USFWS to have been successfully restored will remain debited from the 210 acres of authorized temporary impacts.

SDG&E will submit individual reports for each R/E site to the Wildlife Agencies for review and approval. SDG&E will provide a site visit prior to final approval if requested. Each agency will provide final written acceptance of completed sites each year, which will aid in tracking R/E Program site completions and record keeping of each site that has met its success standards and can be removed from the R/E Program. Sites requested for approval will be assumed complete unless otherwise notified by the agencies within 60 days of request submittal although SDG&E would prefer concurrence in writing. A summary of the sites meeting final success standards, that were signed off by the Wildlife Agencies during the year, will be provided annually as part of the Annual Report.

Restoration status for sites being restored offsite using the adaptive approach will be summarized in the Annual Report as stated above but sites may have additional reporting associated with them. Specific reporting for offsite restoration conducted as part of the R/E Program will be determined on a case-by-case basis by SDG&E and USFWS at the time of project initiation.

In all cases, SDG&E can choose to remove a site from the R/E Program at any time for any reason. Sites removed from the R/E Program will require deduction from the permanent impact cap and Mitigation Credit withdrawal in accordance with Section 5.2.2.9 and Section 5.5. All other sites will remain in the R/E Program for the next full year. The Annual Report shall include a list of sites selected for removal from the R/E Program. Details of this requirement are provided in Section 6.4 below.

5.3 SDG&E Access Road Removals within the Plan Area

Within the Plan Area, SDG&E uses and maintains a widespread system of roads to access SDG&E Facilities. In certain areas, SDG&E access roads may be close to road networks maintained by other entities, including, for example, municipalities, private property owners, and/or federal and/or state agencies. Therefore, in the Plan Area, certain SDG&E access roads could potentially be re-aligned or removed entirely to improve local biological resources without sacrificing safe and reliable access to SDG&E Facilities. There is also the potential that SDG&E no longer needs certain existing access roads for Facility maintenance; therefore, these roads, if any, may also be re-aligned or removed entirely without sacrificing SDG&E operations. Accordingly, when SDG&E receives reports or other concerns about roads, including for example, on Del Mar Mesa, it will work in coordination with USFWS and the landowner (if applicable) to review and address the concerns regarding existing access to SDG&E Facilities. SDG&E may also review the continuing functionality of any of its existing access roads at its discretion. Any SDG&E access road that SDG&E determines is unnecessary for safe and reliable access to its Facilities will be removed and restored to native vegetation. SDG&E will work with applicable stakeholders and agencies to expeditiously undertake any such removal and restoration.

5.4 Relation to Other Regional Habitat Conservation Plans and Preserves

For purposes of the HCP Amendment, the term **Preserve** means those conserved lands within the Plan Area in a current pending or adopted regional habitat conservation plan, or other local, state, or federal conservation plan¹⁹ that are legally protected from future development (e.g., via conservation or open space easement, through acquisition, deed restriction, or other methods) for the purpose of protecting natural habitat, species, and open space and/or that are actively managed to protect the open space or natural resources into the future. The term **Proposed Preserve** means those

¹⁹ Preserve and Proposed Preserve may include, but are not limited to, areas mapped as Multiple Habitat Planning Area, Pre-Approved Mitigation Areas, or Focused Planning Area within regional habitat conservation plans, and/or designated or proposed critical habitat with Primary Biological Features.

lands within the Plan Area that are not yet legally conserved but are planned for conservation in a current pending or adopted regional plan, or other local, state, or federal conservation plan.

Regional habitat conservation plans have been prepared by various local governments or government entities in the Plan Area such as the San Diego County MSCP, finalized in 1997; the San Diego County MHCP, finalized in 2003; the Orange County Southern Subregion Habitat Conservation Plan, finalized in 2007; the Western Riverside MSHCP, finalized in 2004; and the North County MSCP, which is in progress. The geographical areas covered by these regional habitat conservation plans in the Plan Area and associated Preserves and Proposed Preserves are identified in Figure 9.

Because Preserves and Proposed Preserves may change over time, SDG&E will meet with USFWS at least once annually and more frequently as appropriate, to review current local regional plan mapping and update Preserve and Proposed Preserve mapping.

SDG&E has operated Facilities in the Plan Area for more than 100 years and many of its Facilities pre-date regional planning efforts described above. Accordingly, some SDG&E Facilities and ROW are located within habitat areas that were later designated as Preserves by other entities as part of their conservation plans or are within Proposed Preserves. Indeed, because the Plan Area covers portions of three counties, it overlaps with the aforementioned regional habitat conservation plans that have Preserve or Proposed Preserve lands on which Covered Activities and Covered Species have the potential to occur.

The majority of Covered Species in the HCP Amendment are also covered and conserved by one or more of these regional habitat conservation plans in the Plan Area. Additionally, even species that are not expressly covered by other regional habitat conservation plans benefit from the regional planning efforts because these species often share similar habitat requirements with Covered Species in these regional habitat conservation plans. As discussed below, as with the Subregional Plan, implementation of the HCP Amendment is expected to contribute to the regional conservation of Covered Species. As shown over the past 26 years, the conservation strategy that the HCP Amendment continues and improves upon promotes conservation and comports with goals and objectives of these other regional conservation efforts. The HCP Amendment will also continue to contribute to the buildout of the regional Preserves through the acquisition and/or restoration of mitigation lands.

5.4.1 SDG&E O&M in Preserves and Proposed Preserves

Without further authorization from USFWS, SDG&E may conduct all necessary O&M with respect to all existing Facilities that are now or may hereafter be located within a Preserve or Proposed Preserve, if conducted in accordance with the provisions of the HCP Amendment. Impacts associated with O&M are likely to be small and occur along long, linear lines across the 2,815,930-acre landscape.

5.4.2 SDG&E New Construction in Preserves and Proposed Preserves

As generally described in Section 2 above, future Covered Activities will predominantly entail the maintenance, repair, upgrading, and replacement of existing Facilities. As previously noted, and discussed Section 4 hereto, all major infrastructure is now largely in place, and SDG&E anticipates building new Facilities at a far lower rate than prior decades. SDG&E currently anticipates no new large-scale construction in the near term.

Although SDG&E infrastructure is now largely in place, there is the potential that construction of new Facilities (as generally described in Section 2) may occur as a result of the extensive, rapid, and continuing development within the region that overlaps with the Plan Area, Preserves, and Proposed Preserves may be dispersed among and, in some cases, surrounded by developed areas. As a regulated utility company, SDG&E is obligated to provide safe, reliable, efficient, and cost-effective electric and gas service throughout the developed area of its service area in compliance with the Public Utilities Code and subject to the jurisdiction of the CPUC. The construction of new electric and gas transmission Facilities within Preserve or Proposed Preserve lands may be necessary in certain circumstances to meet the service requirements of developing areas.

In that event, SDG&E intends to minimize New Construction in Preserves and Proposed Preserves such that new Facilities are sited in a manner that avoids or minimizes impacts to Preserves and/or Proposed Preserves, while not impairing SDG&E's ability to meet the service demands of its customers in accordance with its responsibilities as a public utility. If permanent impacts to critical habitat cannot be avoided, then SDG&E will first attempt to mitigate with credits in the existing mitigation lands that have critical habitat for the same species or acquire other lands that are designated as critical habitat. Only if no critical habitat is available from the existing mitigation lands or as an acquisition of new habitat lands, SDG&E will provide a justification for acquiring, restoring, and/or enhancing suitable habitat land that will benefit the species and/or its critical habitat, with the concurrence of USFWS.




Further, where SDG&E determines that new Facilities with impacts greater than 1.75 acres are necessary within part of a Preserve or Proposed Preserve, SDG&E will:

- Provide USFWS written notice of its intent to install such Facilities. The written notice will contain a detailed description of such Facilities and their location, along with a map of the area. At a minimum, the information collected as part of the PSR is required. Review of the proposed Facility and USFWS approval would occur via the Minor Amendment process outlined in Section 6.5.1.2.

San Diego Gas & Electric HCP Amendment

Preserved Lands in the
Plan Area
Figure 9

Legend

-  SDG&E Service Area
-  Proposed Preserves
-  Preserves

*There are no Preserves or Proposed Preserves within the boundaries of the Moreno Compressor Station parcel.

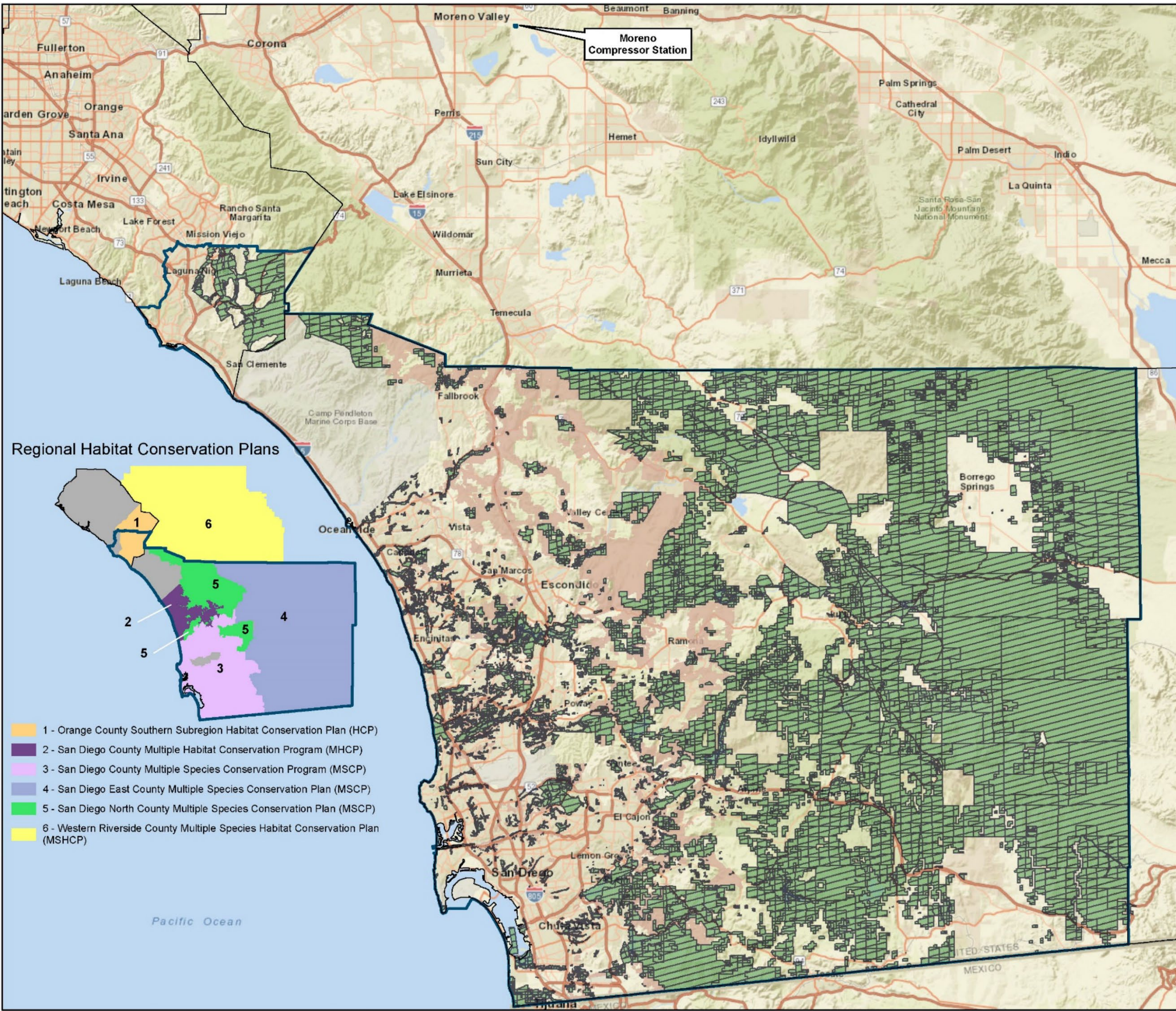


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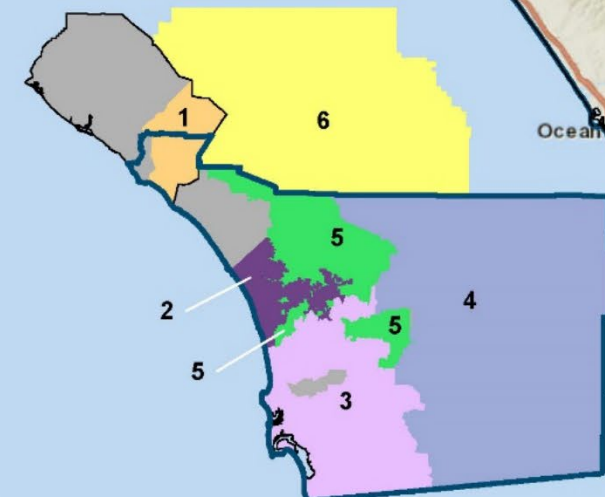


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Regional Habitat Conservation Plans



-  1 - Orange County Southern Subregion Habitat Conservation Plan (HCP)
-  2 - San Diego County Multiple Habitat Conservation Program (MHCP)
-  3 - San Diego County Multiple Species Conservation Program (MSCP)
-  4 - San Diego East County Multiple Species Conservation Plan (MSCP)
-  5 - San Diego North County Multiple Species Conservation Plan (MSCP)
-  6 - Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

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- Coordinate with USFWS and the appropriate preserve manager (if applicable), to plan and construct such new Facilities in a manner that avoids or minimizes any impacts to a Preserve or Proposed Preserve, to the extent possible, while not impairing SDG&E's ability to meet the service demands of its customers in accordance with its responsibilities as a public utility.

5.5 Mitigation Credits

Mitigation Credits associated with the HCP Amendment are debited from SDG&E's mitigation account to compensate for permanent impacts associated with Covered Activities as described below in Section 5.5.1. Temporary impacts associated with sites that meet success standards of the R/E Program or are otherwise determined by USFWS to have been successfully restored through the R/E program would not be debited from SDG&E's mitigation account as discussed in Section 5.2.

SDG&E will ensure that, during the remaining permit term of the incidental take authorizations, available habitat-based Mitigation Credits will be sufficient to provide mitigation for at least 2 years of projected impacts. If available Mitigation Credits are anticipated to be insufficient to offset those projected impacts, SDG&E will acquire additional Mitigation Credits in coordination with USFWS through (1) land acquisition as detailed in Section 5.5.2, or (2) alternative means detailed in Section 5.5.3. Species-specific mitigation as required by Table 5.4 may be identified prior to impacts and must be agreed upon prior to impact.

Mitigation for vernal pools may be satisfied through onsite restoration of vernal pools or the use of areas pre-approved by USFWS. Mitigation credits, as approved by USFWS, may be accumulated and used through advance creation, restoration, and enhancement of vernal pool basin area. Section 5.5.4 details mitigation requirements for vernal pools and Covered Species that are found in them.

5.5.1 Habitat Mitigation Ratios

5.5.1.1 O&M and New Construction

Habitat modification associated with Covered Activities that impact sensitive upland or wetland vegetation communities as listed in Table 3.2 shall be mitigated at the mitigation ratios required in Tables 5.3a and 5.3b, unless, as directed in the Species-Specific Protocols in Section 5.1.13, species-specific in-kind mitigation is warranted for impacts. This mitigation, if required based on the PSR, would be in lieu of habitat-based mitigation in Tables 5.3a and 5.3b. Species-specific in-kind mitigation required for permanent impacts to occupied habitat will be conducted per the mitigation ratios outlined in Table 5.4.

Other cover types, including agriculture, disturbed habitat, urban/developed, and eucalyptus woodland, will not require habitat mitigation.

It is recognized that Covered Activities may possibly impact habitat, only a portion of which is confirmed as occupied by a Covered Species included in Table 5.4. If project timing does not allow for surveys, it will be assumed that all habitat to be impacted is occupied (see Species-Specific Protocols in Section 5.1.13 for more guidance on survey requirements and when/where to assume occupancy). When surveys are conducted to determine occupancy status, those surveys will also determine the extent of habitat occupied by a species listed in Table 5.4 and mitigation will be as follows:

- Permanent impacts to habitat unoccupied by any Covered Species listed in Table 5.4 will be mitigated as required by Tables 5.3a and 5.3b.
- Permanent impacts to habitat confirmed occupied by any Covered Species listed in Table 5.4 will be mitigated via in-kind mitigation at the appropriate ratio provided in Table 5.4.

Table 5.3a Habitat Mitigation Ratios

Covered Activity	Location*	Duration	Ratio
New Facilities	Inside Preserve or Proposed Preserve	Permanent	2:1
		Temporary	(a)
	Outside Preserve or Proposed Preserve	Permanent	1:1
		Temporary	(a)
O&M of Existing Facilities	Inside Preserve or Proposed Preserve	Permanent	2:1
		Temporary	(a)
	Outside Preserve or Proposed Preserve	Not Applicable	Not Applicable

(a) Temporary impacts are impacts that have been mitigated through the R/E Program as defined in Section 5.2 of the HCP Amendment. For all temporary impacts, acreage not meeting success criteria shall be deducted from SDG&E Mitigation Credits at permanent impact ratio.

* Preserve and Proposed Preserve are further defined in the Glossary of Defined Terms.

Table 5.3b Wetland and Riparian Habitat Mitigation Ratios for Permanent Impacts^{1,2}

Habitat	Ratio
Tidal Salt Marsh/Salt Panne	4:1
Non Tidal Salt Marsh/Freshwater Marsh	2:1
Riparian Oak/Forest/Woodland/Scrub	3:1
Disturbed Wetland	2:1

¹ Mitigation required by more than one agency will not be additive to the mitigation ratios included here in Table 5.3b.

² Temporary impacts will be addressed consistent with Table 5.3a (a) above.

Table 5.4 Species-Specific Mitigation Ratios for Permanent Impacts to Occupied¹ Habitat that Require In-Kind² Habitat

Species	Ratio
Hermes copper butterfly	3:1
Laguna Mountains skipper	3:1
Arroyo toad	Ratios in Table 5.3a and 5.3b
Burrowing owl	Ratios in Table 5.3a
Coastal cactus wren	Ratios in Table 5.3a
Southwestern willow flycatcher	3:1
Light-footed Ridgway's rail	2:1 (freshwater marsh) to 5:1 (tidal saltmarsh)
Western yellow-billed cuckoo	3:1
Bald and Golden eagle	Refer to Eagle Conservation Plan
Stephens' kangaroo rat	2:1
Pacific pocket mouse	In-lieu fee
Peninsular Bighorn Sheep	Ratios in Table 5.3a
Western pond turtle	Ratios in Table 5.3a and 5.3b
California red-legged frog	Ratios in Table 5.3a and 5.3b
Tricolored blackbird	Ratios in Table 5.3a and 5.3b
Narrow Endemic Plants	Ratios in Table 5.3a and 5.3b

¹ Occupied has been defined for each species in Section 5.1.13, Species-Specific Protocols.

² In-kind mitigation acquired will directly benefit specific Covered Species or group of Covered Species with similar habitat types.

For example, a Covered Activity occurring within a Preserve is anticipated to impact 1 acre of habitat, but, of that 1 acre, only 0.1 acre is occupied SWFL-Habitat. Because southwestern willow flycatcher is a Covered Species included in Table 5.4, the 0.1 acre of occupied habitat will be mitigated at a 3:1 ratio, per Table 5.4 (or 0.3 acre), while the 0.9 acre of unoccupied SWFL-Habitat will be mitigated at the 2:1 ratio, per Table 5.3b (or 1.8 acres). The PSR will clearly identify which portion of the project is determined to be occupied habitat.

It is further recognized that Covered Activities may possibly impact occupied, or assumed occupied, habitat of more than one Covered Species included in Table 5.4. In that case, acquired mitigation must meet the habitat needs of each Covered Species requiring in-kind mitigation, which can be achieved through one or more parcels of land that satisfy mitigation for both species or through an alternative mitigation proposal as detailed in Section 5.5.3, Alternative Mitigation. For example, a Covered Activity is anticipated to impact 1 acre of occupied SWFL-Habitat (with a 3:1 mitigation ratio) and WYBC-Habitat (with a 3:1 mitigation ratio). If Parcel A provides 3 acres of habitat for both Covered Species, it is adequate mitigation for both (for a total of 3 acres).

Where a Covered Activity impacts habitat of Covered Species not included in Table 5.4, SDG&E will mitigate the acres impacted at the ratios in Table 5.3a regardless of whether there is habitat for one or more Covered Species not included in Table 5.4.

Regardless of what mitigation may be required in any of the above scenarios, the acreage impacts debited will be never exceed the actual acreage impacted. Thus, for

example, if a Covered Activity impacts one acre of habitat that must be mitigated at a 3:1 ratio for two or more species listed in Table 5.4, SDG&E will debit one acre from its permanent impact cap.

5.5.1.2 Wildfire Fuels Management

Acreage impacts from Wildfire Fuels Management will be calculated based on the net percent reduction of native canopy (see Section 4.4.1) and will be separately accounted for. Using this approach, SDG&E will determine the final acres of impact per year that require mitigation in either of the following ways.

Option 1: As discussed in the 2019 Annual Report, the average acreage reduction of cover for native and nonnative vegetation was 9 acres and 2 acres, respectively. Because the removal of the 2 acres of nonnative vegetation promotes the establishment of native vegetation, it was deducted from the 9 acres of native cover loss. This results in a net reduction of native canopy cover of 7 acres (i.e., 9 acres minus 2 acres).

SDG&E may apply this assumed average net reduction to any Treatment Area without further documentation and mitigate 7 acres per 100 acres of the Treatment Area. The mitigation required to offset that impact will be at a 1:1 ratio. Under this approach, if, for example, the Treatment Area was 100 acres, SDG&E would mitigate for 7 acres at a 1:1 ratio (i.e., 7 acres in this example). This offset may be accomplished through offsite restoration as described in Section 5.2, Habitat Restoration and Enhancement Measures, or may be mitigated one time via permanent mitigation options noted herein.

Option 2: SDG&E may instead conduct field surveys for a Treatment Area to document the pre- and post-activity native and nonnative vegetation cover and mitigate for the actual net difference, if any, at a 1:1 ratio. Under this approach, if, for example, the Treatment Area was 100 acres and SDG&E reduced the cover of native species by 10 acres and the cover of nonnative species by 10 acres, SDG&E would document these results and no mitigation would be required. Alternatively, if the Treatment Area was 100 acres and SDG&E reduced the cover of native species by 10 acres and the cover of nonnative species by 8 acres, SDG&E would document these results and 2 acres of mitigation (i.e., the 2-acre net difference between native and nonnative vegetation mitigated at a 1:1 ratio) would be required.

If Wildfire Fuels Management is no longer needed at a Treatment Area, SDG&E may choose to restore and/or allow the Treatment Area to return to pre-treatment conditions. Mitigation Credits that were debited for those areas will be credited based on the percent native vegetation restored, per the temporary impact approach described in Section 5.2.

5.5.2 Land Acquisition

At the outset of the Subregional Plan, SDG&E provided USFWS with funds to enable the procurement of approximately 240 acres of high-quality habitat that is now part of the San Diego National Wildlife Refuge. The provision of such established 240 acres of Mitigation Credits for impacts to Covered Species or their habitat that result from

Covered Activities. In April 2015, SDG&E purchased an additional 114 acres of Mitigation Credit of high value habitat from the Cielo B property that was obtained by The Escondido Creek Conservancy. The previous Mitigation Credits served as mitigation for Covered Species and habitat impacts, without regard to the type of habitat and the biological value of the habitat impacted, except with regard to impacts to vernal pools and wetlands.

As of the effective date of the HCP Amendment, SDG&E anticipates having remaining Mitigation Credits from either acquisition that have not been used to offset impacts to the originally authorized 400 acres of habitat modification. Except for wetlands, vernal pool, narrow endemic, and species-specific mitigation as discussed above, SDG&E may use these credits to mitigate impacts associated with Covered Activities for all Covered Species and their associated habitats as defined in Table 5.4.²⁰

SDG&E may acquire land to obtain additional Mitigation Credits for future permanent impacts. Establishing additional habitat-based Mitigation Credits through land acquisition would be contingent upon successfully establishing a new mitigation agreement with USFWS. This would include developing, funding (i.e., a non-wasting endowment) and implementing a long-term management plan approved by USFWS in perpetuity. In-kind mitigation acquired will directly benefit specific Covered Species or groups of Covered Species with similar habitat types, where possible critical habitat areas may be targeted for acquisition.

5.5.3 Alternative Mitigation Proposal

The HCP Amendment is intended to provide flexibility in achieving conservation goals. To that end, the plan allows for various methods to obtain additional Mitigation Credits. Specifically, rather than acquire additional land, SDG&E may submit a proposal to USFWS for a Mitigation Credit that may include, but is not limited to, any of the following:

1. Restoring and/or enhancing habitat.
2. Contributing funds to other regional conservation efforts, species-specific management programs, or efforts to enhance/preserve critical habitat areas.
3. Where Species-Specific Protocols in Section 5.1.13 are determined impracticable or where the costs of avoidance and minimization are excessive for the duration of a Covered Activity, SDG&E may propose alternative mitigation approaches that provide greater, long-term conservation benefits than would be achieved by the Operational Protocols. For example, SDG&E could propose a one-time, higher mitigation ratio than those identified in Table 5.4 or may propose other alternatives.

²⁰ Mitigation Credits may be used for Covered Species listed in Table 5.4 at the ratios stated therein provided the available habitat is suitable and meets the criteria for that Covered Species.

4. Propagating species for reintroduction and/or introduction into biologically suitable habitat within the Plan Area in accordance with USFWS-approved restoration and monitoring program.
5. Salvaging and relocating species into suitable, occupiable habitat in accordance with a USFWS-approved restoration and monitoring program.
6. SDG&E and USFWS may identify areas of restoration opportunities that are degraded or are being degraded by anthropogenic factors (e.g., nonnative species) or activities (e.g., habitat degradation by OHVs) not associated with Covered Activities. SDG&E may conduct offsite restoration Covered Activities within these areas, in coordination with USFWS, to credit impacts back to the permanent impact cap and restore Mitigation Credits.

Any of these mitigation approaches would require case-by-case USFWS approval. The following information must be included in the alternative mitigation approach proposal:

1. Definition of the project area.
2. A written description of the project.
3. A written description of biological information available for the project site, including the results of all focused surveys for Covered Species.
4. Quantification of impacts to Covered Species associated with the project, including direct and indirect effects.
5. A written description of project design features that reduce indirect effects, such as edge treatments and landscaping, minimization, and/or compensation through restoration or enhancement.
6. Description of measures proposed to compensate for identified impacts in a manner that demonstrates that the proposed design, including compensation, would result in a long-term benefit to the species of concern that is equivalent to or better than what would occur by conforming to the standard mitigation approach. The equivalency analysis will be based on the particular requirements of the species of concern.

In the Annual Report that will be prepared as a condition of the HCP Amendment, the general condition of the habitat associated with the Mitigation Credits will be discussed, with special attention paid to changes in the habitat such as from stochastic events like wildfires and drought. The Annual Report will also include a table showing how many credits were used from the Mitigation Credits (expressed in acres) and how many are left.

5.5.4 Vernal Pool Mitigation

Vernal pool surveys will be conducted to determine if Covered Species are present or absent as detailed in the Vernal Pool Protocols in Section 5.1.11. If project timing does not allow for surveys, it will be assumed that habitat to be impacted is occupied based

on the known range of a species. Mitigation for temporary and permanent impacts is described in the following sections. The Annual Report will include a vernal pool section that tracks and reports the amount and type (temporary or permanent) of impacts to vernal pools and reports the status of restoration/enhancement efforts.

SDG&E will collect baseline conditions (e.g., pool boundary, watershed mapping, plant list and cover, notes on topography, etc.) and prepare a vernal pool restoration/enhancement plan and submit it to USFWS for approval prior to initiating impacts.

5.5.4.1 Temporary Impacts

Covered Activities, such as but not limited to placement of structures, inseting poles, poles anchors and stubs, and underground Facility access may have temporary impacts on vernal pools. Vehicular traffic through dry vernal pool or road ruts on access roads will not be considered an impact that requires mitigation. In those cases where there are ground-disturbing impacts associated with the Covered Activities, SDG&E will restore those pools using topsoil collected prior to impacts, as described in Section 5.1.11.1. Once the Covered Activity is completed, the collected soils shall be spread out and raked into the bottoms of the restored pools.

If seed has been scattered and/or inoculum sediment has been replaced, a qualified Biologist will monitor the vernal pool for successful restoration for two subsequent wet seasons. Successful restoration will be determined/defined as the continued presence of vernal pool indicator species (or Covered Species if present) roughly comparable to the pre-disturbance condition.

Furthermore, Covered Species identified during presence-absence surveys must be observed to be fully mature, with fairy shrimp producing cysts and plant species producing seed. Unsuccessful restoration will be considered a permanent impact and will be mitigated at a 3:1 ratio. If seed or if vernal pool inoculum collection is not possible, mitigation will occur at a 3:1 ratio.

5.5.4.2 Permanent Impacts

Vernal pool mitigation required for permanent impacts to vernal pools will be conducted per the mitigation ratios outlined in Table 5.5. Restoration/enhancement for permanent impacts to vernal pools shall be accomplished by a qualified Biologist and managed and monitored for a minimum of 5 years, with at least 1 year in which the pool completely fills. Mitigation may be satisfied through either onsite restoration/enhancement of vernal pools or the use of areas pre-approved by USFWS. Mitigation credits, as approved by USFWS, may be accumulated and used through advance creation, restoration, and enhancement. Restoration/enhancement will be of high quality (e.g., Carmel Mesa and Otay Mesa) and will support Covered Species. Pre-approved vernal pool mitigation areas must be managed and monitored pursuant to a Management Plan approved by USFWS.

Table 5.5 Vernal Pool Mitigation Ratios

Species	Ratio
No plant Covered Species present, but fairy shrimp, spadefoot toad and/or vernal pool indicator plant species are present ¹	2:1
Fairy Shrimp and/or spadefoot toad (no vernal pool plant Covered Species or indicator species present) ¹	1:1
Vernal Pool Plant Covered Species	3:1

¹ Impacts to unoccupied road ruts and other man-made depressions will not be mitigated.

If SDG&E does not mitigate at a pre-approved vernal pool mitigation area, USFWS concurrence on an acceptable mitigation site is required prior to any impacts to vernal pools. Mitigation may also occur onsite provided that a sufficient number of degraded pools exist in the vicinity and have been approved by USFWS for restoration/enhancement.

6 Plan Implementation

Over the past quarter-century, SDG&E has conducted its Covered Activities in an environmentally sensitive manner in accordance with the robust avoidance, minimization, and mitigation measures detailed in the Subregional Plan. The HCP Amendment will allow SDG&E to continue implementing its successful habitat conservation program for the remaining term of USFWS's ITP. This section describes those daily and annual implementation tasks (i.e., Plan implementation) and the adaptive management requirements for mitigation lands acquired under this Plan. It describes how SDG&E will continue to staff, implement, monitor, and report on Covered Activities. It also describes conditions for permit renewal and amendments.

6.1 Term of Plan

In 1995, USFWS approved SDG&E's Subregional Plan and issued incidental take authorizations that extend to 2050. The term of the Subregional Plan and amended incidental take authorizations are not proposed to change or otherwise be extended from the existing term.

6.2 Daily and Annual Plan Implementation

SDG&E's Environmental Services Department is responsible for environmental planning and supports permitting of the utility's infrastructure and projects. The Environmental Services Department will be responsible for the overall management of the HCP Amendment through a dedicated team of Natural Resources staff that will implement the program. Direct support to the Environmental Services Department will come from SDG&E's multi-disciplinary environmental professionals, including expert consulting firms, who will work with Natural Resources staff to ensure successful implementation of and compliance with the HCP Amendment. Biological monitors and field crews will have direct roles for implementing and following Operational Protocols and Species-Specific Protocols in the field.

6.2.1 Management Oversight

SDG&E will ensure that staffing levels are adequate to fully implement the HCP Amendment. SDG&E's Environmental Services Department has the following responsibilities.

- Ensuring staff resources are available to resolve HCP Amendment program issues.
- Supervising staff to ensure successful implementation of the HCP Amendment program.
- Developing performance metrics and reports to illustrate the status of HCP Amendment implementation.

- Working with the HCP Amendment team to identify, document, and resolve non-compliance issues.
- Supporting and leading HCP Amendment process improvements.

6.2.2 Natural Resources Biologists

SDG&E Natural Resources staff or contract Biologists (i.e., field biologists, environmental compliance monitors, and inspectors) will work closely with project managers, land planners, and field crews and will have the following responsibilities:

- Reporting on Covered Activity impacts.
- Conducting or overseeing environmental training and onsite meetings with crews.
- Conducting biological surveys as directed by the HCP Amendment.
- Prescribing Operational Protocols and any applicable Species-Specific Protocols and overseeing their implementation.
- Serving as the biological monitor for Covered Activities.
- Responding to reports of death or injury of a covered wildlife species.
- Relocating Covered Species out of harm's way at construction sites when necessary and when authorized by USFWS.
- Conducting biological surveys when necessary and conducting biological monitoring when needed to minimize incidental take.

6.2.3 Field Crews

SDG&E's field crews, including contract field personnel, will follow the Operational Protocols and any applicable Species-Specific Protocols as directed by internal environmental release documents. Field crews at the Covered Activity site will work closely with Biologists to ensure compliance with Operational Protocols and any applicable Species-Specific Protocols during field crews' day-to-day Covered Activities.

6.3 Administrative Implementation Tasks

A variety of implementation tasks are associated with the program. These tasks are described in the sections below.

6.3.1 Conduct Education and Training

Three types of training will be available to SDG&E staff and contractors: annual training, project-specific training, and as-needed training. Trainings will consist of a brief discussion of species biology and the legal protections afforded to Covered Species; a discussion of the biology of the Covered Species; the habitat requirements of these Covered Species; their status under the ESA (and/or CESA); measures being taken for

the protection of Covered Species and their habitat under the HCP Amendment; adherence to speed limits; and review of all Operational Protocols. A fact sheet conveying this information will also be distributed to all employees working in the project area.

More specifically, annual training is broad and will cover multiple aspects of the HCP Amendment, including the Plan as a program, Covered Activities, Covered Species, Operational Protocols, Species-Specific Protocols, compliance requirements, and the conservation strategy. The targeted audience that will receive HCP Amendment education and training may include construction crew members, project managers, land planners, environmental staff, construction contractors, and environmental management staff. Annual training will be conducted either in person or as computer-based training.

Project-specific training will be provided for work conducted in areas occupied by Covered Species and/or as defined by Species-Specific Protocols.

Training will also be provided for staff on an as-needed basis throughout the implementation of the HCP Amendment. As-needed training could address implementation, Operational Protocols, Species-Specific Protocols, methods for standardizing field work, and other topics.

6.3.2 Conduct Pre-Activity Surveys

The purpose of the Pre-activity Survey is to determine the presence or absence of sensitive resources on or in the vicinity of a project area. A Pre-activity Survey shall be conducted, and associated PSR prepared, prior to the start of construction for Covered Activities occurring within or adjacent to habitat with potential to support Covered Species. In those situations where more than one visit may be necessary to identify a given species, such as certain birds, no more than three site visits shall be required. Due to the priority placed on species avoidance as part of conducting Covered Activities, USFWS survey protocols will not be utilized; however, when deemed required, Species-Specific Protocols will be implemented. However, surveys will be appropriately timed, as needed, to assess the potential impacts from Covered Activities. The PSR will document the environmental review of the potential impacts to Covered Species as a result of implementing a Covered Activity. PSRs serve as the record of Covered Activity compliance and will contain, but not necessarily be limited to, the following:

- Covered Activity project description;
- Extent and type of potential impacts from the Covered Activity;
- Potentially affected Covered Species;
- Prescribed Operational Protocols, including applicable Species-Specific Protocols; and
- The potential mitigation required to offset the impacts as a result of carrying out the Covered Activity.

The recommendations regarding how to complete the Covered Activity while avoiding or minimizing disturbance to Covered Species will be detailed verbally to field personnel and followed by written documentation. The PSR memorializes Plan compliance and is not intended to replace other reports for other agencies or other discretionary permit approvals pursuant to state and federal regulations and laws. The Annual Report, as detailed in Section 6.4, will summarize the data and information contained in these reports to document the prior year's annual impacts and mitigation account balances.

For Covered Activities that will result in an unavoidable, direct impacts to a Covered Species, a PSR (or similar document) will be prepared and submitted to USFWS, who will then be given 5 days to confirm whether additional consultation is required.

For all other Covered Activities, PSRs will not be required to be submitted to USFWS; however, they will be made available to USFWS at their request. Additionally, the Annual Report will document all Covered Activities and the total impacts for each and the required mitigation.

6.3.3 Implement Operational Protocols and Species-Specific Protocols

As part of the initial HCP Amendment implementation training, Environmental Services staff will be trained on the Operational Protocols and Species-Specific Protocols as described in Section 5.1 and the ECP. SDG&E will implement applicable Operational Protocols and Species-Specific Protocols as detailed in Section 5.1 and the ECP.

6.3.3.1 Agency Conference and Communication

As defined in many of the Species-Specific Protocols, there are instances where coordination with USFWS may be required and may not always require a defined PSR or may require more information such as a Minor Amendment, as described in Section 6.5.1.2 below. Table 6.1 below summarizes the Operational Protocols and Species-Specific Protocols that would require additional agency communication.

6.3.4 Maintain Mitigation Requirements

SDG&E will secure mitigation for its impacts as described in Section 5.5. The specific details of the approach; determination of habitat mitigation needs; types of mitigation; selection, location and management considerations; and debit process are described in Sections 5.2 and 5.5.

SDG&E will record the acres of habitat acquired, its location, and the Covered Species benefiting from the mitigation. SDG&E will also account for the acres of habitat debited from mitigation lands. SDG&E will track the types of habitat acquired and identify any issues associated with the habitat acquisitions or management. If acquisition or management issues occur, SDG&E will work with USFWS to adjust the acquisition process or clarify management decisions. Additional information on tracking impacts and mitigation is provided in Sections 6.3.6 and 6.3.7.

Table 6.1 Situations Requiring Agency Coordination

Protocol Reference ¹	Additional Agency Coordination
<u>Section 5.1.11 – Vernal Pool and Road-Rut Protocols (OP 61, 63, 74): Assuming species presence and salvage approach</u>	SDG&E will confer with USFWS to determine if any vernal pool Covered Species should be assumed present and whether soil (inoculum) and/or vernal pool plant seed shall be salvaged from the impacted vernal pools.
<u>Section 5.1.12 – Narrow Endemic Plant Protocol (OP 76): Unavoidable impacts to narrow endemic plants</u>	SDG&E will confer with USFWS to determine the best approach for minimization of impacts including additional measures such as restoration, enhancement of suitable habitat, and salvage/relocation of species to a suitable location.
<u>Section 5.1.13 – Covered Activities within Habitat: Covered Activities occur within or adjacent to habitat for Laguna Mountains Skipper (OP 77), Hermes Copper Butterfly (OP 78), and/or Arroyo Toad (OP 79)</u>	Avoidance and minimization recommendations will be included as part of the PSR for USFWS review.
<u>Section 5.1.13 – Avian Nesting Buffer Reduction:</u> Tricolored Blackbird (OP 82), Burrowing Owl (OP 83), Coastal Cactus Wren (OP 85), Western Snowy Plover (OP 86), Western Yellow-billed Cuckoo (OP 87), Southwestern Willow Flycatcher (OP 88), Belding’s Savannah Sparrow (OP 90), Coastal California Gnatcatcher (OP 91), Light-Footed Ridgway’s Rail (OP 92), California Least Tern (OP 93), and Least Bell’s Vireo (OP 94)	In the event that the buffer criteria cannot be achieved, SDG&E would develop alternative measures approved by USFWS.
<u>Section 5.1.13 – Burrowing Owl Passive Relocation (OP 83): An active burrowing owl burrow/shelter will be directly impacted during the nonbreeding season.</u>	Individuals may be passively relocated with concurrence from USFWS. Methods will be outlined in a project-specific plan and follow the most current guidelines.
<u>Section 5.1.13 – Ground Disturbance in Stephens’ Kangaroo Rat (SKR) (OP 95) and Pacific Pocket Mouse (PPM) (OP 97) Habitat: Covered Activities that result in ground disturbance and/or vegetation clearing within SKR and PPM Habitat.</u>	SDG&E will retain a SKR/PPM Biologist and submit the Biologist’s resume to USFWS for approval. SDG&E will coordinate with USFWS on the implementation of the measures to minimize impacts to SKR/PPM.
<u>Section 5.1.13 – California Red-Legged Frog (OP 80) and Western Pond Turtle (OP 81) Species observed during preconstruction survey.</u>	SDG&E will contact USFWS before proceeding with Covered Activities and submit measures to avoid impacts.
<u>Section 5.1.13 – Golden Eagle (OP 84) and Bald Eagle (OP 89): Agency coordination outlined in ECP, Appendix B.</u>	Refer to ECP (Appendix B of the HCP Amendment), hereto.
<u>Section 5.1.13 – Peninsular Bighorn Sheep (OP 96): Covered Activities occur within Peninsular Bighorn Sheep habitat. See measures in Appendix C.</u>	Avoidance and minimization recommendations will be included as part of the PSR for USFWS review.

¹ Mitigation for species identified in Tables 5.4 and 5.5 will need USFWS approval prior to Covered Activities.

6.3.5 Mitigation Effectiveness

The HCP Amendment team will ensure that the mitigation program (see Section 5.5) is effective for new lands acquired as part of the HCP Amendment as outlined below. It will ensure mitigation lands contribute to a network of permanently protected and managed lands and ensure mitigation lands benefit Covered Species as planned in site-specific management plans. Mitigation properties will be subject to regular management, monitoring, and reporting, and the results of these efforts will be summarized in the Annual Report from all mitigation property managers overseeing conservation land management (see Section 6.4).

As described in Section 5.5, the HCP Amendment provides for multiple mitigation approaches. If SDG&E obtains additional Mitigation Credits through land acquisition, SDG&E will rely on the effectiveness monitoring associated with those management plans to demonstrate the mitigation is effective. If SDG&E purchases mitigation lands through fee title or conservation easement, effectiveness monitoring will be built into the individual management plans. Additional information on maintaining the habitat values on mitigation sites is described in Section 7, Changed and Unforeseen Circumstances and Regulatory Assurances.

6.3.6 Impact Accounting

The HCP Amendment team will keep a running total of annual Covered Activity impacts and Covered Species incidental take, including impacts on critical habitat, over the permit term. For wildlife habitat impacts, SDG&E will record habitat losses in acreage to the nearest hundredth of an acre, or square feet, whichever is necessary to capture the entire impact. For plant Covered Species, SDG&E will record habitat losses as acreage to the nearest hundredth of an acre, or square feet, whichever is necessary to capture the entire impact; or as individual plant losses; or both. If SDG&E Biologists/habitat restoration specialist determine restoration plans are ineffective and impacts are reclassified as permanent, these impacts will also be tracked and mitigated.

6.3.7 Mitigation Accounting

The HCP Amendment team will calculate the mitigation that is required to offset the prior year's impacts (as described in Section 6.3.6). Temporary and permanent impacts for the reporting year will be mitigated using (1) the extent of Covered Species habitat and (2) the ratio of compensation based on whether the impacts are (a) temporary or permanent and (b) whether the impacts occurred inside or outside an existing or Proposed Preserve.

6.4 Reporting

Each year, the HCP Amendment team will prepare an Annual Report to document permit compliance and implementation of the conservation strategy. Each Annual Report will summarize the previous calendar year's Covered Activities and will be completed by May 1 following the reporting year. The report delivery date may be

changed with mutual agreement of SDG&E and USFWS. The Annual Report will be submitted to designated representatives of USFWS.

The Annual Report will meet the following goals.

- Provide the necessary information to demonstrate SDG&E is implementing the HCP Amendment successfully and in compliance with applicable Plan requirements.
- Document challenges with HCP Amendment implementation that occurred during the reporting year and the steps taken to resolve those issues.
- Document foreseeable issues, if any, with implementation that may require coordination with USFWS to fix or otherwise address. Such issues could include the infeasibility of implementing Operational Protocols or Species-Specific Protocols or acquiring mitigation for Covered Species.
- Make recommendations for improving the success of the conservation strategy, including revisions to Operational Protocols or Species-Specific Protocols or the implementation process.
- Document mitigation is being secured and benefiting Covered Species.

The Annual Report will organize and summarize reporting information in two ways. First, each Annual Report will summarize the previous calendar year's Covered Activities, documenting all compliance requirements for the reporting year. Second, the Annual Report will compile and summarize impacts and mitigation account balances from the previous years, starting from the date USFWS issues Plan-related permits and/or authorizations. At a minimum, each Annual Report will include the following information to document the previous year's Covered Activities.

- A summary of the annual training provided.
- A summary of impacts on Covered Species habitat²¹ and critical habitat.
- Specifically, the report will include:
 - Number of Covered Activities completed.
 - Total acreage of temporary, permanent and wildfire fuels management impacts within the Plan Area.
 - Total acreage of temporary, permanent and wildfire fuels management impacts to Covered Species habitat as identified in Table 4.4, and critical habitat.

²¹ Impacts to Covered Species habitat will be estimated on a project by project basis (in the PSR) and the annual report will document 1) Actual impacts incurred for each vegetation community and 2) the cumulative total of all impacts to all vegetation communities. Impacts will be limited by the total impacts authorized under this Plan (i.e., 400 acres permanent, 210 acres temporary, 210 acres Wildfire Fuels Management).

- Comparison of actual impacts to the anticipated impacts identified in Table 4.4 for Covered Species habitat.
- Should SDG&E's impacts to a Covered Species habitat as identified in Table 4.4, or total impacts authorized under this plan, reach 80% of the authorized limit, notification will be included in the Annual Report.
- A summary of any injury or mortality-related incidental impacts to/take of Covered Species that occurred during the year.
- Documentation of compliance with mitigation requirements.
 - Total acreage of mitigation available to debit impacts (both approved and pending).
 - Total acreage of mitigation obtained for Covered Species and critical habitat during the year.
 - Total acreage of mitigation applied to offset Covered Species and critical habitat impacts during the year.
 - End-of-year acreage balance of mitigation remaining for each Covered Species.
- Summary of all discoveries, encounters, relocations of Covered Species, including positive survey results and biological monitoring detections, and information on the number and location of species discovered during surveys and biological monitoring Covered Activities.
- Description of any adaptive management measures proposed for the following year for new mitigation lands.
- A list of all amendments or other important decisions made to date, starting with the permit issuance.
- Summary of sites active in the R/E Program, number of sites completed, and total acreage as it pertains to impacts being mitigated onsite.
- A list of sites selected for removal from the R/E Program because they did not meet success standards within 5 years or are not expected to do so.
- Additional information as mutually agreed to by SDG&E and USFWS.

6.5 Changes to the HCP Amendment

The HCP Amendment addresses potential impacts to Covered Species and their habitat that are associated with Covered Activities for the remaining permit period. Changes may be required during the remaining permit period. Potential changes range from clerical (i.e., administrative, non-substantive) changes with no effect on the implementation of the HCP Amendment's commitments to Minor or Major Amendments,

which involve varying degrees of change to the HCP Amendment's implementation obligations.

Substantive changes that could initiate amendments may include, but are not limited to, adding Covered Activities not currently covered by the HCP Amendment, increasing the level of authorized incidental take of Covered Species, extending coverage to newly Listed Species, expanding the geographic region of HCP Amendment coverage, and moving species currently not proposed for coverage to the Covered Species list.

SDG&E will document changes and amendments in addenda to the HCP Amendment. Any accompanying documents necessary to satisfy applicable law also will be prepared. HCP amendments may require additional environmental analysis under CEQA, NEPA, or both. All Minor or Major Amendments require consultation with and concurrence by USFWS. In addition, Major Amendments will require amendments to USFWS's ITPs.

6.5.1 Processing Plan Changes

The information necessary to document proposed changes to the HCP Amendment will be presented to USFWS in the form of an addendum to the HCP Amendment. The addendum will state the need for the change; the proposed change; and, based on the type of change, specific information and findings to justify the change(s). While the addendum will be prepared as a separate document, the addendum may also be incorporated as an element of any required CEQA or NEPA document circulated for public review and comment for the proposed action. Three types of changes to the HCP Amendment may occur as described below: clerical or administrative changes; Minor Amendments; or Major Amendments. The Annual Report on the HCP Amendment's implementation will document all changes to the HCP Amendment and amendments for the previous calendar year and include the supporting addenda.

Most changes to the HCP Amendment are expected to be administrative changes or Minor Amendments, and some Major Amendments may be required.

6.5.1.1 Clerical and Administrative Changes

Clerical and administrative changes are intended to be non-substantive edits and updates to the HCP Amendment and include, among other things, typographical corrections and minor editing that do not affect conservation commitments, vegetation mapping, and species occurrence updates.

Administrative and clerical changes may be made by SDG&E on its own initiative or in response to a written request submitted by USFWS and will not require any amendment to the HCP Amendment or permits. All proposed clerical or administrative changes shall be circulated in writing to SDG&E and USFWS by the party proposing the change. Proposed clerical or administrative changes are anticipated to be non-controversial. If no party objects to the proposed clerical or administrative change within 30 days of receipt, the change shall be deemed accepted. If a party objects to a proposed clerical or administrative change, the parties will confer to review the requirements for

proposing an administrative and clerical change. If the parties continue to disagree on the contents and requirements for proposing a clerical or administrative change, either party may elect to propose the change as a Minor Amendment to the HCP Amendment. Each Annual Report shall include a summary of all clerical and administrative changes made to the HCP Amendment during the preceding calendar year.

6.5.1.2 Minor Amendments

Minor Amendments are permissible without amending the underlying section 10(a)(1)(B) permit provided that USFWS determines that the changes do not (1) result in additional incidental take of/impacts to Covered Species not analyzed in connection with the original HCP Amendment; (2) result in operations under the HCP Amendment that are significantly different from those analyzed in connection with the original HCP Amendment; or (3) have adverse effects on the environment that are new or significantly different from those analyzed in connection with the original HCP Amendment. General criteria for determining the applicability of the Minor Amendment process are shown below. Covered Activities that meet the criteria will be processed as a Minor Amendment and reported in the Annual Report.

- The activity requiring coverage must fall within the definition of Covered Activities outlined in Section 2.2, and the cumulative effects of such activity when added to the effects of other Covered Activities may not exceed those analyzed in the original HCP Amendment.
- The activity requiring coverage involves take of/impacts to Covered Species; incidental take of/impacts to Listed Species not covered by the HCP Amendment will not be addressed with a Minor Amendment.
- The activity will occur in the Plan Area.
- The activity requiring coverage will not require that USFWS amend its intra-agency Section 7 Biological Opinion.
- The HCP Amendment provides adequate mitigation to offset impacts.
- The activity requiring coverage, including any measures incorporated to reduce impacts, does not: permanently hinder other conservation programs; or result in any net loss in biological functions and values of Preserves (or Proposed Preserves) within the Plan Area, including maintaining the acreage of habitat for and populations of Covered Species within Preserves (or Proposed Preserves) within the Plan Area.

Additionally, transferring a portion of the authorized 400 acres of permanent impacts to temporary impacts and/or fuel modification impacts (resulting in no net increase in impacts) may be accomplished through a Minor Amendment. Further, Covered Activities supporting new projects that will impact a narrow endemic plant species, vernal pool species, Laguna Mountains skipper, Hermes copper butterfly, arroyo toad, southwestern willow flycatcher, light-footed Ridgway's rail, western yellow-billed cuckoo,

tricolored blackbird, western pond turtle, California red-legged frog, Stephens' kangaroo rat, or Pacific pocket mouse, and/or more than 1.75 acres of a Preserve or Proposed Preserve will require Minor Amendments to the HCP Amendment.

SDG&E and USFWS may propose changes to the HCP Amendment requiring a Minor Amendment by providing written notice to the other parties. At a minimum, such written notice shall include the following:

- An explanation of why the change requires a Minor Amendment.
- An analysis of the environmental effects as a result of pursuing the Minor Amendment and an explanation of why the effects of the proposal (i) are not new or significantly different from those considered in the HCP Amendment and (ii) would not result in new impacts to Covered Species and habitat, or levels of incidental take/impact beyond those analyzed in connection with the HCP Amendment and the permits.

USFWS will use reasonable efforts to respond to proposed Minor Amendments within sixty (60) days of receipt of such submission by either approving or denying the Minor Amendment, requesting additional time to review the proposal, or by notifying the proposing party that the proposed Minor Amendment must be processed as a Major Amendment in accordance with Section 6.5.1.3 of the HCP Amendment. Proposed Minor Amendments will become effective upon written approval of USFWS.

6.5.1.3 Major Amendments

Major Amendments will be required if a proposed action would include but not be limited to:

- increase incidental take of/impact to a Covered Species or habitat impacts beyond the authorized 400 acres of permanent impacts, 210 acres of temporary impacts (without a commensurate decrease in acres of permanent impacts), or 210 acres of Wildfire Fuels Management impacts;
- addition of a Covered Species; and/or
- modify/expand the HCP Amendment to include areas not already included in the Plan Area.

Major Amendments will require analyses of the anticipated effects of the proposed action on Covered Species, on sensitive habitats and species not addressed herein, and on the additional conservation to be provided through the Major Amendment process. Major Amendments will be processed as permit amendments in accordance with all applicable federal and state statutory and regulatory requirements, including NEPA and CEQA. All Major Amendments to the HCP Amendment will be memorialized through an addendum to the HCP Amendment and a permit amendment and will be documented in the Annual Report.

6.6 Future Section 7 Consultations

An important goal of the HCP Amendment is to provide a framework for ESA compliance for all Covered Activities in the Plan Area, including Covered Activities that are implemented on federal lands or that require a subsequent federal authorization. The HCP Amendment provides incidental take coverage for wetland/riparian dependent Covered Species and includes Operational Protocols, Species-Specific Protocols, and mitigation for potential impacts to these species and their habitat. While incidental take of wetland/riparian dependent Covered Species is covered by the HCP Amendment, its issuance does not satisfy other applicable laws or agency obligations related to impacts to waters/wetlands. The HCP Amendment also does not alter the obligation of federal agencies to consult with USFWS or the National Marine Fisheries Service pursuant to Section 7 of the ESA for actions related to the Covered Activities.

Consequently, for some future Covered Activities, ESA Section 7 consultation will still be required even though the incidental take of/impact to Covered Species has already been authorized by the HCP Amendment permit (e.g., Covered Activities requiring Clean Water Act Section 404 authorization). Any such impacts would still require the applicant to secure applicable separate permits and satisfy applicable processes (e.g., U.S. Army Corps of Engineers Clean Water Act 404 permits, State Water Resources Control Board Clean Water Act 401 Certifications, and CDFW Streambed Alteration Agreements, as appropriate) to comply with applicable law. Where Covered Activities require a U.S. Army Corps of Engineers issuance of a 404 permit authorizing discharge of dredged or fill material), Operational Protocols, Species-Specific Protocols, and mitigation measures contained in the HCP Amendment may be utilized and/or considered during the consultation process, but the HCP Amendment does not absolve the U.S. Army Corps of Engineers of its independent responsibility under ESA Section 7. If the project is consistent with the HCP Amendment, USFWS will do a streamlined consultation with the U.S. Army Corps of Engineers.

To help facilitate future Section 7 consultations and other federal agencies' ESA compliance, SDG&E has included template letters and a template Biological Evaluation outline in Appendix H of the HCP Amendment. The goal of future consultations will be to strive for streamlining of consultations where feasible and minimizing duplicative analyses of impacts on covered species.

6.7 Relation to Other Regional HCPs/NCCPs

SDG&E's HCP Amendment independently governs Covered Activities in its service area. The HCP Amendment is unlike many regional HCPs/NCCPs and does not depend on the creation of a multi-jurisdictional habitat preserve. Instead, the HCP Amendment is premised upon avoidance of impacts to Covered Species and their habitat and implementation of minimization and mitigation measures where such impacts are unavoidable. The implementation of the HCP Amendment and incidental take coverage are independent of other regional HCPs/NCCPs and SDG&E does not need to

participate in other regional HCPs/NCCPs as a participating special entity to receive incidental take coverage.

The HCP Amendment includes all of SDG&E's service area, which overlaps with existing regional HCPs/NCCPs. The HCP Amendment remains designed to be consistent with all regional HCPs/NCCPs in the SDG&E service area, as described in Section 1.4.2. Though SDG&E will utilize its best efforts to coordinate its implementation of the HCP Amendment with the implementation of other regional HCPs/NCCPs, the HCP Amendment shall be implemented as an overlay of and independent of any other regional HCPs/NCCPs within the boundaries of which any Covered Activity takes place or any Facility is located. However, measures and mitigation requirements may differ as each regional HCP/NCCP has been developed independently. When SDG&E conducts Covered Activities in natural areas SDG&E and its contractors are required to implement the HCP Amendment's operational protocols, including providing compensatory mitigation, for unavoidable impacts to Covered Species habitat in the HCP Amendment area. Regardless of geographic area, the HCP Amendment controls Covered Activities, including measures and mitigation requirements. In short, with limited exceptions relating to Preserve Areas in such plans, as described in Section 5.4, the HCP Amendment controls Covered Activities and will be implemented independent of such other plans. However, nothing in this HCP Amendment shall be construed to diminish or extend the powers or authority of any local government to regulate any SDG&E Covered Activity or Facility.

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7 Changed and Unforeseen Circumstances and Regulatory Assurances

Changed circumstances is defined in 50 C.F.R. 17.3 as changes in circumstances affecting a species or geographic area covered by a conservation plan that can reasonably be anticipated by applicant (here, SDG&E) and USFWS and that can be planned for. Specific factors analyzed in the HCP Amendment include vandalism, fire, floods, landslide and wind/water erosion, drought, climate change, and invasive species.

Changed circumstances will be addressed through the implementation of remedial measures on mitigation lands. Remedial measures are specific actions that will be taken in response to changed circumstances and are designed to address the adverse impacts to Covered Species on mitigation lands resulting from changed circumstances. Remedial measures will generally not include actions beyond those expressly identified in this section, nor for any event not specifically identified as a changed circumstance, although the measures may include new actions agreed to by SDG&E and USFWS. Remedial measures differ from adaptive management in that remedial measures are predetermined and defined actions that must be taken in the event of a changed circumstance. If a changed circumstance occurs within mitigation lands within the plan area as defined by these sections, the land manager will notify USFWS of this changed circumstance within 30 days after learning that any changed circumstances defined by these sections have occurred. The land manager will implement remedial measures in the manner described below and will report to USFWS on its actions. The land manager will make such modifications without awaiting notice from USFWS. Changed circumstances do not apply to restoration or enhancement projects until those projects meet their respective success criteria. If repeated damage occurs to a restoration or enhancement site, SDG&E and USFWS will discuss remedies to the situation. Unforeseen circumstances are defined in 50 C.F.R. 17.3 as changes in circumstances affecting a species or geographic area covered by a conservation plan that could not reasonably have been anticipated by plan developers and USFWS during the plan's negotiation and development, and that result in a substantial and adverse change in the status of the Covered Species.

In the event of unforeseen circumstances during the permit term, SDG&E and USFWS would work together to identify opportunities to redirect existing resources to address these unforeseen circumstances. However, SDG&E requests assurances consistent with the federal No Surprises Regulation that USFWS will not:

- require the commitment of additional land, water, or financial compensation by SDG&E in response to unforeseen circumstances other than those agreed to elsewhere in the HCP Amendment; or
- impose additional restrictions on the use of land, water, or natural resources otherwise available for use by SDG&E under the original terms of the HCP Amendment to mitigate the effects of the Covered Activities or in response to unforeseen circumstances.

As described in the No Surprises Regulation, it is USFWS’s responsibility to demonstrate the existence of unforeseen circumstances using the best scientific and commercial data available. The federal No Surprises Regulation does not limit USFWS or any federal, state, local, or tribal government agency or private entity from taking additional actions at its own expense to protect or conserve Covered Species. The federal No Surprises Regulation also does not prevent USFWS from asking SDG&E or its land managers to voluntarily undertake additional mitigation on behalf of the affected species.

7.1 Specific Changed Circumstances

The discussion in this subsection relates to the land manager’s responsibility for Changed Circumstances on mitigation lands acquired as part of SDG&E implementation. The endowment for each mitigation site’s management plan will include funds for remedial measures to address appropriate site-specific Changed Circumstances; no contingency funds will be included in the property analysis record (PAR) analysis for Unforeseen Circumstances. Within each specific Changed Circumstance, a trigger will be initiated when a range of conditions constitute a Changed Circumstance and the land manager can use adaptive management to address the specific Changed Circumstances that have occurred. For conditions below the lowest value, annual management actions are expected to be included in the management plan. To address conditions within the expected range, remedial measures will be implemented to address the Changed Circumstances. Conditions above the range are considered an Unforeseen Circumstance.

7.1.1. Fire

Repetitive Fire is defined as a fire that (1) occurs in the same location as a previous fire; (2) occurs between 3 to 10 years after the initial fire; (3) burns at least 50% of any future mitigation lands; and (4) is a single fire so intense or of such severity that it would be unlikely for the area to recover to the original vegetation community.

Risk Assessment

Because much of the area within the Plan Area where future mitigation sites would be established supports highly flammable scrub and grassland, risk of wildfire could be high. Based on the history of fire within the Plan Area, fire is likely to occur during the life of the HCP Amendment to warrant specific measures to address such a change in

circumstances, although it is expected that preventative measures, including fire suppression, will be effective at reducing the risk of fire.

Under certain circumstances, the occurrence of fire within potential mitigation sites may adversely affect Covered Species. Repetitive Fires create conditions for habitat type conversion from suitable Covered Species habitat to non-suitable or poor-quality habitat. The damage that a repetitive wildfire might cause to a mitigation site is difficult to predict because it depends on where the wildfire started, the wind direction and force, atmospheric conditions, and other temporal factors. The severity and temperature of the fire, as well as the habitat affected, would influence the extent of the damage and the appropriate response necessary to prevent habitat type conversion.

Existing management funds will be used to address management actions for fires up to 300 acres or for which management actions exhaust 4.5% of the contingency set aside for adaptive management, whichever is greater²². Changed Circumstances funding will be used to address site-specific management issues after a large fire. Unforeseen circumstances are fire-related events that are so catastrophic that they render the area unusable to the Covered Species without massive rehabilitation. In these instances, SDG&E will work with USFWS to determine how to best prioritize the use of the endowment and Changed Circumstance funding.

Preventative Measures

SDG&E will include site-specific fire prevention measures within any habitat management plans prepared for future mitigation lands. Measures should be tailored to the sites but may include fire breaks, identification of water resources, and nonnative species removal to reduce fuel.

Remedial Responses

Repetitive Fires may or may not cause long-term adverse impacts on species; therefore, the need for any additional management will be considered in the context of general land management actions. SDG&E will ensure that the funds are included in any habitat management plans that are developed for a given mitigation site to respond to Repetitive Fire (see Section 5.5). Land manager responses could include, but are not limited to, monitoring of the mitigation site to determine whether a response is required; development of a strategy that would protect the site from further damage due to erosion such as replanting native species; installation of erosion control devices; and/or monitoring for restoration success, including controlling invasive weeds as identified in the management plan for the site.

²² When SDG&E acquires property for mitigation under this Plan, amongst other things, a non-wasting endowment is developed for the management of the mitigation property in perpetuity. To ensure that the return on investment is sufficient to create a non-wasting endowment, SDG&E includes a 5% contingency for adaptive management of the mitigation property. Supporting templates for management plans and PAR analyses are not required but may be added in the future as part of administrative changes with USFWS.

7.1.2 Drought

For the purpose of defining Changed Circumstances, drought is defined as climatic drought when the mean annual rainfall is less than 50% of normal with a duration of no less than 3 years, as declared by the California State Department of Water Resources and/or the San Diego County Water Authority. Droughts of more than 10 consecutive years are considered Unforeseen Circumstances.

Risk Assessment

Drought is a cyclical weather phenomenon that is beyond human control. Drought is not uncommon in southern California, and it is a phenomenon to which local natural habitats and species have adapted over time. Drought occurs slowly over a multi-year period, differing from the catastrophic events of fire and flood, which occur rapidly and afford little time for preparing for disaster response. Drought conditions may adversely affect Covered Species habitat. The potential for drought to impact a mitigation site increases with the length of a drought. The land manager will respond to the management needs of the species and will use Changed Circumstances funding when necessary and approved by USFWS to help address drought conditions and enhance the species' habitat.

Preventative Measures

Preventative measures for climatic drought are beyond scope of, and therefore are not included in, the HCP Amendment.

Remedial Responses

To the extent SDG&E and USFWS determines that a drought condition as defined by this section exists on a mitigation site, that party will notify the other parties. After notification is given, SDG&E will ensure that the funds are included in any habitat management plans that are developed by any perspective third-party land manager for a given mitigation site to respond to drought. Land manager responses could include, but are not limited to, monitoring of the mitigation site to determine whether a response is required, development of a strategy that supports the re-growth of habitat and or suppression of invasive plant species, and/or strategies to reduce potential for habitat type conversion as outlined in management plan.

7.1.3 Invasive Species

Invasive plant or animal species could occur or be introduced into the mitigation areas, (e.g., bullfrogs, versatile fairy shrimp, fishes, red-eared sliders, and noxious weeds) subsequently reducing or affecting the quality of the habitat for Covered Species. Invasive plant species spreading throughout the Plan Area within the permit term is a foreseeable event. Noxious weed infestations that are between 5% and 50% of a mitigation parcel are considered a Changed Circumstance. The intent of the actions that follow is to allow a land manager to utilize Changed Circumstances funding at the sign

of a serious invasive species problem. If an invasive species, despite a land manager complying with all applicable invasive species control requirements and using all feasible methods to control invasive species, spreads beyond a level that can effectively be controlled (i.e., greater than 50%), it would be considered an Unforeseen Circumstance beyond the scope of the HCP Amendment, and the land manager would not be required to implement remedial actions to address the event.

Risk Assessment

Although invasive, exotic, or pest species of plants may currently be present within a mitigation site, an unexpected and/or sudden increase in certain invasive species may create the potential for impacts to Covered Species, which could have a significant adverse effect on Covered Species within the mitigation site. Opportunities for increases in invasive species could occur as urban development expands in areas surrounding a mitigation site. In addition, the occurrence of a catastrophic event may precipitate sudden increases of invasive species.

Preventative Measures

Any management plan approved by USFWS used to establish a mitigation site will include measures to reduce the opportunity for invasion by exotic species.

Remedial Responses

Once invasion by exotic species has occurred, natural succession likely will not allow for the complete recovery of a Covered Species mitigation site to a pre-disturbance state. Active restoration may be required to control exotic species and/or reestablish native vegetation. SDG&E will ensure that the appropriate annual contingency funds are included as part of an endowment for any habitat management plans developed for a given mitigation site to respond to invasive species. Land manager responses could include, but are not limited to, monitoring of the mitigation site to determine whether a response is required, development of a strategy that supports the re-growth of habitat and or suppression of invasive species and/or strategies to reduce potential for invasion by exotic species and/or habitat type conversion as outlined in the management plan for the site.

7.1.4 Climate Change

Climate change refers to a change in global or regional climate patterns that may be due to natural processes and persistent anthropogenic changes in the composition of the atmosphere, which is largely attributed to the increased levels of greenhouse gas emissions, primarily carbon dioxide, as a result of human industrialization (IPCC 2018). Climate change also is predicted to include secondary global impacts such as sea level rise and changing weather patterns.

Scientific modeling predicts that continued greenhouse gas emissions at or above current rates would induce more extreme climate changes during the 21st century than

were observed during the 20th century. Human activities are estimated to have caused approximately 1.0 degrees Centigrade (°C) of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C. Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate (IPCC 2018). According to the Indicators of Climate Change in California 2018 Report, potential impacts of climate change in California may include loss of snowpack (which serves as water storage), sea level rise, extreme heat events, more wildfires, and drought conditions (OEHHA 2018).

Current global and regional trends suggest that climate change is likely to affect the mitigation area lands. The study area falls within the southwestern California ecoregion. As detailed in the 2018 San Diego County Ecosystems: The Ecological Impacts of Climate Change on a Biodiversity Hotspot, in the near term, ecosystems in the region will be most threatened by landscape changes, disturbances, and fragmentation due to development and fire. In the longer term, climate variability will compound those stressors with significantly warmer temperatures, more variable precipitation regimes resulting in occasional high intensity flooding and more frequent and prolonged droughts, and more destructive fires due to drought and increased ignitions/fuel availability (Climate Science Alliance 2018).

As such, a number of ecological responses to climate change could occur in the mitigation areas. For example, the general increase in mean annual temperatures could cause species range shifts and novel assemblages, such as narrowly endemic, gabbro-associated plants experiencing unsuitable temperatures where suitable soil conditions exist. The increase in frequency and severity of heat waves may lead to increased mortality and decreased reproductive success (e.g., potential for exceeding thresholds for some species like the California spotted owl (*Strix occidentalis occidentalis*) with known temperature thresholds. The increase in spring drying has the potential to affect biomass leading to decreased reproductive success for species that breed in aquatic systems (e.g., arroyo toad). The increase in precipitation variability may impact ephemeral and riparian environments causing less stabilizing vegetation and increased erosion. The increase in droughts may lead to potential structural shifts in ecosystems. Additionally, the increase in fire frequency may lead to higher type conversion to nonnative grasses, causing reduced habitat for shrubland species like the coastal California gnatcatcher. Climate warming superimposed upon the pronounced spatially varying temperature in the San Diego region will likely be associated with range shifts for many species resulting in novel community assemblages and biotic interactions (Climate Science Alliance 2018).

Risk Assessment

Overall, climate change can reasonably be expected to influence the ecological response of Covered Species over the permit term. The magnitude of these changes and the specific changes remain uncertain.

Preventative Measures

The effects of climate change are being addressed through the closely related preventative responses to changed circumstances of fire, drought, and invasive species.

Remedial Responses

The effects of climate change are being addressed through the closely related remedial responses to changed circumstances of fire, drought, and invasive species.

7.1.5 Diseases and Pathogens

Diseases and pathogens could occur in or be introduced into the mitigation areas, subsequently reducing or affecting the quality of the habitat for Covered Species. Management plans developed for mitigation lands will include measures to prevent such occurrences or introductions, although additional measures may be needed. New diseases and pathogens spreading throughout the Plan Area within the permit term is a foreseeable event.

At the first sign of a disease or pathogen (e.g., amphibian deaths, or dead and dying trees and shrubs), the land manager will seek to identify the disease or pathogen. Most infestations will be considered changed circumstances. However, if, despite a land manager complying with all applicable disease and pathogen control requirements and using all feasible methods to control a disease and pathogen, a disease or pathogen spreads beyond a level that can effectively be controlled (e.g., it cannot be controlled on a County-wide or region-wide basis), it would be considered an unforeseen circumstance beyond the scope of the Subarea Plan, and the land manager would not be required to implement remedial actions to address the event.

Risk Assessment

Although diseases or pathogens may currently be present within a mitigation site, an unexpected and/or sudden increase in certain diseases or pathogens may create the potential for impacts to Covered Species, which could have a significant adverse effect on Covered Species within the mitigation site. Opportunities for increases in diseases or pathogens could occur as urban development expands in areas surrounding a mitigation site. In addition, the occurrence of a catastrophic event, including Changed Circumstances, may precipitate sudden increases of diseases or pathogens.

Preventative Measures

Any management plan approved by USFWS used to establish a mitigation site will include measures to reduce the opportunity for invasion by diseases or pathogens.

Remedial Measures

SDG&E will ensure that the appropriate amount of annual contingency funds is included as part of an endowment for any habitat management plans developed for a given mitigation site to respond to diseases or pathogens. Land manager responses could include, but are not limited to, monitoring of the mitigation site to determine whether a response is required, development of a strategy that supports the eradication and/or suppression of the disease or pathogen, and/or development strategies to reduce potential for invasion by diseases or pathogens as outlined in the management plan for the site.

7.2 Other Considerations

7.2.1 The New Listing of Species and Designation of Critical Habitat Not Covered by the HCP Amendment

Over the course of HCP Amendment implementation, USFWS may list as threatened or endangered under the ESA species, or designate critical habitats, that are not covered under the HCP Amendment. If a non-covered species becomes listed or new critical habitat is designated, SDG&E will take the following measures.

- The potential impacts of Covered Activities on the newly Listed Species and designated critical habitat will be evaluated, including an assessment of the presence of suitable habitat in impact areas.
- SDG&E will develop measures to avoid take (or jeopardy if the species is a plant) of the newly Listed Species, and to avoid destruction or adverse modification of newly designated critical habitat, until the HCP Amendment is amended to cover the species or address critical habitat or SDG&E complies with the ESA via other means (i.e., individual Section 7 consultations, etc.).

Should a species not covered by the HCP Amendment be listed, proposed, or petitioned for listing, SDG&E may request that USFWS add the species to the Section 10(a)(1)(B) permit. In determining whether to seek incidental take coverage for the species, SDG&E will consider, among other things, whether the species is present in the Plan Area and if otherwise lawful activities could result in incidental take of the species. If incidental take coverage is desired, the HCP Amendment and take authorizations could be amended. Alternatively, SDG&E could apply for a new and separate permit. Procedures for amendments to the HCP Amendment are outlined in Section 6.5.

7.2.2 Regulatory Assurances

SDG&E has prepared the HCP Amendment anticipating a standard, consistent, and cost-effective way of complying with the federal ESA. The federal No Surprises Regulation was established by the Secretary of the Interior on March 25, 1998. It provides assurances to Section 10 permit holders that no additional money, commitments, or restrictions of land or water will be required should unforeseen

circumstances requiring additional mitigation arise once the permit is in place. The No Surprises Regulation states that if a Permittee is properly implementing an HCP Amendment that has been approved by USFWS, no additional commitment of resources, beyond that already specified in the plan, will be required. SDG&E requests regulatory assurances (No Surprises) for all Covered Species in the Plan. In accordance with No Surprises, SDG&E will be responsible for ensuring the implementation and funding of remedial measures in response to any changed circumstances as described in this section. SDG&E will not be obligated to address unforeseen circumstances but will work with USFWS to address them within the funding and other constraints of the HCP Amendment should they occur. SDG&E understands that No Surprises assurances are contingent on the proper implementation of the permits and HCP Amendment.

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8 Alternatives

Within its service area, the demands of customers for electric power and natural gas are met by SDG&E. As a public utility, SDG&E is required by Public Utilities Code Section 451 to provide these utility services in a safe and reliable manner. The CPUC has the authority under Public Utilities Code Sections 701, 761, and 762 to require public utilities to establish and maintain the Facilities and property rights that are necessary to provide safe and reliable service. In addition, SDG&E sets corporate goals in an effort to attain the highest quality and dependability of service at the lowest rates it can achieve.

These customer demands, legislative mandates, regulatory controls, and corporate goals require that SDG&E install new Facilities necessary to meet the growing demands of its customers, and that such new Facilities and all existing Facilities be adequately maintained and repaired to ensure safety and reliability. The HCP Amendment addresses such installation, operation, maintenance, and repair Covered Activities and their potential to impact Covered Species or their habitat.

Section 10(a)(2)(A)(iii) of the federal ESA and 50 C.F.R. 17.22(b)(1)(iii) and 17.32(b)(1)(iii) require that an HCP Amendment specify alternatives to the taking of species that the applicant considered and the reasons why such alternatives are not proposed to be utilized. The curtailment of any aspect of the Covered Activities would render SDG&E's public utility services, to a greater or lesser extent, inadequate to meet demand, inefficient, unsafe, and unreliable.

An alternative to the HCP Amendment would be to have no amendment to the 1995 Subregional Plan. The no HCP Amendment alternative would mean that the permanent impact cap would not increase by 400 acres and the 210-acre temporary impact cap and 210-acre Wildfire Fuels Management impact cap would not be created. Covered Activities described in the Subregional Plan, however, would remain subject to take prohibitions of ESA. ITPs would be required for such Covered Activities on a project-by-project and species-by-species basis once the impact cap is reached (currently estimated in 2023), including for fire hardening and other wildfire mitigation work. The case-by-case process of permitting is cumbersome, time consuming, and unnecessarily resource intensive for SDG&E, USFWS, and stakeholders. It would delay critically needed O&M and development of new Facilities to maintain SDG&E Facilities to serve the public good. The HCP Amendment addresses such issues from an ecosystem or habitat basis, wherein such protections or conservation measures are affected, whether or not defined, as a functioning aspect or part of the protected and covered ecosystem or habitat. Because the HCP Amendment provides comprehensive multiple species and habitat conservation, and is not limited to Listed Species, it provides a net benefit to the environment in that it protects and conserves species in a manner that may prevent any future listing of such species. In addition, the HCP Amendment provides SDG&E with long-term predictability concerning the nature of its operations for which takings are

permitted, avoiding cumbersome procedures and potential Facility compromising delays.

SDG&E also considered an alternative that would retain all species covered in the original HCP Amendment and no additional species, regardless of whether these species were likely to be affected by Covered Activities or their status under law and leave protective protocols unchanged. Under this alternative, SDG&E would need to devote resources to cover species that were abundant and not in need of conservation, and that were unlikely to encounter yearly habitat disturbance that was dispersed, decentralized, difficult to monitor, and unlikely to result in take of species. In addition, SDG&E would not add any of the Species-Specific Protocols that are anticipated to provide additional robust conservation value to Covered Species. This alternative was considered but ultimately rejected because it did not provide any additional protections to listed and vulnerable species, it increased administrative burdens, and it diverted finite resources from species that would benefit from maintained or increased conservation efforts.

9 Funding

9.1 Cost to Implement the SDG&E HCP Amendment

The HCP Amendment will be funded through SDG&E's gas and electricity rates as authorized and regulated by the CPUC and FERC for the ongoing operation, maintenance, and construction of Facilities (see Section 9.2). The costs of implementing all aspects of the HCP Amendment such as administrative costs for reporting and tracking to costs associated with the R/E Program are typically included as a part of capital or O&M project. All appropriate avoidance, minimization, or mitigation measures as prescribed in the HCP Amendment will be integrated within each project's design and budget.

SDG&E has provided the average annual costs for implementing the Subregional Plan in Sections 9.1.1 and 9.1.2 below. These averages were estimated based on 4 years of data (2016–2019). SDG&E has also spent \$7,858,237 on Mitigation Credit purchases associated with the Subregional Plan (1995 original purchase and Cielo B in 2015).

9.1.1 Administrative Costs

Administrative costs associated with implementing the HCP Amendment include but are not limited to staff review and support of projects covered by the HCP Amendment during the planning, design and construction phases, agency coordination, Annual Report preparation, and consultant support with implementing the Subregional Plan. Based on a review of labor cost data and cost for consultant support for the last 4 years (2016–2019), SDG&E estimates an average of \$313,234 is spent per year on administrative costs in support of the Subregional Plan.

9.1.2 HCP Amendment Implementation Costs

In addition to administrative costs, SDG&E also incurs costs to implement the HCP Amendment, which include but are not limited to costs for preparing PSRs, implementing avoidance and minimization measures (such as nesting bird surveys, biological monitoring, and training), and implementing the R/E Program. The annual costs for implementing the Subregional Plan vary each year based on multiple factors such as the volume of projects that are covered by the Subregional Plan, complexity of the projects, and current consulting fees and negotiated contract rates. Based on a review of 3.5 years of data (June 2016– December 2019), SDG&E estimates an average of \$1,130,884 is spent per year implementing the Subregional Plan. This estimate excludes projects that were separately analyzed pursuant to CEQA/NEPA. While projects that require additional CEQA/NEPA permitting may also utilize the HCP Amendment, these projects typically have increased cost associated with licensing/permitting, and environmental constraints including additional compensatory mitigation for various resource areas. SDG&E accounting practices cannot separate out the costs

for the additional CEQA/NEPA requirements from the HCP Amendment requirements; therefore, these projects could not be used in developing the estimated annual average of the HCP Amendment implementation.

9.1.3 Mitigation Costs

The HCP Amendment estimates approximately 400 acres of permanent impact, and 210 acres of Wildfire Fuels Management impact, over the remaining permit term. Mitigation requirements vary between habitat-based (Tables 5.3a and b) mitigation and species-specific (Table 5.4) mitigation. Estimated cost for habitat-based and species-specific mitigation is summarized in Table 9.1.

Projected mitigation acreage requirements were based on the estimated acres of impact identified in the Covered Species Analysis (Appendix A) and mitigation ratios identified in Tables 5.3a and b and Table 5.4. Species impact estimates in the Covered Species Analysis are based on Modeled Habitat and, therefore, species-specific mitigation acreage requirements are expected to be lower because only known or assumed occupied habitat will be mitigated as detailed in the Species-Specific Protocols in Section 5.1.13. For example, the Covered Species Analysis estimated approximately 53 acres of impacts to Modeled Habitat for burrowing owl across the entire Plan Area. However, in-kind mitigation is only required for impacts to known or assumed occupied BUOW-Habitat.

Table 9.1 SDG&E Estimated Mitigation Costs for Habitat-Based and Species-Specific Impacts (without inflation)

Resource	Estimated Impact (Acres) ¹	Habitat Preserved through Mitigation (Acres) ²	Cost/Acre (including endowment)	Projected Mitigation Cost (remaining permit term)
Habitat Based	14.59	29.18	\$20,000	\$583,600
Vernal Pool	0.64	1.92	\$350,000	\$672,000
Stephens' Kangaroo Rat	18.44	36.88	\$50,000	\$1,844,000
Pacific Pocket Mouse	1.5	In-Lieu Fee	In-Lieu Fee	\$150,000
Light-footed Ridgway's Rail	2.52	7.56	\$475,000	\$3,591,000
Laguna Mountains Skipper	0.11	0.33	\$65,000	\$21,450
Hermes Copper Butterfly	148.85	446.55	\$20,000	\$8,931,000
Burrowing Owl	53.34	106.68	\$50,000	\$5,334,000
Cactus Wren	89.13	178.26	\$35,000	\$6,239,100
Southwestern Willow Flycatcher, Western Yellow-billed Cuckoo	26.11	78.33	\$30,000	\$2,349,900
Arroyo Toad	9.62	19.24	\$30,000	\$577,200
Tricolored Blackbird	35.15	70.3	\$50,000	\$3,515,000
Wildfire Fuels Management	210	210	\$20,000	\$4,200,000
			Total	\$38,008,250

¹ Species estimates based on projected impacts in the Covered Species Analysis (Appendix A). Habitat-based impacts adjusted so that permanent impacts total 400 acres after accounting for species impacts.

² Projected mitigation requirements are based on the mitigation ratios in Tables 5.3a and b and Table 5.4. Habitat-based mitigation assumed a worst-case scenario of 2:1 to be conservative.

SDG&E collected and reviewed data from planners and mitigation bankers to estimate cost per acre for mitigation land. Land acquisition and endowment cost will vary depending on the location and species impacted. More specialized habitat requirements, such as marsh and vernal pool, will cost more than general upland habitat. The numbers in Table 9.1 provide a reasonable estimate based on the estimated impact acres. To be conservative, the estimated costs were not reduced to account for Mitigation Credits/lands that SDG&E already owns. As discussed in Section 5.5, SDG&E has purchased 354 acres of Mitigation Credits of high-quality habitat that will be conserved in perpetuity. SDG&E estimated at the end of 2020, approximately 100 acres of Mitigation Credit remained and would continue to be utilized to mitigate for impacts associated with Covered Activities.

SDG&E will ensure that during the remaining permit term of the incidental take authorizations, the available Mitigation Credits will be sufficient to satisfy at least 2 years of projected impacts and associated mitigation obligation. If the available Mitigation Credits would be reduced to below the estimated need, SDG&E would either obtain additional credits in coordination with USFWS through (1) land acquisition as detailed in Section 5.5.2, or (2) alternative means detailed in Section 5.5.3.

As discussed in Section 5.5.3, alternative mitigation strategies may be used in lieu of land acquisition. The cost to implement those alternative approaches is assumed to be around the same costs of land acquisitions. Table 9.2 provides an estimate of how mitigation expenditures will be allocated over the remaining permit term. Proportional expenditures are likely to change as the conservation needs of Covered Species in the HCP Amendment evolve through 2050.

Table 9.2 Estimated Mitigation Expenditure Allocation

Mitigation Approach	Percent of Total Estimated Mitigation	Estimated Amount (remaining permit term)
Land Acquisition	10%	\$3,800,825.00
Restoration/Enhancement in the Plan Area	15%	\$5,701,237.50
Conservation Organization Donation	2%	\$760,165.00
Alternative Mitigation Funds	50%	\$19,004,125.00
Recovery Plan Contribution	2%	\$760,165.00
Secure Conservation Easements on SDG&E Land	1%	\$380,082.50
Conservation/Mitigation Bank Purchases	20%	\$7,601,650.00
Total	100%	\$38,008,250.00

9.2 Funding Sources

SDG&E has the financial capacity and commits to fully fund costs of the HCP Amendment implementation as outlined above through its gas and electricity rates. Collection of these rates is authorized and regulated by the CPUC and FERC for the

ongoing operation, maintenance, and construction of Facilities. The regulation of rates is administered through a CPUC General Rate Case (GRC) proceeding that takes place every 3 to 4 years. The approval of the GRC sets the revenue requirement, allowed rate of return, and capital budget that collectively work together in determining the rates to be collected by ratepayers in order to cover costs and generate a profit for shareholders. Having a set rate of return (7.55% return on assets) ensures that SDG&E is able to raise sufficient capital to make improvements to its infrastructure and provide reliable service to all customers.

SDG&E meets its funding requirements through cash flows from operations, unrestricted cash and cash equivalents, and borrowings under credit facilities. We believe that these cash flow sources, combined with available funds, will be adequate to fund our current operations, including the ability to finance future capital expenditures, including expenditures related to the ongoing funding of the HCP Amendment.

9.3 Adequacy of Funding

Funding requirements must be guaranteed in order for the HCP Amendment to be implemented. Therefore, SDG&E must demonstrate financial assurance that will constitute such a guarantee. Financial assurance is evidenced by a long track record of stable operating revenues and profitable operations.

In 2019, SDG&E generated operating revenues of \$4,925 million and earnings of \$767 million. The financial solvency of SDG&E is further evidenced by a tangible net worth of \$5.9 billion as of December 31, 2019.

SDG&E is projecting to spend \$2 billion on capital expenditures in 2020 and expects to make capital expenditures of approximately \$8.9 billion through 2024.

SDG&E's operations have historically provided stable earnings and liquidity. Table 9.3 reflects net earnings and operating performance of SDG&E since 2010.

Table 9.3 SDG&E Net Earnings and Operating Performance (million dollars)

Year	Operating Revenues	Net Income	Capital Expenditures
2019	4,925	767	1,210
2018	4,568	669	1,831
2017	4,476	407	1,237
2016	4,253	570	978
2015	4,219	587	1,100
2014	4,329	507	1,133
2013	4,066	404	1,399
2012	3,694	484	1,522
2011	3,373	431	1,542
2010	3,049	369	1,555

SDG&E has maintained an investment grade credit rating for many years. The investment grade credit ratings enable access to the long-term debt markets and allow the Company to borrow at reasonable rates. While SDG&E does not anticipate needing to borrow from external sources to fund the HCP Amendment, it is nonetheless important to point out that our investment grade debt ratings provide a source to funding that would be adequate to implement the HCP Amendment for the duration of the remaining term. Below are the credit ratings as of December 31, 2019.

- Moody's Baa1 Positive
- S&P BBB+ Stable
- Fitch BBB+ Stable

SDG&E's operating performance in terms of strong and stable revenues and consistent profitability coupled with substantial tangible net worth and investment grade credit ratings provides adequate financial assurance that SDG&E has the financial capacity to fulfill the financial commitments with respect to the implementation of the HCP Amendment.

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10 Acknowledgments

The HCP Amendment was prepared over a 4-year period by SDG&E staff and consultants, with support from several outside entities. Any omission of names is not intentional.

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Appendix A

Covered Species Analysis for the HCP Amendment 2022

Appendix B

Eagle Conservation Plan

Appendix C

Peninsula Bighorn Sheep Evaluation

Appendix D

Species Considered for Coverage

Appendix E

SDG&E Vegetation Crosswalk

Appendix F

Habitat Type Crosswalk Relative to Groupings in Tables 4.5 and 4.6

Appendix G

Land Use Categories

Appendix H

Endangered Species Act Section 7 Compliance Templates
