This section describes the existing biological resources including the special-status species and sensitive habitats known to occur or that potentially occur in the Planning Area, the regulations and programs which provide for their protection, and an assessment of the potential impacts of implementing the proposed General Plan Update. This section also includes a discussion of mitigation measures necessary to reduce impacts to a less than significant level, where feasible.

4.10.1 EXISTING SETTING

For planning and mapping purposes, twelve biological communities have been identified within the Planning Area and are depicted on **Figure 4.10-1**. Dominant biological communities within the Planning Area include agriculture, annual grassland, blue oak savanna, blue oak woodland, chaparral, cottonwood-willow riparian, disturbed, dredger tailings, herbaceous riparian river bar, interior live oak woodland, mixed oak woodland, open water/riverine, ranchettes – open, ranchettes – wooded, urban, valley oak riparian, wetlands (including emergent wetland and vernal pool), and willow scrub. Each of the biological communities within the Planning Area, including common plant and wildlife species, is described further below. **Table 4.10-1** below outlines the acreages of each biological community found within the Planning Area. This information is derived from final land cover types (SAIC, 2008b) generated as part of the Butte Regional Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) process currently under way.

The biological communities depicted in **Figure 4.10-1** are being mapped as part of the Butte Regional HCP/NCCP process (SAIC, 2007, 2008a). Although discussed here as distinct entities, the biological communities are not functionally discrete; there are frequently large areas of transition, or ecotones. The distribution of general biological community types in the Planning Area is closely associated with varying topography and hydrology. Some biological communities may have a degree of shared vegetation. Animals also range between different communities and habitat types, and their movement patterns may vary daily or seasonally.

According to the Draft Ecological Baseline Report for the Butte Regional Habitat Conservation Plan/Natural Community Conservation Plan, all mapping was based on 2005 color orthorectified aerial photography with one-meter resolution (flown in summer or fall) (SAIC, 2007). Additional aerial photography was used to assist in the mapping effort, including February 2002 (two-meter resolution) and November 2006 (two-meter resolution). Reconnaissance-level visits, the Soil Survey of Butte County Area (NRCS, 2005), and the CDFG California Natural Diversity Database were used to support the land cover mapping, to establish mapping criteria, and to develop land cover type definitions. Classification systems predominantly incorporated and adapted for mapping communities included *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland, 1986), *A Manual of California Vegetation* (Sawyer and Keeler-Wolfe, 1995), and the Fire and Resource Assessment Program (FRAP)/California Wildlife Habitat Relationships System (CWHR). FRAP is used by the California Department of Forestry and Fire Protection (Cal-Fire) as a tool to assess California's forest and rangeland resources. CWHR is an extensive compilation of community-level information describing existing vegetation types important to wildlife.

TABLE 4.10-1
ACREAGE OF BIOLOGICAL COMMUNITIES WITHIN THE PLANNING AREA

Biological Communities	Acres
Within City Limits	
Agriculture	631.20
Annual Grassland	3,993.72
Blue Oak Savanna	614.77
Blue Oak Woodland	923.26
Chaparral	1,023.64
Cottonwood/Willow Riparian Forest	332.68
Disturbed	33.32
Dredger Tailings	18.60
Interior Live Oak Woodland	87.17
Mixed Oak Woodland	699.06
Open Water/Riverine	59.13
Ranchettes – Open	43.85
Ranchettes – Wooded	21.16
Urban	11,995.29
Valley Oak Riparian Forest	357.57
Wetlands	60.24
Willow Scrub	81.40
Total	**20,976.04**
Within the Sphere of Influence	
Agriculture	254.94
Annual Grassland	262.27
Blue Oak Savanna	129.36
Blue Oak Woodland	195.53
Chaparral	11.86
Cottonwood/Willow Riparian Forest	32.39
Disturbed	68.07
Dredger Tailings	50.41
Interior Live Oak Woodland	2.32
Mixed Oak Woodland	55.69
Open Water/Riverine	12.95
Ranchettes – Open	116.85
Ranchettes – Wooded	0.04

Biological Communities	Acres
Urban	2,582.11
Valley Oak Riparian Forest	77.37
Wetlands	22.64
Willow Scrub	16.28
Total	**3,891.10**
Within the Proposed Special Planning Areas	
Agriculture	542.31
Annual Grassland	1,043.29
Blue Oak Savanna	367.42
Blue Oak Woodland	251.81
Chaparral	27.62
Cottonwood/Willow Riparian Forest	118.46
Disturbed	93.64
Dredger Tailings	1.32
Interior Live Oak Woodland	39.79
Mixed Oak Woodland	145.94
Open Water/Riverine	0.01
Ranchettes – Open	80.73
Ranchettes – Wooded	0.14
Urban	145.70
Valley Oak Riparian Forest	4.89
Wetlands	1.73
Willow Scrub	0.22
Total	2,865.02
Within the Planning Area (outside City Limits, SOI, and SPA)	
Agriculture	31,229.63
Annual Grassland	7,574.28
Blue Oak Savanna	2,133.64
Blue Oak Woodland	9,331.79
Chaparral	912.04
Cottonwood/Willow Riparian Forest	2,043.68
Disturbed	255.97
Dredger Tailings	615.22
Herbaceous Riparian River Bar	151.71
Interior Live Oak Woodland	783.10
Mixed Oak Woodland	6,255.38

Biological Communities	Acres
Open Water/Riverine	424.05
Ranchettes – Open	452.02
Ranchettes – Wooded	837.59
Urban	2,299.42
Valley Oak Riparian Forest	736.79
Wetlands	105.11
Willow Scrub	266.23
Total	**66,407.67**
GRAND TOTAL	**94,139.83***

Source: SAIC, 2008b
* Approximately 6,638 acres are not included in the total Planning Area acreage of 100,778.80 acres due to data that is not available (see Figure 4.10-1). Any minor discrepancies ($\pm$ 1 acre) with total acreages are attributable to rounding errors.

While the mapping and acreages are derived from the Butte Regional HCP/NCCP process (SAIC, 2007, 2008a/b), the biological community descriptions below are derived from the following documents:

- City of Chico General Plan Master Environmental Assessment (City of Chico, 1999);
- City of Chico General Plan Update Existing Conditions Report (City of Chico, 2008); and
- Draft Ecological Baseline Report for the Butte Regional Habitat Conservation Plan/Natural Community Conservation Plan (SAIC, 2007).

Biological information regarding wildlife associations was also derived from the CWHR System (2002). This information is available online at http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx and is provided in *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer, 1988). Additional references are provided where necessary. Discussions on wildlife associations are not necessarily provided for each biological community, but are grouped by biological community type, such as oak woodlands/savanna and riparian communities.

Agricultural

The majority of agricultural land within the Planning Area consists of orchards, with irrigated croplands, irrigated pastures, seasonal range lands, and rice fields being the other uses. Most of these agricultural lands have associated irrigation and drainage ditches that connect via culverts and pipes to the area creeks. Agricultural lands cover approximately 32,658 acres within the Planning Area. Almonds, walnuts, and prunes are the major tree crops harvested in Butte County, while pears, apricots, oranges, peaches, olives, pistachio, and apples are also found (Butte County, 2008). Seven main field crops are found in Butte County including barley, oats, rice, wheat, alfalfa, corn, and irrigated pasture. Row crops include sugar beets, dry beans, and melons. Truck crops in Butte County include lettuce, cabbage, spinach, cauliflower, onions, and sweet corn (Butte County, 2008).

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Glenn County

Source: City of Chico GIS, 2007

Legend

- Proposed Sphere of influence
- Special Planning Area
- Planning Area
- Agriculture
- Annual Grassland
- Blue Oak Savanna
- Blue Oak Woodland
- Chaparral
- Cottonwood Willow Riparian Forest
- Disturbed Ground
- Dredger Tailings
- Herbaceous Riparian River Bar
- Interior Live Oak Woodland
- Mixed Oak Woodland
- Open Water/Riverine
- Ranchettes Open
- Ranchettes Wooded
- Urban
- Valley Oak Riparian Forest
- Wetlands
- Willow Scrub
- No Data

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Figure 4.10-1
Biological Communities

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Wildlife Associated with Agricultural Communities

Generally, orchards and agricultural habitats provide foraging and shelter for various wildlife species including amphibians, reptiles, small mammals, and various songbird species. Orchard habitats provide potential nesting opportunities for raptors, resident birds, and migratory bird species including loggerhead shrike (*Lanius ludovicianus*) and white-tailed kite (*Elanus leucurus*). Field and row crops typically provide little breeding habitat for wildlife due to the high level and frequency of disturbance; however, hay, grain, and row crops support abundant rodent populations and provide foraging habitat for Swainson's hawks (*Buteo swainsoni*). Agricultural lands that provide riparian habitats have the potential to support a few special-status wildlife species, such as the northern harrier (*Circus cyaneus*) and giant garter snake (*Thamnophis gigas*), which may use adjacent irrigation canals and freshwater marsh vegetation for foraging or breeding. Field edges, woodlots, and watercourses that support riparian habitat also provide breeding sites and refuge for prey species and other wildlife. Common wildlife species associated with agricultural lands include mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), yellow-billed magpie (*Pica nuttalli*), Brewer's blackbird (*Euphagus cyanocephalus*), greater sandhill crane (*Grus canadensis tabida*), egrets (*Egretta* or *Ardea* spp.), and various raptor species, including red-tailed hawk (*Buteo jamaicensis)*.

Annual Grasslands

The Planning Area contains approximately 12,874 acres of non-native grassland where non-native grasses and other annuals dominate this community. As stated in the Draft Ecological Baseline Report for the Butte Regional Habitat Conservation Plan/Natural Community Conservation Plan (SAIC, 2007a), some grassland communities contain vernal pools and vernal swales. Furthermore, some non-native grassland communities may contain small pockets of native annual grasses and forbs. Within Butte County, the majority of upland grasslands are valley grasslands, which are typically dominated by low-growing non-native annual grasses interspersed with diverse, patchily distributed native perennial grasses, non-native forbs, and native forbs. The vernal pools and vernal swales found within grasslands contain a unique and diverse vegetation assemblage and are discussed in a separate section below. Common plant species found in non-native annual grasslands include foxtail barley (*Hordeum leporinum*), soft chess (*Bromus hordeaceus*), wild oats (*Avena* spp.), ripgut brome (*Bromus diandrus*), red-stemmed filaree (*Erodium circutarium*), and yellow star thistle (*Centaurea solstitialis*). Common native species include California knotweed (*Polygonum californicum*), naked stemmed buckwheat (*Eriogonum nudum*), marigold navarretia (*Navarretia intertexta*), brodiaea (*Brodiaea* spp.) mariposa lily (*Calochortus* spp.), purple needlegrass (*Stipa pulchra*), pine bluegrass (*Poa scabrella*), and onion grass (*Melica imperfecta*).

Wildlife Associated with Annual Grasslands

Annual grasslands provide essential foraging and breeding habitat for many wildlife species. Certain habitat features within annual grassland, such as cliffs, caves, ponds, or woody plants, are important for some of these species; these habitat features are used for breeding, resting, or as escape cover. Common wildlife species found in the annual grassland community include western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis catenifer)*, common garter snake (*Thamnophis sirtalis*), western rattlesnake (*Crotalus viridis*), California vole (*Microtus californicus*), western harvest mouse (*Reithrodontomys megalotis*), black-tailed jackrabbit (*Lepus californicus*), coyote (*Canis latrans*), California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae)*, burrowing owl (*Athene cunicularia)*, savannah sparrow (*Passerculus sandwichensis)*, western meadowlark (*Sturnella neglecta)*, ring-necked pheasant

(*Phasianus colchicus)*, Swainson's hawk, turkey vulture (*Cathartes aura*), American kestrel (*Falco sparverius*), northern harrier, red-tailed hawk, and white-tailed kite.

Blue Oak Savanna

Approximately 3,245 acres of blue oak savanna occurs in association with the blue oak woodlands within the eastern foothill portions of the Planning Area. Blue oak savanna intergrades with both the blue oak woodland and annual grassland communities. Within this community, blue oaks (*Quercus douglasii*) are scattered throughout the savanna with canopy cover ranging from 10 to 40 percent. Canopies do not generally overlap, as blue oaks in the savanna are well spaced. Blue oak is the dominant tree with the occasional foothill pine (*Pinus sabiniana*) and interior live oak (*Quercus wislizenii*). Shrub cover is usually minimal and includes poison oak (*Toxicodendron diversilobum*), buck brush (*Ceanothus cuneatus*), redberry (*Rhamnus crocea*), and manzanita (*Arctostaphylos* spp.). The understory consists of annual grasses and forbs including wild oats, ripgut brome, hedgehog dogtail grass (*Cynosurus echinatus*), soft chess, and rattail fescue (*Vulpia myruros*).

Blue Oak Woodland

Blue oak woodlands cover approximately 10,702 acres within the Planning Area. Blue oak woodland occurs in the foothills and intergrades with blue oak savanna and annual grasslands. The blue oak woodlands within the Planning Area are characterized by a mature canopy dominated by blue oak with occasional interior live oak, valley oak (*Quercus lobata*), and foothill pine as associates. Tree canopy within the Planning Area ranges from approximately 40 to 100 percent. Dominant shrub species include manzanita, ceanothus (*Ceanothus* spp.), redberry, California coffeeberry (*Rhamnus californica*), poison oak, and California buckeye (*Aesculus californica*). The herbaceous understory consists of annual grasses and forbs including ripgut brome, soft chess, wild oats, hedgehog dogtail grass, rose clover (*Trifolium hirtum*), popcorn flower (*Plagiobothrys nothofulvus*), and brodiaea.

Mixed Oak Woodland

Approximately 7,156 acres of mixed oak woodlands occur at high and low elevations throughout the Planning Area on level to steep topography, with tree canopies exceeding 40 percent cover. At low elevations, species include valley oak, interior live oak, and blue oak. At higher elevations, mixed oak woodland includes blue oak, interior live oak, black oak (*Quercus kelloggii*), and canyon live oak (*Quercus chrysolepis*). Trees found in association with this community include foothill pine and Fremont's cottonwood (*Populus fremontii*). At lower elevations, trees can reach 50 feet or more in height. Shrub cover includes poison oak, buck brush, and blue elderberry (*Sambucus mexicana*). Herbaceous cover consists of annual grasses and forbs including ripgut brome, soft chess, wild oat, and vetch (*Vicia* spp.)

At higher elevations, trees within mixed oak woodlands average 25 to 30 feet in height and canopy cover can reach 100 percent. The shrub layer is typically dense to impenetrable and includes toyon (*Heteromeles arbutifolia*), California bay (*Umbrellularia californica*), manzanita, coffeeberry, buck brush, redbud (*Cercis occidentalis*), poison oak, squaw bush (*Rhus trilobata*), and California buckeye. The herbaceous layer is generally sparse and includes soft chess, ripgut brome, wild oat, red brome (*Bromus madritensis* ssp. *rubens*), brodiaea, various alliums (*Allium* spp.), various clovers (*Trifolium* spp.), goldback fern (*Pityrogramma triangularis*), and yellow star thistle. The mixed oak woodland community intergrades with blue oak woodland and annual grassland communities.

Interior Live Oak Woodland

Interior live oak woodlands cover approximately 912 acres within the Planning Area and occur at the upper elevations in association with the eastern foothills and canyons. The woodland canopy generally exceeds 40 percent cover and consists primarily of live oak and is associated with blue oak and foothill pine. The understory comprises shrub species including redberry, toyon, manzanita, coffeeberry, poison oak, and redbud. Herbaceous species include Italian rye grass (*Lolium multiflorum*), hedgehog dogtail grass, Dutchman's pipe (*Aristolochia californica*), bedstraw (*Galium aparine*), and field hedge parsely (*Torilis arvensis*).

Wildlife Associated with Oak Woodlands and Savanna

In California, oak woodland and savanna is one of the most biologically diverse communities, providing habitat for approximately 2,019 plant, 5,000 insect, 80 amphibian and reptile, 160 bird, and 80 mammal species (Merenlender and Crawford, 1998). Oak woodlands are considered important habitats because of their high value to wildlife in the form of nesting sites, cover, and food (Ritter, 1988). Both oak woodlands and savannas provide abundant nesting, roosting, and cover opportunities for wildlife species in association with grassland foraging habitats. These communities also support decadent trees that provide abundant cavities that provide nesting sites for birds and foraging opportunities for insect-eating birds. Oak trees are particularly valuable because of the production of acorns, which are an abundant high-quality food for many birds and mammals. Downed wood from oak trees also provides food and cover for a variety of arthropods, fungi, and wildlife species (Standiford, McCreary, and Purcell, 2002).

Common wildlife associated with oak woodland and savanna communities within the Planning Area include western fence lizard, common kingsnake (*Lampropeltis getulus*), Columbian black-tailed deer (*Odocoileus hemionus columbianus*), western gray squirrel (*Sciurus griseus*), big brown bat (*Eptesicus fuscus*), pallid bat (*Antrozous pallidus*), cottontail (*Sylvilagus audubonii*), acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker (*Picoides nuttallii*), Pacific slope flycatcher (*Empidonax difficilis*), barn owl (*Tyto alba*), great horned owl (*Bubo virginianus*), wild turkey (*Meleagris gallopavo*), California quail (*Lophortyx californicus*), western scrub jay (*Aphelocoma californica)*, yellow-billed magpie (*Pica nuttalli*), tree swallow (*Tachycineta bicolor*), oak titmouse (*Baeolophus inornatus*), house wren (*Troglodytes aedon*), western bluebird (*Sialia mexicana*), and many other reptile, mammal, and bird species. Special-status wildlife species that may occur in these community types include valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), western spadefoot toad (*Spea hammondii*), Cooper's hawk (*Accipiter cooperii*), golden eagle (*Aquila chrysaetos*), and Townsend's big-eared bat (*Corynorhinus townsendii*).

Chaparral

Various forms of chaparral are present at the upper limit of the occurrence of oak-dominated communities. Although chaparral is not a covered natural community in the HCP/NCCP (SAIC, 2007), because oak-dominated communities form a mosaic with chaparral, it is necessary to include chaparral as a land cover type. The Planning Area includes approximately 1,975 acres of chaparral. Described herein is mixed chaparral, which is a structurally homogeneous brushland type dominated by shrubs with thick, stiff, heavily cutinized evergreen leaves.

Generally, mixed chaparral occurs on steep slopes and ridges with relatively thin, well-drained soils. At maturity, cismontane mixed chaparral typically is a dense, nearly impenetrable thicket with greater than 80 percent absolute shrub cover (England, 1988). Considerable leaf litter and standing dead material may accumulate in stands that have not burned for several decades

(England, 1988). Common wildlife species include spotted towhee (*Pipilo maculatus*), California quail, western scrub jay, western fence lizard, and western rattlesnake (England, 1988).

Cottonwood-Willow Riparian

Cottonwood-willow riparian woodland occurs at several locations throughout the Planning Area and covers approximately 2,527 acres including the Teichert Ponds adjacent to State Route 99, Lindo Channel, and the floodplain of Butte Creek. Where this community occurs, annual inundation and a high water table support Fremont's cottonwood, which is the dominant tree. Associate species include sandbar willow (*Salix exigua*), Goodding's willow (*Salix gooddingii*), and arroyo willow (*Salix lasiolepis*). Common herbaceous plant species include California mugwort (*Artemisia douglasiana*), barnyard grass (*Echinochloa crusgalli*), deer grass (*Muhlenbergia rigens*), ripgut brome, dallis grass (*Paspalum dilatatum*), prickly lettuce (*Lactuca serriola*), and bedstraw. Some non-native species found in this community include Chinese pistache (*Pistacia chinensis*), tree-of-heaven (*Ailanthus altissima*), firethorn (*Pyracantha angustifolia*), silk tree (*Albizia julibrissin*), and catalpa (*Catalpa speciosa*). The cottonwood-willow riparian community intergrades with other floodplain habitats including willow scrub and emergent wetland.

Valley Oak Riparian

The valley oak riparian community covers approximately 1,177 acres of the Planning Area and occurs in conjunction with several seasonal and perennial creeks and streams. This community is dominated by mature stands of valley oak with other associate trees including Fremont's cottonwood, California black walnut (*Juglans hindsii*), and western sycamore (*Plantanus racemosa*). The understory is dense and multilayered and includes Oregon ash (*Fraxinus latifolia*), Goodding's willow, sandbar willow, arroyo willow, and wild grape (*Vitus californica*). Other riparian species include Himalayan blackberry (*Rubus discolor*), California blackberry (*Rubus ursinus*), Dutchman's pipe, button willow (*Cephalanthus occidentalis*), blue elderberry, white alder (*Alnus rhombifolia*), and box elder (*Acer negundo*). Valley oak riparian integrades with cottonwood riparian, willow scrub, and mixed riparian communities. Where this community occurs near urban areas, non-native species are common and include tree-of-heaven, Chinese pistache, periwinkle (*Vinca major*), Algerian ivy (*Hederia canariensis*), silk tree, and silver maple (*Acer saccharinum*).

Dredger Tailings

Dredger tailings are characterized by excessively uneven ground, typically in a regular pattern of long mounds and depressions with numerous ponds, clumps of riparian vegetation, and unvegetated ground. Approximately 686 acres of dredger tailings occur within the Planning Area. They typically occur along drainages, and riparian cover categories predominate upstream and downstream.

Herbaceous Riparian River Bar

Herbaceous riparian and river bar occurs along major streams and rivers. The Planning Area contains approximately 152 acres of this community. Generally, these are areas that have been scoured recently, resulting in low cover of vegetation; however, they are sufficiently elevated to be above the low flow water level.

Willow Scrub

There are approximately 364 acres of willow scrub within the Planning Area. Willow scrub occurs within the floodplains of many creeks and streams flowing through the Planning Area where Goodding's willow, arroyo willow, and sandbar willow occur as dense stands approaching 100 percent coverage and up to 20 feet in height. Associate tree species include box elder, valley oak, Fremont's cottonwood, English walnut (*Juglans regia*), and California black walnut. The understory is nonexistent to sparse and consists of field hedge parsley, bedstraw, creeping wild rye (*Leymus triticoides*), Himalayan blackberry, California blackberry, and California mugwort. The willow scrub community intergrades with freshwater emergent wetland, other riparian communities, and on drier sites, with annual grassland communities.

Wildlife Associated with Riparian Communities

The diverse and complex vegetation and vegetative structure present in riparian communities provides habitat for over 225 birds, mammals, and reptiles in California (Riparian Habitat Joint Venture, 2004). Riparian forest habitat provides food, water, and migration and dispersal corridors, as well as escape, nesting, and thermal cover for many wildlife species. The multistratified vegetative structure present in woody riparian communities plays a major role in the high species diversity found in these communities. Riparian systems function as important wildlife movement corridors, providing habitat connectively along major drainages within the Planning Area. Significant riparian resources in the Planning Area occur along Butte Creek, Big Chico Creek, and several other smaller drainages. Common species found within riparian communities in the Planning Area include great egret (*Andrea alba*), great blue heron (*Ardea herodias)*, Nuttall's woodpecker, scrub jay, oak titmouse, California towhee (*Pipilo crissalis*), Anna's hummingbird (*Calypte anna*), wrentit (*Chamaea fasciata*), western gray squirrel, and many other species. Riparian communities also support numerous special-status species such as valley elderberry longhorn beetle, Swainson's hawk, Cooper's hawk, western yellow-billed cuckoo *(Coccyzus americanus occidentalis),* yellow-breasted chat (*Icteria virens)*, yellow warbler (*Dendroica petechia)*, and ringtail (*Bassariscus astutus)*.

Open Water/Riverine

The approximately 496 acres of open water habitats within the Planning Area include man-made ponds and lakes. Vegetation in this community is highly variable and includes cattail (*Typha latiofolia*), pond weed (*Potamogeton* spp.), elodea (*Elodea* spp.), duckweed (*Lemna* spp.), azolla (*Azolla* spp.), and parrot's feather (*Myriophyllum aquaticum*). Open water habitats intergrade with emergent wetlands and some riparian communities.

Riverine habitats described herein include perennial and intermittent riverine habitats. Perennial riverine habitats are described as lower and upper depending on position within the Planning Area. Lower perennial riverine habitat occurs along Butte Creek, Comanche Creek, Little Chico Creek, and Big Chico Creek (downstream from Manzanita Avenue). These drainages have low water velocities, well-developed floodplains, and perennial flows. Common plant species include cattail, California tule (*Scirpus californicus*), cut-grass (*Leersia oryzoides*), water primrose (*Ludwigia palustris*), northern willow herb (*Epilobium ciliatum*), and waterwort (*Elatine californica*). Riparian communities are common along lower perennial riverine habitats.

Upper perennial riverine habitats are found along the upstream portions of Butte Creek, Little Chico Creek, and Big Chico Creek and are associated with steep gradients, high water velocities, narrow floodplains, and perennial flows. These habitats are associated with willow scrub, emergent wetland, and occasionally riparian communities.

Intermittent riverine habitats include minor and major drainages throughout the Planning Area and convey seasonal flows, usually only during the wet season. Vegetation is highly variable in these habitats. Drainages mapped as intermittent riverine in the Planning Area include Lindo Channel, Rock Creek, Keefer Slough, Mud Creek, Sycamore Creek and the Sycamore Creek Diversion, and Little Chico Creek-Butte Creek Diversion.

Common vegetation found along the larger drainages include western sycamore, Fremont's cottonwood, valley oak, mulefat (*Baccharis salicifolia*), willows, Mormon tea (*Ephedra* spp.), California brickellbush (*Brickellia californica*), redbud, and blue elderberry. Seasonal vegetation includes Italian rye grass, triple awn (*Aristidia* spp.), dense flowered spike-primrose (*Epilobium densiflora*), deer grass, glandular hareleaf (*Lagophylla glandulosa*), and spurge (*Euphorbia* spp.). Woody vegetation is largely absent from minor drainages. Seasonal vegetation found in the smaller drainages include coyote thistle (*Eryngium vaseyi*), loostrife hedge hyssop (*Lythrum hyssopifolia*), mullugo (*Mollugo verticillata*), cocklebur (*Xanthium strumarium*), vinegar weed (*Trichostema lanceolatum*), monkey flower (*Mimilus pilosa*), spike rush (*Eleocharis macrostachya*), pepperwort (*Marsilea vestita*), curly dock (*Rumex crispus*), and Mediterranean barley (*Hordeum marinum* ssp. *gussonianum*).

Wildlife Associated with Open Water and Riverine Communities

Open water and riverine communities are valuable to wildlife due to the diversity of habitat elements such as pool and riffle complexes, exposed banks, and variable stream structure. A variety of native and non-native fish inhabit the open water and riverine communities within the Planning Area. The Big Chico drainage basin within the Planning Area supports native Chinook salmon (*Oncorhynchus tshawytscha*) (Central Valley spring-run and fall-/late fall-run), steelhead and rainbow trout (*Oncorhynchus mykiss*), Sacramento pikeminnow (*Ptychocheilus grandis*), California roach (*Lavinia symmetricus*), Sacramento sucker (*Catostomus occidentalis*), hardhead (*Mylopharodon conocephalus*), riffle sculpin (*Cottus gulosus*), and Pacific lamprey (*Lampetra tridentata*), and non-native species including smallmouth bass (*Micropterus dolomieu*), green sunfish (*Lepomis cyanellus*), and brown trout (*Salmo trutta*) (Big Chico Creek Watershed Alliance, 2007).

While some species are primarily aquatic, adjacent uplands are also used for a portion of their life history, such as western pond turtle (*Emys marmorata*), giant garter snake, and Pacific treefrog (*Hyla regilla)*. Other species dependent on aquatic habitats, but generally found only where these habitats occur in association with certain upland habitat types, such as riparian woodlands, include belted kingfisher (*Cerle alcyon*), wood duck (*Aix sponsa*), great blue heron, green-backed heron (*Butorides striatus*), mallard (*Anas platyrhynchos*), ruddy duck (*Oxyura jamaicensis*), river otter (*Lutra canadensis*), muskrat (*Ondatra zibethicus*), and beaver (*Castor canadensis*).

Disturbed

Disturbed ground consisted of areas that have been recently graded, including mining sites and landfills. They occur in various locations throughout the Planning Area and total approximately 451 acres. Areas that were clearly graded for new residential, commercial, or industrial development were mapped as urban.

Ranchettes – Open

Non-wooded ranchettes generally occur in the valley bottom in predominantly agricultural areas or between agricultural areas and urban areas. The Planning Area includes approximately

694 acres of open ranchettes. They are characterized by housing and small farms. Development comprises more than 20 percent of the cover in this land cover type. Small (less than 10 acres) inclusions of irrigated agriculture and orchards are common.

Ranchettes – Wooded

Approximately 859 acres of wooded ranchettes occur in areas otherwise mapped as oak woodlands. Generally they consist of development and sometimes landscaping surrounding houses that are scattered within the woodland. Development comprises greater than 20 percent of the cover in this land cover type. In cases with widely separated ranchettes, minimal landscaping, or other mechanical disturbance of the understory, the ranchettes are mapped in the greater oak woodland category.

Urban

Approximately 17,023 acres have been designated as urban within the Planning Area, including areas designated as park. Urban communities are characterized by residential and commercial developments that generally include structures, roadways and other hardscape, remnant mature native trees, and ornamental landscaping. Park communities are integrated into the urban community and include designated open space areas that are predominantly landscaped. Typical landscape species in the urban community are generally non-natives such as junipers (*Juniperus* spp.), roses (*Rosa* spp.), Bradford pear (*Pyrus callereyana* 'Bradford'), crepe myrtle (*Lagerstroemia indica*), weeping willow (*Salix babylonica*), oleander (*Nerium oleander*), and English ivy (*Hedera helix*). Common urban street trees within the Planning Area include California black walnut, Chinese pistache, liquidamber (*Liquidamber styraciflua*), eucalyptus (*Eucalyptus* spp.), London plane (*Plantanus acerifolia*), olive (*Olea europaea*), and tulip tree (*Liriodendron tulipifera*). Mature native valley oaks are scattered throughout the Planning Area, including on urbanized lands. Ruderal habitats within vacant lots are generally dominated by species such as yellow star thistle, prickly lettuce, flax-leaved flea bane (*Conyza bonariensis*), and non-native grasses including soft chess, ripgut brome, and foxtail barley. Vegetation within park communities largely consists of turf with occasional non-native tree species similar to those found in urban habitats. Park areas include portions of Bidwell Park vegetated with native species such as Valley oak, California black walnut, Oregon ash, and western sycamore. Parks can include golf courses, playing fields, and baseball and softball diamonds.

Wildlife Associated with Urban (Disturbed) Communities

Many common wildlife species have become adapted to utilize urban and park areas for foraging, shelter, and breeding habitat. These species readily adapt to tolerate human disturbance and to non-native vegetation. Species associated with urban and park areas within the Planning Area include mockingbird (*Mimus polyglottos*), scrub jay, house finch (*Carpodacus mexicanus*), European starling (*Sturnus vulgaris*), lesser goldfinch (*Carduelis psaltria*), house sparrow (*Passer domesticus*), western gray squirrel, California ground squirrel, rock dove (*Columba livia*), mourning dove (*Zenaida macroura*), American crow, Brewer's blackbird (*Euphagus cyanocephalus*), sandhill crane (*Grus canadensis*), various raptor species, egrets, and many species of rodents. A few other species that may be found, particularly in park areas, include raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), Pacific treefrog, and western toad (*Bufo boreas*).

Wetlands

Approximately 190 acres of wetlands occur as natural features on the landscape as vernal pools and other seasonal wetlands and as emergent wetlands along the edges of open water habitats or freshwater marshes, or as managed features on the landscape in association with the agricultural landscape or specifically developed for wildlife management purposes. For a more detailed discussion, wetlands have been broken down into two categories, vernal pools and emergent wetlands, as described below.

Vernal Pools

Vernal pools are shallow, seasonally inundated depressional wetlands that form in soils with a subsurface layer that restricts the downward flow of water. These layers include hardpans, claypans, or thick clay layers. Vernal pools are typically identified as depressions within the topography with a hydrologic regime dominated by inundation and capable of supporting hydrophytic plant species and hydric soils. Plant species found within vernal pools are those that require extended periods of inundation and, as such, are commonly associated with these seasonal wetland features. Typically, dominant plant species (at least temporally) within vernal pools are perennial plant species that have adapted to withstand such extended conditions. For short periods throughout the year, these features are dominated by a succession of short-lived vegetation communities composed of annual plant species.

There are approximately 49 acres of vernal pool habitat, including altered vernal pools, within the Planning Area, with most vernal pools occurring in the eastern portion. Known vernal pool habitats are found in the vicinity of Stilson Canyon Road; north and south of Sycamore Creek; Bruce Road (Schmidbauer property); Humboldt Road (east of Hank Marsh Jr. High School); Foothill Park; Bidwell Ranch; and east, west, and south of the Chico Municipal Airport. These pools range in size from small, isolated basins to large vernal pool complexes covering several acres.

Vernal pools and swales contain a unique assemblage of native herbaceous forbs and grasses. Species found within the Planning Area include Fremont's goldfield (*Lasthenia fremontii*), valley goldfield (*Lasthenia californica*), tidy tips (*Layia fremontii*), white navarretia (*Navarretia leucocephalus*), pogogyny (*Pogogyny ziziphoroides*), yellow carpet (*Blennosperma nanum*), mannagrass (*Glyceria* spp.), coyote thistle, spike rush, hedge-hyssop, annual hairgrass (*Deschampsia danthonioides*), woolly marbles (*Psilocarphus brevissimus*), vernal pool foxtail (*Alopecurus saccatus*), vinegar weed, dove weed (*Croton setigerus*), dense-flowered willow-herb (*Epilobium densiflorum*), and toad rush (*Juncus bufonius*).

Vernal pools and swales may also support a number of special-status plant species including, but not limited to, Butte County meadowfoam (*Limnanthes floccosa* ssp. *californica*), Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*), Hoover's spurge (*Chamaesyce hooveri*), hairy Orcutt grass (*Orcuttia pilosa*), Greene's tuctoria (*Tuctoria greenei*), and slender Orcutt grass (*Orcuttia tenuis*). Habitat for Butte County meadowfoam includes areas with suitable soil type within naturally and man-altered vernal pool habitats and grassland with vernal swale complexes (SAIC, 2007, 2008a).

Emergent Wetland

Approximately 140 acres of emergent wetland occur in association with marshes, ponds, and drainages within the Planning Area. This habitat includes both seasonal and perennial wetlands and is typically associated with agricultural irrigation water or naturally occurring creeks, sloughs,

and rivers. Vegetation varies in height, cover, and species composition depending on the water depth and frequency of inundation. Common vegetation in this habitat includes cattails and tule (*Scirpus robustus*) along with Baltic rush (*Juncus balticus*), barnyard grass, tall nutsesge (*Cyperus eragrostis*), and dallis grass. Other hydrophytic species found in this habitat include water smartweed (*Polygonum amphibium*), ditchgrass (*Paspalum distichum*), salt grass (*Distichlis spicata*), floating boxseed (*Ludwigia repens*), and South American vervain (*Verbena bonariensis*).

In habitat with only seasonal inundation, typical vegetation is shorter and includes many annual species. Common plant species found in seasonal wetlands include Italian ryegrass, curly dock, spikerush, swamp grass (*Crypsis schoenoides*), alkali grass (*Puccinellia* spp.), coyote thistle, loosestrife hedge hyssop, and cocklebur.

Wildlife Associated with Wetland Communities

Vernal pools and swales in the Planning Area are important habitat for a variety of wildlife species including terrestrial and aquatic invertebrates, mammals, amphibians, reptiles, and birds. Some species depend entirely on these habitats throughout their lifecycle, others for only a portion of their lifecycle (e.g., breeding habitat or food source). Vernal pools and vernal swales provide important habitat for several species of threatened and endangered crustaceans including vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), and conservancy fairy shrimp (*Branchinecta conservatio*).

Both natural and managed wetlands in the Planning Area provide valuable nesting, foraging, cover, and breeding habitat for many bird, amphibian, and mammal species. Common wildlife species include western pond turtle, bullfrog (*Rana catesbeiana*), Pacific treefrog, black-necked stilt (*Himantopus mexicanus*), American avocet (*Recurvirostra Americana*), great blue heron, raccoon, striped skunk (*Mephitis mephitis*), and muskrat.

SENSITIVE HABITATS AND CRITICAL HABITATS

Sensitive habitats as defined in this EIR include (a) areas of special concern to resource agencies; (b) areas protected under the California Environmental Quality Act (CEQA); (c) areas designated as sensitive natural communities by the California Department of Fish and Game (CDFG); (d) areas outlined in Section 1600 of the California Fish and Game Code; (e) areas regulated under Section 404 of the federal Clean Water Act (CWA); (f) areas protected under Section 402 of the CWA; and (g) areas protected under local regulations and policies. Some of the biological communities found in the Planning Area are sensitive habitats protected by various agencies. The riverine, riparian, and wetland habitats within the Planning Area are sensitive habitats. Vernal pools, emergent wetlands, and other wetland areas provide potential habitat for special-status species. Oak woodland communities (interior live oak woodland, blue oak woodland, blue oak woodland, and mixed oak woodland) are also considered sensitive habitats.

The U.S. Fish and Wildlife Service (USFWS) defines critical habitat as a specific area that is essential for the conservation of a federally listed species and which may require special management considerations or protection. Critical habitat for vernal pool fairy shrimp has been designated primarily within the eastern portions of the Planning Area, whereas critical habitat for tadpole shrimp has been designated within the southern tip of the Planning Area (USFWS, 2006, 2009b). Critical habitat has been designated for Butte County meadowfoam, all of which is located within the Butte Regional HCP/NCCP planning area; a total of 16,636 acres (6,732 hectares) has been designated as critical habitat in four separate areas (Units 1, 2, 3, and 4), all

of which are in Butte County (USFWS, 2006). There are a number of Butte County meadowfoam occurrences within the Planning Area (CDFG, 2009; SAIC, 2007) primarily within the eastern and northern portions of the identified habitat (USFWS, 2006, 2009b). Critical habitat has also been designated for Chinook salmon (Central Valley spring-run) within the major creeks of the Planning Area including Mud Creek, Lindo Channel, Big Chico Creek, and Butte Creek (National Marine Fisheries Service, National Oceanic and Atmospheric Administration [NMFS, NOAA] 2005; USFWS, 2009b). **Figure 4.10-2** shows the critical habitat within and directly surrounding the Planning Area.

WILDLIFE CORRIDORS

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Corridors are present in a variety of habitats and link otherwise fragmented acres of undisturbed area. Maintaining the continuity of established wildlife corridors is important to sustain species with specific foraging requirements, preserve a species' distribution potential, and retain diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource. The waterways and any surrounding riparian corridor within the Planning Area serve as aquatic and terrestrial wildlife migration corridors. In particular, riparian habitat is present along reaches of Big Chico Creek within Bidwell Park and the upper reaches of Mud Creek (see **Figure 4.10-1**). In addition, agricultural and open space lands within the Planning Area may also be used as wildlife corridors by a variety of wildlife species. Migratory and resident deer that use the Planning Area are primarily associated with oak woodland and savanna and riparian communities (SAIC, 2007). The majority of migratory deer habitat in Butte County is winter range, which is considerably less abundant than summer range and is considered the limiting portion of deer habitat (SAIC, 2007). The Eastern Tehama deer herd is the largest migratory deer herd in the county and occupies a range considered to be the most extensive in the state (SAIC, 2007). The deer herd's winter range within Butte County extends from the valley floor to nearly 4,000 feet in elevation; critical winter range generally extends from 1,000 to 3,000 feet in elevation, which includes the eastern portion of the Planning Area (see Figure 13-4 of the Butte County General Plan 2030 Setting and Trends Report) (SAIC, 2007; Butte County, 2007).

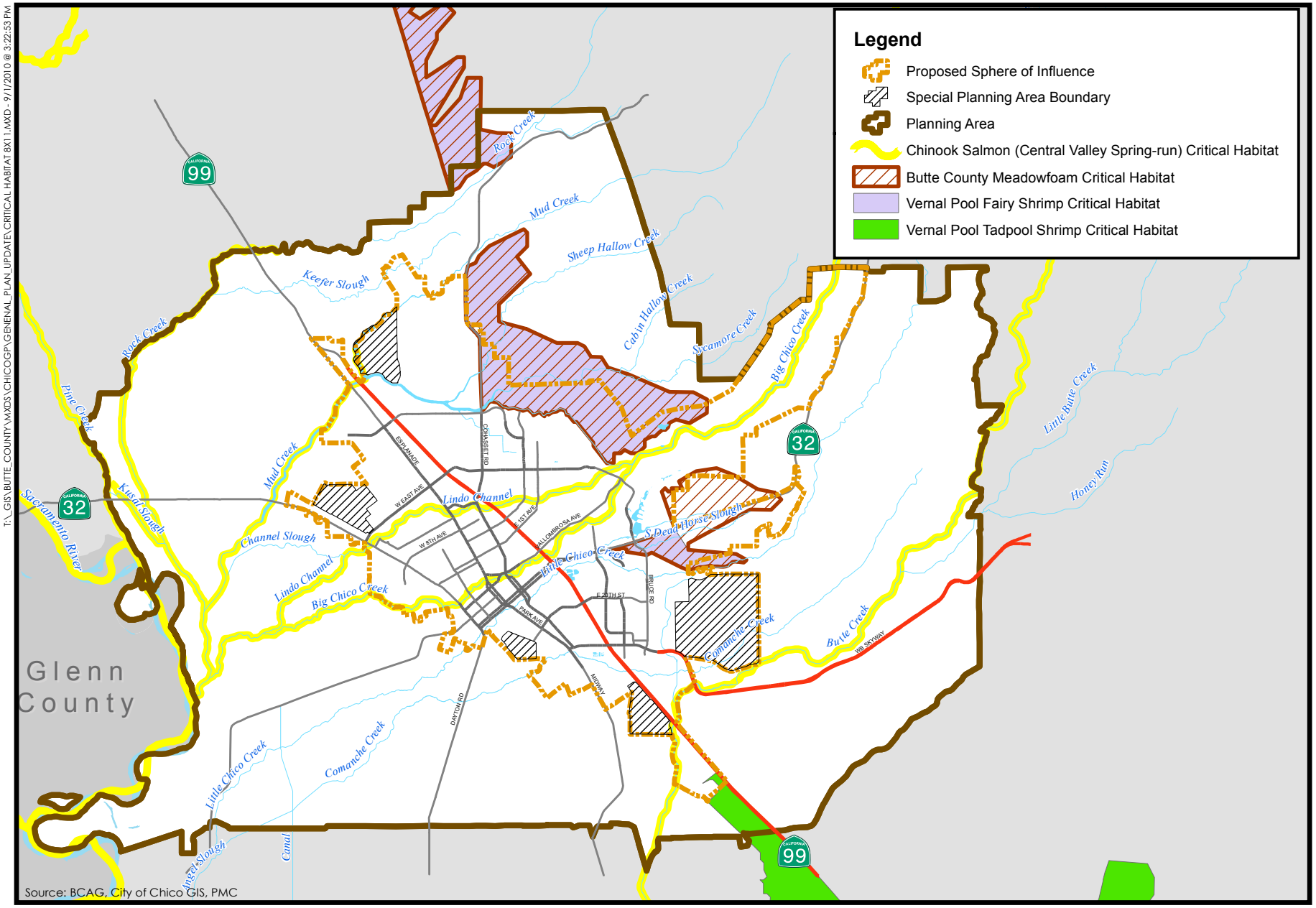

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Figure 4.10-2
Critical Habitat within and surrounding the Planning Area

SPECIAL-STATUS SPECIES

Special-status plant and animal species are those that are afforded special recognition by federal, state, or local resource agencies or organizations. Special-status species are of relatively limited distribution and generally require specialized habitat conditions.

Special-status plant species are defined as:

- Listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (FESA) (50 Code of Federal Regulations (50 CFR 17-12 [listed plants] and various notices in the Federal Register [proposed species]).
- Candidates for possible future listing as threatened or endangered under the FESA.
- Listed or candidates for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA) (14 CCR 670.5).
- Listed as rare under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.).
- Considered by California Native Plant Society (CNPS) to be rare, threatened, or endangered in California (CNPS Lists 1B and 2).

Special-status wildlife are animals that meet the definition of "endangered, rare, or threatened" under CEQA (State CEQA Guidelines Section 15380). For the purposes of this document, this includes all species that meet any of the following criteria:

- Listed or proposed for listing as threatened or endangered under FESA (50 CFR 17-11 [listed animals] and various notices in the Federal Register [proposed species]).
- Candidates for possible future listing as threatened or endangered under FESA.
- Listed or candidates for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5).
- Otherwise protected under state or federal law.

The potential for special-status species to occur within the Planning Area was evaluated by querying the California Natural Diversity Database (CDFG, 2009), the USFWS (2009a), and the CNPS (2009) for previously recorded occurrences of special-status species within the Chico, California USGS 7.5-minute quadrangle (USGS, 1948) and eight surrounding quadrangles (Nord, Richardson Springs, Hamlin Canyon, Shippee, Paradise West, Ord Ferry, Llano Seco, and Nelson) (**Appendix E**).

CDFG maintains records for the distribution and known occurrences of sensitive species and habitats in the California Natural Diversity Database (CNDDB), which is organized into map areas based on 7.5-minute topographic maps produced by USGS. The CNDDB is based on actual recorded occurrences, but does not constitute an exhaustive inventory of every resource. The absence of an occurrence in a particular location does not necessarily mean that special-status species are absent from that area, but that no data has been entered into the CNDDB inventory. Detailed field surveys are generally required to provide a conclusive determination on

presence or absence of sensitive resources from a particular location where there is evidence of potential occurrence.

Tables 4.10-2 and **4.10-3** identify the special-status species plant and animal species, respectively, which have potential to be affected by projects occurring within the Planning Area. The habitat preferences for each special-status species were carefully reviewed and considered in the context of the Planning Area and surrounding areas. Species having no potential for occurrence are not expected to occur based on the known elevation or distribution range of the species or the lack of suitable habitat. Species that do have potential for occurrence are described in more detail below. **Tables 4.10-2** and **4.10-3** include the common name and scientific name for each species, regulatory status, habitat descriptions, and potential for occurrence within the Planning Area.

Species proposed as covered species under the Butte Regional HCP/NCCP (SAIC, 2007) are also included in **Tables 4.10-2** and **4.10-3** below. The list of proposed covered species presented in the Draft Ecological Baseline Report for the Butte Regional Habitat Conservation Plan/Natural Community Conservation Plan (SAIC, 2007) is considered a working list of species.

TABLE 4.10-2
SPECIAL-STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE PLANNING AREA

Scientific Name **Common Name**	**Status**			**Habitat Description[4]**	**Considered in Impact Analysis**	**Rationale**
	Federal[1]	State[2]	CNPS[3]			
Plants						
Astragalus tener var. *ferrisiae* Ferris's milk-vetch	~	~	1B	Meadows and seeps (vernally mesic), valley and foothill grassland (sub-alkaline flats). Known only from six extant occurrences. Blooming period: April – May Elevation: 5 – 75 meters	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within the Planning Area.
California macrophylla Round-leaved filaree	~	~	1B	Annual herb found in cismontane woodlands and valley and foothill grasslands on clay soils. Blooming period: March – May Elevation: 15 – 1,200 meters	Yes	Suitable habitat is present within the Planning Area. Two recorded occurrences within 10 miles of Planning Area.
Calystegia atriplicifolia ssp. *buttensis* Butte County morning-glory	~	~	1B	Dry, mostly open slopes in lower montane coniferous forest and chaparral habitats. Blooming period: May – July Elevation: 600 – 1,524 meters	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within 1 mile of the Planning Area.

Scientific Name **Common Name**	**Status**			**Habitat Description[4]**	**Considered in Impact Analysis**	**Rationale**
	Federal[1]	State[2]	CNPS[3]			
Campylopodiella stenocarpa Flagella-like atractylocarpus	~	~	2	Cismontane woodland. Blooming period: N/A Elevation: 100 – 500 meters	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within the Planning Area.
Carex vulpinoidea Fox sedge	~	~	2	Perennial herb found in wet places including marshes, swamps, and riparian woodlands. Blooming period: May – June Elevation: 30 – 1,200 meters	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within the Planning Area.
Castilleja rubicundula ssp. *rubicundula* Pink creamsacs	~	~	1B	Annual herb found in chaparral (openings), cismontane woodlands, meadows and seeps, and valley and foothill grasslands on serpentine soils. Blooming period: April – June Elevation: 20 – 900 meters	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within the Planning Area.
Chamaesyce hooveri Hoover's spurge	FT Critical Habitat	~	1B	Found in vernal pools on volcanic mudflow or clay substrate. Blooming period: July – Sept. Elevation: 25 – 250 meters	Yes	Suitable habitat is present within the Planning Area. Two recorded occurrences within 5 miles of Planning Area.
Clarkia gracilis ssp. *albicaulis* White-stemmed clarkia	~	~	1B	Chaparral, cismontane woodland, often on road cuts, openings, dry brushy slopes, and sometime in serpentine soils. Blooming period: May – July Elevation: 245 – 1,085 meters	Yes	Suitable habitat is present within the Planning Area. Two recorded occurrences within 1 mile of the Planning Area, and two occurrences within the Planning Area.
Delphinium recurvatum Recurved larkspur	~	~	1B	Perennial herb. Chenopod scrub, cismontane woodland, valley and foothill grassland in alkaline soils. Blooming period: March – June Elevation: 3 – 750 meters	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within 10 miles of Planning Area.

Scientific Name **Common Name**	**Status**			**Habitat Description[4]**	**Considered in Impact Analysis**	**Rationale**
	Federal[1]	State[2]	CNPS[3]			
Didymodon norrisii Norris' beard moss	~	~	2	Cismontane woodland, lower montane coniferous forest/intermittently mesic, rock. Blooming period: N/A Elevation: 600 – 1,973 meters	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within 1 mile of the Planning Area, and one occurrence within the Planning Area.
Fritillaria pluriflora Adobe lily	~	~	1B	Bulbiferous herb found in chaparral, cismontane woodland, valley and foothill grasslands, often on adobe soils, and in mesic areas and vernal pools. Blooming period: February – April Elevation: 60 - 705 meters	Yes	Suitable habitat is present within the Planning Area. Five recorded occurrences within the Planning Area.
Hibiscus lasiocarpus Rose-mallow	~	~	2	Marshes, swamps, seeps and sloughs. Freshwater mesic areas, including on stream banks, and in irrigation ditches. Blooming period: June – Sept. Elevation: 0 – 120 meters	Yes	Suitable habitat is present within the Planning Area. Two recorded occurrences within the Planning Area.
Imperata brevifolia California satintail	~	~	2	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps/ often alkali, and riparian scrub/mesic. Blooming period: Sept. – May Elevation: 0 – 500 meters	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within 1 mile of the Planning Area, and one occurrence within the Planning Area.
Juncus leiospermus var. *leiospermus* Red Bluff dwarf rush	~	~	1B	Annual herb found on vernally mesic sites within chaparral, valley and foothill grassland, cismontane woodlands. Sometimes on edges of vernal pools. Blooming period: March – May Elevation: 30 – 100 meters	Yes	Suitable habitat is present within the Planning Area. Two recorded occurrences within 5 miles of the Planning Area.

Scientific Name **Common Name**	**Status**			**Habitat Description[4]**	**Considered in Impact Analysis**	**Rationale**
	Federal[1]	State[2]	CNPS[3]			
Limnanthes floccosa ssp. *californica* Butte County meadowfoam	FE Critical Habitat	SE	1B	Valley and foothill grassland/ vernal pools; mesic areas, sometimes on bottom of vernally moist drainages and pools. Blooming period: March – May Elevation: 46 – 930 meters	Yes	Suitable habitat is present within the Planning Area. Nine recorded occurrences within the Planning Area.
Monardella douglasii ssp. *venosa* Veiny monardella	~	~	1B	Cismontane woodland; valley and foothill grasslands. Heavy clay soils. Blooming period: May – July Elevation: 60 – 410 meters	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within the Planning Area.
Orcuttia pilosa Hairy Orcutt grass	FE Critical Habitat	SE	1B	Endemic to vernal pools of the Sacramento Valley. Blooming period: May – Sept. Elevation: 46 – 200 meters	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within 5 miles of the Planning Area.
Paronychia ahartii Ahart's paronychia	~	~	1B	Annual herb found on stony, nearly barren clay of swales and higher ground around vernal pools within valley and foothill grassland and cismontane woodland. Blooming period: May – June Elevation: 30 – 510 meters	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within the Planning Area.
Potamogeton filiformis Slender-leaved pondweed	~	~	2	Marshes and swamps (assorted shallow freshwater). Blooming period: May – July Elevation: 300 – 2,150 meters	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within the Planning Area.
Rhynchospora californica California beaked-rush	~	~	1B	Bogs, fens, lower montane coniferous forest, meadows, seeps, and freshwater marshes and swamps; sometimes on Tuscan volcanic soils. Blooming period: May – July Elevation: 45 – 1,010 meters	Yes	Suitable habitat is present within the Planning Area. Four recorded occurrences within the Planning Area.

Scientific Name Common Name	Status			Habitat Description[4]	Considered in Impact Analysis	Rationale
	Federal[1]	State[2]	CNPS[3]			
Rhynchospora capitellata Brownish beaked-rush	~	~	2	Mesic sites in lower montane coniferous forest and upper montane coniferous forest habitats. Blooming period: July – August Elevation: 455 – 2,000 meters	No	No suitable habitat present within the Planning Area. One recorded occurrence within 5 miles of the Planning Area.
Sidalcea robusta Butte county checkerbloom	~	~	1B	Chaparral, cismontane woodland. Rocky and brush-covered slopes on Tuscan Formation mud flow. Blooming period: April – June Elevation: 90 – 1,600 meters	Yes	Suitable habitat is present within the Planning Area. Two recorded occurrences within 1 mile of the Planning Area, and 13 occurrences within the Planning Area.
Trifolium jokerstii Butte county golden clover	~	~	1B	Valley and foothill grassland, vernal pools on mesic soils. Blooming period: March – May Elevation: 50 – 385 meters	Yes	Suitable habitat is present within the Planning Area. Six recorded occurrences within 10 miles of the Planning Area.
Tuctoria greenei Greene's tuctoria	FE Critical Habitat	CR	1B	Vernal pools. Blooming period: May – July Elevation: 30 – 1,070 meters	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within the Planning Area.
Wolffia brasiliensis Brazilian watermeal	~	~	2	Perennial herb/aquatic found in marshes and swamps (assorted shallow freshwater habitats). Blooming period: April – Dec. Elevation: 30 – 100 meters	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within the Planning Area.

CODE DESIGNATIONS

[1] Federal status: 2009 USFWS Listing	[2] State status: 2009 CDFG Listing	[3] CNPS: 2009 CNPS Listing
FE = Listed as endangered under the Endangered Species Act	**SE** = Listed as endangered under the California Endangered Species Act	**1B** = Plant species that are rare, threatened, or endangered in California and elsewhere
FT = Listed as threatened under the Endangered Species Act	**CR** = Species identified as rare by CDFG	**List 2** = Plant species that are rare, threatened, or endangered in California, but more common elsewhere
4 Habitat description: Habitat description adapted from CNDDB (CDFG, 2009) and CNPS online inventory (CNPS, 2009)		

TABLE 4.10-3
SPECIAL-STATUS WILDLIFE SPECIES POTENTIALLY OCCURRING WITHIN THE PLANNING AREA

Common Name *Scientific Name*	Status		Habitat Description[3]	Considered in Impact Analysis	Rationale
	Federal[1]	State[2]			
Invertebrates					
Conservancy fairy shrimp *Branchinecta conservatio*	FE	~	Inhabits rather large, cool-water vernal pools with moderately turbid water.	Yes	Suitable habitat is present within the Planning Area. Two recorded occurrences within 5 miles of the Planning Area.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	~	Occurs in association with elderberry shrubs (*Sambucus* spp.).	Yes	Suitable habitat is present within the Planning Area. Seven recorded occurrences within the Planning Area.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT Critical Habitat	~	Occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. Although the species has been collected from large vernal pools, including one exceeding 25 acres, it tends to occur in smaller pools. It is most frequently found in pools measuring less than 0.05 acre, most commonly in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands.	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within the Planning Area.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE Critical Habitat	~	Occurs in vernal pools and other seasonal freshwater habitats.	Yes	Suitable habitat is present within the Planning Area. Eight recorded occurrences within the Planning Area.
Fish					
Chinook salmon Central Valley spring-run ESU *Oncorhynchus tshawytscha*	FT Critical Habitat	ST	Few wild spawning populations remain in the Sacramento River system, California; extirpated in San Joaquin River drainage. This ESU includes chinook salmon entering the Sacramento River from March to July and spawning from late August through early October.	Yes	Suitable habitat is present within the Planning Area. Two recorded occurrences within the Planning Area.

Common Name *Scientific Name*	Status		Habitat Description[3]	Considered in Impact Analysis	Rationale
	Federal[1]	State[2]			
Chinook salmon Sacramento River winter-run ESU *Oncorhynchus tshawytscha*	FE Critical Habitat	SE	Spawns primarily in the mainstem of the Sacramento River immediately downstream of Keswick Dam and below the historic spawning grounds downstream from Shasta Reservoir; most suitable spawning areas are between the Red Bluff Diversion Dam and Keswick Dam. Migrates through the Sacramento River, Delta, and San Pablo and San Francisco bays to nonbreeding habitat in the Pacific Ocean. Some juveniles rear non-natally for brief periods in lower reaches of tributaries.	No	Planning Area is located outside known distribution range of this species.
Delta smelt *Hypomesus transpacificus*	FT	ST	Located exclusively in the Sacramento-San Joaquin Delta. They have been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River. They extend downstream as far as San Pablo Bay. Delta smelt are found in brackish water. They usually inhabit salinity ranges of less than 2 parts per thousand (ppt) and are rarely found at salinities greater than 14 ppt.	No	Planning Area is located outside known distribution range of this species.
Green sturgeon *Acipenser medirostris*	FT	~	Widely distributed, ocean-oriented sturgeon found in nearshore marine waters from Baja Mexico to Canada. Green sturgeons are anadromous, spawning in the Sacramento, Klamath, and Rogue rivers in the spring.	No	Planning Area is located outside known distribution range of this species.
Steelhead Central Valley ESU *Oncorhynchus mykiss irideus*	FT Critical Habitat	~	Spawns in the Sacramento and San Joaquin rivers and their tributaries; now extirpated from most of historical range; the majority of native, natural production occurs in upper Sacramento River tributaries below Red Bluff Diversion Dam.	Yes	Suitable habitat is present within the Planning Area. No recorded occurrences within the Planning Area; however, CalFish (2009) denotes observations.

Common Name *Scientific Name*	Status		Habitat Description[3]	Considered in Impact Analysis	Rationale
	Federal[1]	State[2]			
Amphibians					
California red-legged frog *Rana aurora draytonii*	FT	CSC	Lowlands and foothill streams, pool, and marshes in or near permanent or late season sources of deep water with dense, shrubby, riparian, or emergent vegetation (e.g., ponds, perennial drainages, well-developed riparian) below 3,936 feet in elevation. Breeds late December to early April.	No	Although suitable habitat is present within the Planning Area, there are no recorded occurrences within 10 miles, and the Planning Area is located outside the known current distribution range for this species.
Western spadefoot toad Spea hammondii	~	CSC	Occurs primarily in grassland habitats with associated seasonal wetlands for breeding.	Yes	Suitable habitat is present within the Planning Area. Two recorded occurrences within the Planning Area.
Reptiles					
California (coast) horned lizard *Phrynosoma coronatum frontale*	~	CSC	Occurs in valley-foothill hardwood, conifer and clearings in riparian habitats, as well as in pine-cypress, juniper, and annual grassland habitats.	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within 1 mile of the Planning Area.
Giant garter snake *Thamnophis gigas*	FT	ST	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands. Upland habitat should have burrows or other soil crevices suitable for snakes to reside during their dormancy period (November – mid March).	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within the Planning Area.
Northwestern pond turtle *Actinemys marmorata marmorata*	~	CSC	Occurs in permanent or nearly permanent water in a wide variety of habitat types.	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within the Planning Area.
Birds					
American peregrine falcon *Falco peregrinus anatum*	FD; MNBMC	SE	Seasonal migrant in Bay Area; open country near water where shorebirds feed. May nest in high cliffs near rivers, wetlands, lakes, and human-made structures.	Yes	Suitable habitat is present within the Planning Area. Two recorded occurrences within the Planning Area.

Common Name *Scientific Name*	Status		Habitat Description[3]	Considered in Impact Analysis	Rationale
	Federal[1]	State[2]			
Bald eagle *Haliaeetus leucocephalus*	FD; MNBMC	SE; CFP	Permanent resident, and uncommon winter migrant, now restricted to breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity counties. Build stick nests within large tall trees and typically within 1 mile of permanent water. Breeds February to July.	Yes	Suitable habitat is present within the Planning Area. Two recorded occurrences within the Planning Area.
Bank swallow *Riparia riparia*	MNBMC	ST	Nests within riparian areas with vertical cliffs, sides of man-made excavations near rivers and riverbanks with fine or sandy soils, up to 7,000 feet above mean sea level. Will also nest in areas void of vegetation.	Yes	Suitable habitat is present within the Planning Area. Five recorded occurrences within the Planning Area.
Burrowing owl *Athene cunicularia*	MNBMC	CSC	Open grasslands and shrublands up to 5,300 feet with low perches and small mammal burrows. Resident year-round. Breeds March through August.	Yes	Suitable habitat is present within the Planning Area. Four recorded occurrences within the Planning Area.
Greater sandhill crane *Grus canadensis tabida*	MNBMC	ST; CFP	(Rookery) This species establishes nesting territories in wet meadows, often interspersed with marsh land habitat. They nest on the ground in dense emergent marsh vegetation. In California, pairs generally nest in open habitats.	No	No suitable nesting habitat within the Planning Area.
Loggerhead shrike *Lanius ludovicianus*	MNBMC	CSC	Inhabits open areas with sparse shrubs, trees, and other perches.	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within 10 miles of the Planning Area.
Northern harrier *Circus cyaneus*	MNBMC	CSC	Meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands. Nests on ground, usually at marsh edge. Mostly nests in emergent wetland or along rivers or lakes, but may nest in grasslands, grain fields, or on sagebrush flats several miles from water. Breeds April to September.	Yes	Suitable habitat is present within the Planning Area. No recorded occurrences within 10 miles of the Planning Area.

Common Name *Scientific Name*	Status		Habitat Description[3]	Considered in Impact Analysis	Rationale
	Federal[1]	State[2]			
Swainson's hawk *Buteo swainsoni*	MNBMC	ST	Nests in isolated trees or riparian woodlands adjacent to suitable foraging habitat (agricultural fields, grasslands, etc.).	Yes	Suitable habitat is present within the Planning Area. Seven recorded occurrences within the Planning Area.
Tricolored blackbird *Agelaius tricolor*	MNBMC	CSC	Nests in dense blackberry, cattails, tules, willows, or wild rose within emergent wetlands throughout the Central Valley and the foothills surrounding the valley.	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within the Planning Area.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FC; MNBMC	SE	Riparian forest, along the broad, lower flood-bottoms of large river systems. Nests in riparian jungles of willow often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Yes	Suitable habitat is present within the Planning Area. Five recorded occurrences within the Planning Area.
Yellow warbler *Dendroica petechia brewsteri*	MNBMC	CSC	Breeds in riparian woodlands from coastal and desert lowlands up to 8,000 feet in Sierra Nevada. Also breeds in montane chaparral and in open ponderosa pine and mixed conifer habitats with substantial amounts of brush.	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within 10 miles of the Planning Area.
Mammals					
American badger *Taxidea taxus*	~	CSC	Stout-bodied, primarily solitary species that hunts for ground squirrels and other small mammal prey in open grassland, cropland, deserts, savanna, and shrubland communities. Badgers have large home ranges and spend inactive periods in underground burrows. Badgers typically mate in mid to late summer and give birth between March and April.	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within 10 miles of the Planning Area.
Pallid bat *Antrozous pallidus*	~	CSC	Pallid bats roost in rock crevices, tree hollows, mines, caves, and a variety of anthropogenic structures, including vacant and occupied buildings, mines, and natural caves which are utilized as roosts. Occurrence is primarily in arid habitats. Colonies are usually small and may contain 12–100 bats.	Yes	Suitable habitat is present within the Planning Area. One recorded occurrence within the Planning Area.

Common Name *Scientific Name*	Status		Habitat Description[3]	Considered in Impact Analysis	Rationale
	Federal[1]	State[2]			
Western mastiff bat *Eumops perotis californicus*	~	CSC	Primarily a cliff-dwelling species, generally under exfoliating rock slabs (e.g., granite, sandstone, or columnar basalt). It has also been found in similar crevices in large boulders and buildings. Foraging habitat includes dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas.	Yes	Suitable habitat is present within the Planning Area. Three recorded occurrences within the Planning Area.
Western red bat *Lasiurus blossevillii*	~	CSC	Strongly associated with riparian habitats, particularly mature stands of cottonwood/sycamore. Feeds over a wide variety of habitats including grasslands, shrublands, open woodlands and forests, and croplands.	Yes	Suitable habitat is present within the Planning Area. Two recorded occurrences within the Planning Area.

CODE DESIGNATIONS

[1] Federal status: 2009 USFWS Listing	[2] State status: 2009 CDFG Listing
ESU = Evolutionary Significant Unit (a distinctive population)	**SE** = Listed as endangered under the California Endangered Species Act (CESA)
FE = Listed as endangered under the Federal Endangered Species Act (FESA)	**ST** = Listed as threatened under the CESA
FT = Listed as threatened under the FESA	**CSC** = Species of Concern as identified by the CDFG
MNBMC = Migratory Nongame Bird of Management Concern, protected under the Migratory Bird Treaty Act	**CFP** = Listed as fully protected under CDFG code
[3] Habitat description: Habitat description information adapted from CNDDB (CDFG, 2009).	

4.10.2 REGULATORY FRAMEWORK

This section lists specific environmental review and consultation requirements and identifies permits and approvals that must be obtained from local, state, and federal agencies before implementation of the proposed project.

FEDERAL

Endangered Species Act

Provisions of the federal Endangered Species Act (FESA), as amended (16 USC 1531), protect federally listed threatened and endangered species and their habitats from unlawful take. "Take" under the FESA includes activities such as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS regulations define harm to include some types of "significant habitat modification or degradation." In the case of *Babbitt, Secretary Of Interior, et al., Petitioners v. Sweet Home Chapter Of Communities For A Great Oregon, et al.* (No. 94-859) (U.S. Supreme Court, 1995), the United States Supreme

Court ruled on June 29, 1995, that "harm" may include habitat modification "where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering."

For projects with a federal nexus, Section 7 of the FESA requires that federal agencies, in consultation with the USFWS or National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries), use their authorities to further the purpose of the FESA and to ensure that their actions are not likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat. Section 10(a)(1)(B) allows non-federal entities to obtain permits for incidental taking of threatened or endangered species through consultation with USFWS or NOAA Fisheries. In general, NOAA Fisheries is responsible for protection of federally listed marine species and anadromous fish while other listed species come under USFWS jurisdiction. Key provisions of the FESA are summarized below under the section that implements them.

Section 10

Section 10 of the FESA provides a means for nonfederal entities (states, local agencies, and private parties) that are not permitted or funded by a federal agency to receive authorization to disturb, displace, or kill (i.e., take) threatened and endangered species. It allows USFWS and/or NOAA Fisheries to issue an incidental take permit authorizing take resulting from otherwise legal activities, as long as the take would not jeopardize the continued existence of the species. Section 10 requires the applicant to prepare a Habitat Conservation Plan (HCP) addressing project impacts and proposing mitigation measures to compensate for those impacts. The HCP is subject to USFWS and/or NOAA Fisheries review and must be approved by the reviewing agency or agencies before the proposed project can be initiated. Because the issuance of the incidental take permit is a federal action, USFWS and/or NOAA Fisheries must also comply with the requirements of the FESA Section 7 and the National Environmental Policy Act (NEPA).

Section 7

Section 7 of the FESA applies to the management of federal lands as well as other federal actions, such as federal approval of private activities through the issuance of federal permits, licenses, funding, or other actions that may affect listed species. Section 7 directs all federal agencies to use their existing authorities to conserve threatened and endangered species and, in consultation with USFWS, to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. Critical habitat is defined as specific areas that are essential to the conservation of federally listed species.

Clean Water Act, Section 404

The objective of the Clean Water Act (CWA 1977, as amended) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Discharge of fill material into waters of the U.S., including wetlands, is regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the federal Clean Water Act (33 USC 1251–1376). USACE regulations implementing Section 404 define waters of the U.S. to include intrastate waters, including lakes, rivers, streams, wetlands, and natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce. Wetlands are defined for regulatory purposes as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3; 40 CFR 230.3).

The jurisdictional boundaries for other waters of the U.S. are identified based on the presence of an ordinary high water mark (OHWM) as defined in 33 CFR 328.3(e). The placement of structures in "navigable waters of the U.S." is also regulated by the USACE under Section 10 of the federal Rivers and Harbors Act (33 USC 401 et seq.). Projects are permitted under either individual or general (e.g., nationwide) permits. Specific applicability of permit type is determined by the USACE on a case-by-case basis.

In 1987, the USACE published a manual that standardized the manner in which wetlands were to be delineated nationwide. To determine whether areas that appear to be wetlands are subject to USACE jurisdiction (jurisdictional wetlands), a wetlands delineation must be performed. Under normal circumstances, positive indicators from three parameters, (1) wetland hydrology, (2) hydrophytic vegetation, and (3) hydric soils, must be present to classify a feature as a jurisdictional wetland. More recently, the USACE developed the Arid West Regional Supplement (USACE, 2006) for identifying wetlands and distinguishing them from aquatic habitats and other nonwetlands. The supplement presents wetland indicators, delineation guidance, and other information that is specific to the Arid West Region. For any wetland delineations submitted after June 5, 2007, the USACE is requiring that the site be surveyed according to both the 1987 manual and the supplement guidelines. In addition to verifying wetlands for potential jurisdiction, the USACE is responsible for the issuance of permits for projects that propose filling of wetlands. Any permanent loss of a jurisdictional wetland as a result of project construction activities is considered a significant impact.

A "no net loss" wetlands policy is an overall policy goal for wetland protection first adopted by the George Bush Administration (1989-1993), and endorsed and updated by the Clinton Administration (1993-2001).

Clean Water Act, Section 401

Section 401 of the CWA requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. The appropriate Regional Water Quality Control Board regulates Section 401 requirements (see under State).

Migratory Bird Treaty Act

Migratory birds are protected under the Migratory Bird Treat Act (MBTA) of 1918 (16 USC 703–711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The vast majority of birds found in the Planning Area are protected under the MBTA.

Bald and Golden Eagle Protection Act

The bald eagle and golden eagle are federally protected under the Bald and Golden Eagle Protection Act (16 USC 668–668c). It is illegal to take, possess, sell, purchase, barter, offer to sell or purchase or barter, transport, export, or import at any time or in any manner a bald or golden eagle, alive or dead, or any part, nest or egg of these eagles unless authorized by the Secretary of the Interior. Violations are subject to fines and/or imprisonment for up to one year. Active nest sites are also protected from disturbance during the breeding season.

STATE

California Endangered Species Act

Under the California Endangered Species Act (CESA), the CDFG has the responsibility for maintaining a list of endangered and threatened species (California Fish and Game Code 2070). CDFG maintains a list of "candidate species," which are species that CDFG formally notices as being under review for addition to the list of endangered or threatened species. CDFG also maintains lists of "species of special concern," which serve as species "watch lists." Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project site and determine whether the proposed project will have a potentially significant impact on such species. In addition, CDFG encourages informal consultation on any proposed project that may impact a candidate species.

Project-related impacts to species on the CESA endangered or threatened list would be considered significant. State-listed species are fully protected under the mandates of CESA. "Take" of protected species incidental to otherwise lawful management activities may be authorized under California Fish and Game Code Section 206.591. Authorization from the CDFG would be in the form of an Incidental Take Permit.

Porter-Cologne Water Quality Control Act

Water quality in California is governed by the Porter-Cologne Water Quality Control Act. This law assigns overall responsibility for water rights and water quality protection to the State Water Resource Control Board (SWRCB) and directs the nine statewide Regional Water Quality Control Boards (RWQCBs) to develop and enforce water quality standards within their boundaries.

California Wetlands Conservation Policy

In August 1993, the Governor announced the "California Wetlands Conservation Policy." The goals of the policy are to establish a framework and strategy that will:

- Ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property.

- Reduce procedural complexity in the administration of State and federal wetlands conservation programs.

- Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetlands conservation and restoration.

The Governor also signed Executive Order W-59-93, which incorporates the goals and objectives contained in the new policy and directs the Resources Agency to establish an Interagency Task Force to direct and coordinate administration and implementation of the policy.

California Regional Water Quality Control Board

Clean Water Act, Section 401 Water Quality Certification

Section 401 of the CWA (33 USC 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. The appropriate Regional Water Quality Control Board (in California) regulates Section 401 requirements. The Central Valley Regional Water Quality Control Board (CVRWQCB) is responsible for enforcing water quality criteria and protecting water resources within the Planning Area. The CVRWQCB is responsible for controlling discharges to surface waters of the state by issuing waste discharge requirements (WDR) or commonly by issuing conditional waivers to WDRs. The CVRWQCB requires that a project proponent obtain a CWA Section 401 water quality certification for Section 404 permits granted by the USACE.

Delegated Permit Authority

California has been delegated permit authority for the National Pollutant Discharge Elimination System (NPDES) permit program including stormwater permits for all areas except Indian lands. Issuing CWA Section 404 dredge and fill permits remains the responsibility of the USACE, but the State actively uses its CWA Section 401 certification authority to ensure 404 permits protect State water quality standards.

State Definition of Covered Waters

Under California state law, "waters of the state" means "any surface water or groundwater, including saline waters, within the boundaries of the state." Therefore, water quality laws apply to both surface and groundwater. After the U.S. Supreme Court decision in *Solid Waste Agency of Northern Cook County* v. *Army COE of Engineers* (*SWANCC v. USCOE*), the Office of Chief Counsel of the SWRCB released a legal memorandum confirming the State's jurisdiction over isolated wetlands. The memorandum stated that under the California Porter-Cologne Water Quality Control Act, discharges to wetlands and other waters of the state are subject to state regulation, and this includes isolated wetlands. In general, the RWQCBs regulate discharges to isolated waters in much the same way as they do for federal-jurisdictional waters, using Porter-Cologne rather than CWA authority.

California Fish and Game Code

Fully Protected Species

Certain species are considered fully protected, meaning that the code explicitly prohibits all take of individuals of these species except for take permitted for scientific research. Section 5050 lists fully protected amphibians and reptiles, Section 5515 lists fully protected fish, Section 3511 lists fully protected birds, and Section 4700 lists fully protected mammals.

It is possible for a species to be protected under the California Fish and Game Code, but not fully protected. For instance, mountain lion (*Puma concolor*) is protected under Section 4800 et seq., but is not a fully protected species.

Protection of Birds and Their Nests

Eggs and nests of all birds are protected under Section 3503 of the California Fish and Game Code, nesting birds (including raptors and passerines) under Sections 3503.5 and 3513, and birds of prey under Section 3503.5. Migratory non-game birds are protected under Section 3800 and other specified birds under Section 3505.

Stream and Lake Protection

CDFG has jurisdictional authority over streams and lakes and the wetland resources associated with these aquatic systems under California Fish and Game Code Sections 1600 et seq. through administration of lake or streambed alteration agreements. Such agreements are not a permit, but rather a mutual accord between CDFG and the project proponent. California Fish and Game Code Section 1600 et seq. was repealed and replaced in October of 2003 with the new Section 1600–1616 that took effect on January 1, 2004 (Senate Bill 418, Sher). Under the new code, CDFG has the authority to regulate work that will "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river lake or stream." CDFG enters into a streambed alteration agreement with the project proponent and can impose conditions in the agreement to minimize and mitigate impacts to fish and wildlife resources. Because CDFG includes under its jurisdiction streamside habitats that may not qualify as wetlands under the federal CWA definition, CDFG jurisdiction may be broader than USACE jurisdiction.

A project proponent must submit a notification of streambed alteration to CDFG before construction. The notification requires an application fee for streambed alteration agreements, with a specific fee schedule to be determined by CDFG. CDFG can enter into programmatic agreements that cover recurring operation and maintenance activities and regional plans. These agreements are sometimes referred to as Master Streambed Alteration Agreements (MSAAs).

LOCAL

Butte Regional Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP)

The Butte Regional HCP/NCCP is being coordinated by the Butte County Association of Governments (BCAG) on behalf of the cities of Biggs, Chico, Gridley, Oroville, and the County of Butte. The HCP/NCCP is a voluntary plan that will provide comprehensive species, wetlands, and ecosystem conservation and contribute to the recovery of endangered species within the plan area while also providing a more streamlined process for environmental permitting.

It is anticipated that the public draft HCP/NCCP document which will be released for formal public review in 2010 and will be approved and permitted in 2012. As stated on the Butte Regional HCP/NCCP website (BCAG, 2009), habitat suitability models were developed for many of the 41 preliminary covered species as comprehensive survey coverage was not feasible for most species. These models were developed based on known habitat requirements for the covered species and peer-reviewed literature and are still being reviewed and refined by the steering and stakeholder committees, resources agencies, and various local and regional experts in particular species and habitat associations.

Chico Municipal Code

City of Chico Tree Preservation Regulations

Chico Municipal Code (CMC) Chapter 16.66, Tree Preservation Regulations, controls the removal and preservation of trees on (a) all undeveloped private property within the city which is 10,000 square feet or greater in size and (b) all property that requires discretionary approval of a land use entitlement. Under these regulations, trees afforded protection include "any live woody plant having a single perennial stem of 18 inches or more in diameter, or multistemmed perennial plant greater than 15 feet in height having an aggregate circumference of 40 inches or more, measured at four feet six inches above adjacent ground, and a species specific list at 12 inches (All Oaks, Sycamores, Oregon ash, Big leaf maple) and 6 inches trees (Blue oak, Canyon live oak, Interior live oak, California Buckeye, Madrone, Toyon, Redbud, California bay, Pacific dogwood) with the exception of the following tree species: Ailanthus, Chinese Tallow, Freemont Cottonwood or Poplar, Privet, Box Elder, Silver Wattle, Black Acacia, English Hawthorn, Russian Olive, Olive, Red Gum, Tasmanian Blue Gum, Edible Fig, English Holly, Cherry Plum, Black Locust, Peruvian Peppertree, Brazilian Peppertree, Western Catalpa, Chinese Elm or Winged Elm; or the following fruit and nut trees: Almonds, Apples, Apricots, Avocados, Cherries, Chestnuts, Mandarins, Nectarines, Olives, Oranges, Peaches, Pears, Pecans, Persimmons, Pistachios, Plums or English Walnuts

When Chapter 16.66 applies, a tree removal permit application, including a map showing the precise location, size, species, and drip-line of all existing trees on or adjacent to the property, must be submitted and approved prior to tree removal.

According to CMC section 16.66.085 (Tree Replacement), if a tree removal permit is granted, then it shall include a condition that the removed trees be replaced as follows:

A. On-site. For every six inches in DBH removed, a new 15 gallon tree shall be planted on-site. Replacement trees shall be of similar species, unless otherwise approved by the urban forest manager, and shall be placed in areas dedicated for tree plantings. New plantings' survival shall be ensured for three years after the date of planting and shall be verified by the applicant upon request by the director. If any replacement trees die or fail within the first three years of their planting, then the applicant shall pay an in-lieu fee as established by a fee schedule adopted by the City Council.

B. Off-site. If it is not feasible or desirable to plant replacement trees on-site, payment of an in-lieu fee as established by a fee schedule adopted by the City Council shall be required.

Replacement trees do not receive credit as satisfying shade or street tree requirements otherwise mandated by this code.

4.10.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

A biological resource impact is considered significant if implementation of the proposed General Plan Update would:

1) Have a substantial adverse effect, either directly or indirectly through habitat modifications, on any special-status plant or animal species identified, tracked or listed in local or regional plans, policies, or regulations, or by CDFG, USFWS, or NOAA Fisheries.

2) Have a substantial adverse effect on any wetlands, riparian, or other sensitive or critical habitat identified in local or regional plans, policies, or regulations, or by CDFG or USFWS.

3) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

4) Conflict with any adopted Habitat Conservation Plan (HCP), recovery plan, natural community conservation plan, local ordinance or other approved local, regional, or state plans, policies, intended to protect biological resources.

5) Reduce the number or restrict the range of an endangered, rare, or threatened plant or animal species or biotic community, thereby causing the species or community to drop below self-sustaining levels.

METHODOLOGY

The impact assessment was based on information available from various existing planning documents and database searches, as well as on the standards of significance described above. The assessment discusses potential impacts that could occur upon implementation of the proposed General Plan Update. Impacts were determined by comparing existing habitat baseline data and sensitive species associations to the proposed General Plan Land Use Diagram (**Figure 3.0-3**) and by determining effects that could occur through future development.

Habitat Assessment: All mapping was based on 2005 color orthorectified aerial photography with one-meter resolution (flown in summer or fall); additional aerial photography was used to assist in the mapping effort including February 2002 (two-meter resolution) and November 2006 (two-meter resolution) (SAIC, 2007). Reconnaissance-level visits, the Soil Survey of Butte County Area (NRCS, 2005), and the CDFG California Natural Diversity Database were used to support the land cover mapping, to establish mapping criteria, and to develop land cover type definitions (SAIC, 2007). Classification systems predominantly incorporated and adapted for mapping communities included *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland, 1986), *A Manual of California Vegetation* (Sawyer and Keeler-Wolfe, 1995), and the FRAP/CWHR. FRAP is used by Cal-Fire as a tool to assess California's forest and rangeland resources. CWHR is an extensive compilation of community-level information describing existing vegetation types important to wildlife. A biological communities figure was created using ArcView by layering the collected data (SAIC, 2007, 2008a/b) (**Figure 4.10-1**).

Special-Status Species Assessment: Special-status species, identified from the literature and database searches, were determined to have potential to occur in the Planning Area if their documented geographic range from the literature and database search includes the project vicinity and if suitable habitat for the species was identified within or near the Planning Area.

The CNDDB was queried for a list of special-status wildlife, plant, and fisheries resources that are known to occur within the Planning Area or vicinity (CDFG, 2009). A database search was performed for special-status species within the Chico, California USGS 7.5-minute quadrangle (USGS, 1948) and eight surrounding quadrangles (Nord, Richardson Springs, Hamlin Canyon, Shippee, Paradise West, Ord Ferry, Llano Seco, and Nelson).

The CNPS electronic online inventory was also searched for rare or endangered plants that may occur within the Planning Area (CNPS, 2009). This query was performed for CNPS List 1B and List 2

special-status plants occurring in the USGS 7.5-minute quadrangles listed above. List 1A species are presumed extinct in California. List 1B species are considered rare or endangered in California and elsewhere. List 2 species are considered rare or endangered in California, but are more common elsewhere.

In addition, the online USFWS list for the USGS 7.5-minute quadrangles listed above was queried and reviewed for federally listed or candidate plant and animal species that could potentially be affected by the proposed General Plan Update (USFWS, 2009a).

When the USFWS lists a species as threatened or endangered under FESA, areas of habitat considered essential to its conservation and survival may be designated as critical habitat. These areas may require special consideration and/or protection due to their ecological importance. In June 2009, potential critical habitat designations within the general vicinity of the Planning Area were checked using the USFWS Critical Habitat Portal (USFWS, 2009b). Critical habitat has been designated for vernal pool fairy shrimp, vernal pool tadpole shrimp, Butte County meadowfoam, and Chinook salmon (Central Valley spring-run) within and/or surrounding the Planning Area (**Figure 4.10-2**).

Appendix E presents the results of the CNDDB, CNPS, and USFWS queries for special-status species that have the potential to occur within the Planning Area and surrounding vicinities. This generalized list of species was reviewed, analyzed, and refined to provide inclusive lists of species that could occur specifically in the Planning Area (**Tables 4.10-2** and **4.10-3**). Range and habitat information of special-status plant and wildlife species was obtained from the California Wildlife Habitat Relationships (CWHR) program version 8 (CDFG, 2002) as well as other sources. No species-specific or protocol-level surveys for special-status species were conducted specifically to support this analysis.

This impact analysis is organized by the significance criteria noted above: special-status plant and wildlife species; sensitive vegetation communities including wetlands; wildlife movement; and compliance with existing Habitat Conservation Plans (HCP) or other plans and policies. Each impact category includes a description of the specific potential impacts, as well as avoidance and mitigation measures that can potentially reduce and mitigate potentially significant impacts.

The reader is referred to Section 3.0, Project Description, for specific features of the proposed General Plan Update.

ASSUMPTIONS

Since the exact nature, location, extent, and intensity of development on parcels associated with the proposed General Plan Update is not known at this time, it is likely that some level of natural resources would be retained within each project parcel. Several areas within the Planning Area are not expected to be developed under the proposed General Plan Update, including the 93-acre Butte Creek Ecological Preserve along the middle section of Butte Creek and the 3,950-acre Big Chico Creek Ecological Reserve which includes 4.5 miles of Big Chico Creek. Primary areas of ground disturbance associated with the General Plan Update will occur within the proposed SOI, particularly in the Special Planning Areas that are not currently developed.

The following general potential impacts were considered in the analysis of impacts included below. Where applicable, the analysis of impacts includes a discussion of state and/or federal regulations, including permitting requirements, which could mitigate impacts.

- Vegetation removal, grading, and construction of new residential, industrial, and commercial uses could result in the direct loss of special-status species and their habitats and loss of sensitive and/or critical habitats.

- Construction in or adjacent to creeks and adjacent riparian habitats could result in direct loss of special-status species and their habitat and loss and/or degradation of aquatic and riparian habitat and wetlands.

- Discharge of construction and other potential sources of polluted stormwater, and increased urban stormwater runoff could result in indirect impacts to special-status species and sensitive and/or critical habitats. Water quality impacts are discussed in more detail in Section 4.9, Hydrology and Water Quality.

- Loss of natural ground cover and increase in impervious areas could result in hydrologic changes that could affect special-status species and riparian habitat through alteration of surface and sub-surface flows, timing, and velocities. Hydrology impacts are discussed in more detail in Section 4.9, Hydrology and Water Quality.

- Increased urban development, particularly on the edge of existing development, could result in further fragmentation of wildlife habitats and disruption of movement corridors.

- Roadway improvements and extensions could result in fragmentation of habitats and disruption of movement corridors.

RESOURCE CONSTRAINT OVERLAY SITES

The Resource Constraint Overlay (RCO) designation acknowledges a reduced development potential in areas with known significant environmental constraints compared to allowable development potential based upon the underlying land use designation. . The designation is applied to three key areas (see **Figure 3.0-3**):

A. West of the Airport

B. Bruce Road

C. Stilson Canyon

The boundaries of the three constraint sites are specified on the Land Use Diagram of the proposed General Plan Update, along with aerial images showing general site conditions. The most significant environmental constraints at these locations are vernal pools, populations of Butte County meadowfoam (BCM), and habitat for BCM.

Vernal pools are a unique ephemeral wetland feature that provide habitat for an array of unique plant and animal species, many of which are protected by state and federal agencies. One of the most sensitive vernal pool species is BCM, a state and federally listed endangered plant species found only in limited areas within Butte County. Loss of habitat has been identified as the primary threat to BCM, and the U.S. Fish and Wildlife Service Recovery Plan for BCM calls for protecting 100 percent of known and newly discovered occurrences as well as protecting 95 percent of the suitable habitat in the Chico region.

Butte County Association of Governments' (BCAG) research in developing the Butte Regional Habitat Conservation Plan was used in setting the location of the three constraint sites. Draft

mapping prepared by BCAG of known occurrences and potential habitat for BCM populations within and surrounding the Planning Area are depicted on **Figure 4.10-3**.

The RCO is applied in conjunction with an underlying land use designation. For purposes of calculating overall densities and intensities of the General Plan build-out, development potential is assumed to be 15 percent of the average development assumed for the underlying land use designation. Land owners of RCO parcels may conduct more detailed studies, including environmental review, and coordinate with resource agencies to determine actual development potential. Such potential may be more or less than the assumed 15 percent, but not more than the maximum allowed development potential allowed by the underlying land use designation.

PROPOSED GENERAL PLAN UPDATE POLICIES THAT ADDRESS BIOLOGICAL RESOURCES

The following proposed General Plan Update policies and actions address biological resources:

Policy LU-2.5 *(Open Space and Resource Conservation) – Protect open space areas with known sensitive resources.*

Action LU-2.5.1 *(Resource Constraint Overlay) – For properties with the Resource Constraint Overlay, which highlights known sensitive resource areas, allow land owners to conduct more detailed environmental studies and coordinate with resource agencies to determine actual development potential. Development proposals for a density or intensity of use above that assumed for the purposes of General Plan projections and the General Plan Update EIR will require additional environmental review.*

NOTE – The Draft EIR assumes that development under this overlay development potential is 15 percent of the average development for the underlying land use.

Policy OS-1.1 *(Sensitive Habitats and Species) – Preserve native species and habitats through land use planning, cooperation, and collaboration.*

Action OS-1.1.1 *(Development-Preservation Balance) – Direct development to appropriate locations consistent with the Land Use Diagram, and protect and preserve areas designated Open Space.*

Action OS-1.1.2 *(Regional Conservation Planning) – Actively participate in regional conservation planning efforts, in particular the Butte County Habitat Conservation Plan process, which seeks the preservation of habitat areas needed for the ongoing viability of native species, sponsored by the Butte County Association of Governments.*

Policy OS-1.2 *(Regulatory Compliance) – Protect special-status plant and animal species, including their habitats, in compliance with all applicable state, federal and other laws and regulations.*

Action OS-1.2.1 *(State and Federal Guidelines) – Ensure that project-related biological impacts are considered and mitigated consistent with local, state and federal regulations.*

Policy OS-2.1 *(Planning and Managing Open Space) – Continue acquisition and management of open space to protect habitat and promote public access.*

Action OS-2.1.1 *(Open Space Plan) – Develop an Open Space and Greenways Master Plan that catalogues the City's open space land holdings, ensures that management and maintenance programs are in place, identifies long-term funding, coordinates with other open space holdings, and prioritizes additional open space acquisitions to enhance connectivity, protect resources, and facilitate public access and circulation.*

Policy OS-2.2 *(Creek Corridors and Greenways) – Expand creekside greenway areas for open space and additional pedestrian/bicycle routes.*

Action OS-2.2.1 *(Creekside Greenway Program) – Continue collecting fees for creekside greenway acquisition, and purchase properties as opportunities arise.*

Policy OS-2.5 *(Creeks and Riparian Corridors) – Preserve and enhance Chico's creeks and riparian corridors as open space for their aesthetic, drainage, and habitat, flood control, and water quality values.*

Action OS-2.5.1 *(Setbacks from Creeks) – Require a minimum 25-foot setback from the top of creek banks for development and associated above ground infrastructure. Analyze the adequacy of a 25-foot setback as a part of project and environmental review and require a larger setback where necessary to mitigate project impacts.*

Policy OS-2.6 *(Oak Woodlands) – Protect oak woodlands as open space for sensitive species and habitat.*

Policy OS-3.1 *(Surface Water Resources) – Protect and improve the quality of surface water.*

Action OS-3.1.1 *(Comply with State Standards) – Comply with the California Regional Water Quality Control Board's regulations and standards to maintain and protect water quality.*

Action OS-3.1.2 *(Runoff from New Development) – Require the use of pollution management practices and National Pollutant Discharge Elimination System permits to control and treat runoff from development.*

Action OS-3.1.3 *(Clean Creeks Project) – Continue implementation of the Chico USA Clean Creeks Project which provides community-wide education regarding storm water runoff, pollution management practices, and the importance of clean creeks.*

Action OS-3.1.5 *(Teichert Ponds Restoration) – Seek funding to implement the Teichert Ponds Restoration Habitat Development Plan, which will enhance storm water quality, wildlife habitat, public access and education at the Teichert Ponds stormwater facility.*

The impact analysis provided below utilizes these proposed policies and actions to determine whether implementation of the proposed General Plan Update would result in significant impacts. The analyses identify and describe how specific policies and actions as well as other City regulations and standards provide enforceable requirements and/or performance standards that address biological resources and avoid or minimize significant impacts.

PROJECT IMPACTS AND MITIGATION MEASURES

Special-Status Species and Sensitive and Critical Habitats (Standard of Significance 1 and 2)

Impact 4.10.1 Land uses and development consistent with the proposed General Plan Update could result in adverse effects, either directly or indirectly on special-status plant and animal species and sensitive and critical habitats in the Planning Area. However, implementation of General Plan Update policy provision would address this impact. Thus, this impact would be considered **less than significant**.

Land use and development consistent with the proposed General Plan Update could result in adverse impacts on special-status species or essential habitat for special-status species in the Planning Area. As indicated in **Tables 4.10-2** and **4.10-3,** numerous special-status species occurrences are known to occur within or near the Planning Area. Any development within areas that are currently undeveloped, such as the SPAs identified for new growth under the General Plan Update, could result in impacts to special-status species. Where there are direct impacts to special-status species, indirect impacts would occur as well. Indirect impacts may include habitat modification, increased human/wildlife interactions, habitat fragmentation, encroachment by exotic weeds, and area-wide changes in surface water flows and general hydrology due to development of previously undeveloped areas.

Habitat Modification

Implementation of the proposed General Plan Update could result in disturbance, degradation, and removal of riparian, wetland, and oak woodland habitats, which are defined as critical and/or sensitive habitat. **Table 4.10-4** identifies the extent of biological communities that include riparian, wetland, and oak woodland habitats that could be converted or disturbed from development, though the Primary Open Space land use designation would provide preservation and protection of some sensitive and critical habitat. Riparian habitats and waters of the U.S., including wetlands, are considered to be sensitive natural communities by CDFG. In addition, the USACE and CDFG have a "no net loss" policy for jurisdictional features.

Development of previously undeveloped land for residential and nonresidential uses could directly modify the habitat of special-status species through construction activities such as

grading and tree removal, as well as development effects such as increased impervious surfaces. Habitat modification could also include increased human presence and fragmentation, as discussed below.

Increased Human/Wildlife Interactions

Development of residential and nonresidential uses would result in increased human presence in areas formerly uninhabited by humans. Additionally, development of previously undeveloped land for residential uses can expose species to impacts from feral and unconfined pets.

Habitat Fragmentation and Edge Effects

Much of the habitat within the Planning Area that may support or is occupied by special-status species is currently interconnected with areas of open space and rural and agricultural uses that generally have limited impacts on plant and wildlife species in the Planning Area. Development within these areas could fragment available habitat. Development of the Planning Area consistent with the proposed General Plan Update could result in small pockets of conserved habitat that are no longer connected by streams and open space, resulting in indirect impacts to species diversity and movement within the Planning Area.

Encroachment by Exotic Weeds

Generally, landscaping installed as part of development in the region has relied heavily on exotic, non-native plant species (ornamentals) for decoration. However, some of these species can spread to natural areas, causing native plant life to be replaced by exotic species. Construction activities, grading, and other ground or vegetation-clearing disturbances can eliminate the native plant population and allow invasive non-native species to become established. As native plants are replaced by exotic species, indirect impacts to the habitat of listed species would occur such as modification or degradation of habitat.

Changes in Hydrologic Conditions

As development occurs, surface water flows and overall hydrology in creeks and other waterways are altered due to an increase in impermeable surfaces through, for example, the placement of building materials and paving over permeable surfaces. In addition, surface water flows are modified due to changes in surface flow by point source stormwater infrastructure installed as well as from the introduction of drainage flows during seasons when waterways and wetland features are typically dry (commonly referred to as "summer nuisance flows"). Some biological communities that contain habitat for special-status species can be indirectly impacted by such changes. For example, seasonal wetlands survive along a rigid set of soil, water, and climatic conditions. Alteration of current inundation and desiccation regimes due to altered hydrology could substantially alter the characteristics of seasonal wetland habitat, resulting in loss or degradation of habitat in developed and undeveloped areas of the Planning Area.

Table 4.10-4 lists the acres of biological communities within the proposed SOI that are designated for some level of development. For the purposes of calculating the acreages shown in **Table 4.10-4**, any acreage with an RCO designation was assumed to be 15 percent of the actual acreage. These biological communities provide potential habitat for, or are known to support, special-status species. Please refer to **Tables 4.10-2** and **4.10-3** for special-status species associated with the Planning Area. It is important to note that the exact nature and degree of development on individual parcels is unknown at this time. The actual acreage ultimately

impacted is expected to be far less than that shown in **Table 4.10-4**, as future development design proposals on a project-by-project basis will be subject to state and federal regulations that protect habitat and species, and the application of proposed General Plan Update policies and actions that address protection of biological resources as discussed further below. It should be noted that impacts to special-status species have been previously addressed in the Northwestern Chico Specific Plan Environmental Impact Report (EIR) (State Clearinghouse No. 2004082087) and the Meriam Park EIR (State Clearinghouse No. 2005072045).

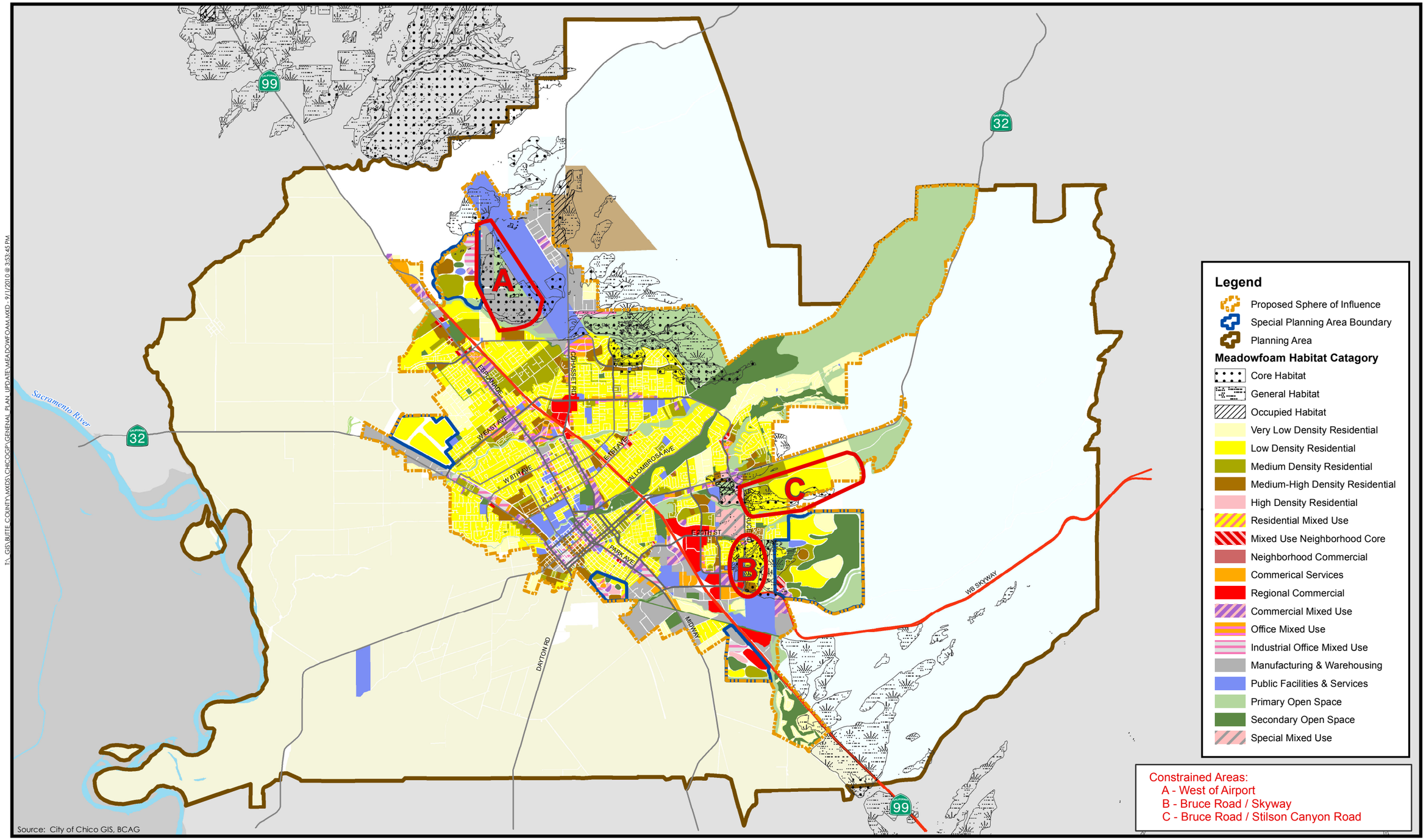

Figure 4.10-3

Butte County Meadowfoam Habitat within and surrounding the Planning Area

TABLE 4.10-4
BIOLOGICAL COMMUNITY ACRES IN THE PROPOSED SOI DESIGNATED FOR URBAN USES[1]

Agriculture	**722.1**
Commercial Mixed Use	6.7
Commercial Services	0.2
Industrial Office Mixed Use	15.8
Low Density Residential	239.2
Medium Density Residential	51.0
Medium High Density Residential	100.1
Mixed Use Neighborhood Core	12.1
Manufacturing and Warehouse	81.6
Neighborhood Commercial	2.1
Public Facilities and Services	203.9
Regional Commercial	2.5
Roadways	2.5
Very Low Density Residential	4.4
Annual Grassland	**1,572.3**
Commercial Mixed Use	35.6
Commercial Services	0.0
High Density Residential	4.9
Industrial Office Mixed Use	44.4
Low Density Residential	188.6
Medium Density Residential	150.6
Medium High Density Residential	66.0
Mixed Use Neighborhood Core	2.9
Manufacturing and Warehouse	137.7
Office Mixed Use	6.5
Public Facilities and Services	637.7
Regional Commercial	0.7
Residential Mixed Use	1.9
Special Mixed Use	186.8
Roadways	2.5
Very Low Density Residential	105.4
Blue Oak Savanna	**123.8**
Low Density Residential	41.6
Medium Density Residential	30.1
Manufacturing and Warehouse	0.037
Very Low Density Residential	52.1
Blue Oak Woodland	**209.3**
Low Density Residential	40.8
Manufacturing and Warehouse	1.6

Public Facilities and Services	29.9
Very Low Density Residential	137.1
Chaparral	**11.2**
Very Low Density Residential	11.2
Cottonwood Willow Riparian Forest	**19.2**
Commercial Mixed Use	1.1
Industrial Office Mixed Use	0.7
Low Density Residential	13.5
Medium Density Residential	1.0
Medium High Density Residential	0.026
Mixed Use Neighborhood Core	0.6
Manufacturing and Warehouse	1.8
Office Mixed Use	0.023
Public Facilities and Services	0.1
Very Low Density Residential	0.4
Disturbed Ground	**94.1**
Commercial Mixed Use	0.020
Manufacturing and Warehouse	54.7
Public Facilities and Services	2.4
Regional Commercial	33.1
Roadways	3.9
Dredger Tailings	**23.4**
Manufacturing and Warehouse	4.1
Regional Commercial	18.6
Very Low Density Residential	0.7
Interior Live Oak Woodland	**24.8**
Very Low Density Residential	24.8
Mixed Oak Woodland	**57.3**
Low Density Residential	8.7
Medium Density Residential	4.0
Very Low Density Residential	44.6
Open Water/Riverine	**3.8**
Commercial Mixed Use	0.3
Low Density Residential	0.1
Medium Density Residential	0.009
Manufacturing and Warehouse	3.4
Office Mixed Use	0.001
Ranchettes Open	**184.9**
Low Density Residential	30.2
Manufacturing and Warehouse	81.1
Very Low Density Residential	73.7

Ranchettes Wooded	**20.4**
Low Density Residential	0.009
Public Facilities and Services	2.0
Very Low Density Residential	18.3
Roadways	0.03
Valley Oak Riparian Forest	**107.5**
Commercial Mixed Use	6.4
Commercial Services	1.3
Low Density Residential	26.6
Medium Density Residential	0.013
Medium High Density Residential	0.034
Mixed Use Neighborhood Core	0.104
Manufacturing and Warehouse	18.0
Neighborhood Commercial	0.005
Public Facilities and Services	30.0
Regional Commercial	1.2
Very Low Density Residential	23.8
Wetlands	**44.6**
Commercial Mixed Use	0.2
High Density Residential	0.012
Low Density Residential	4.3
Medium Density Residential	1.2
Medium High Density Residential	0.8
Manufacturing and Warehouse	3.8
Office Mixed Use	0.1
Public Facilities and Services	9.7
Residential Mixed Use	0.2
Special Mixed Use	0.8
Very Low Density Residential	23.7
Willow Scrub	**12.6**
Low Density Residential	6.2
Medium Density Residential	1.9
Office Mixed Use	0.004
Public Facilities and Services	4.5
Resource Conservation Overlay[2]	
Agriculture	**4.6**
MW/POS	4.6
Annual Grassland	**160.7**
Low Density Residential/POS	70.8
Medium Density Residential/POS	6.2
MW/POS	65.8

Very Low Density Residential/POS	17.9
Blue Oak Savanna	**10.1**
Low Density Residential/POS	8.5
Very Low Density Residential/POS	1.6
Blue Oak Woodland	**9.3**
Low Density Residential/POS	1.5
Very Low Density Residential/POS	7.8
Mixed Oak Woodland	**1.4**
Low Density Residential/POS	0.01
Very Low Density Residential/POS	1.4
Ranchettes Wooded	**0.1**
Low Density Residential/POS	0.1
Valley Oak Riparian Forest	**2.0**
Low Density Residential/POS	1.9
Medium Density Residential/POS	0.1
Wetlands	**1.1**
Low Density Residential/POS	0.7
Medium Density Residential/POS	0.028
MW/POS	0.4
Very Low Density Residential/POS	0.017
Bell Muir	**383.3**
Agriculture	**302.6**
Infrastructure	111.4
Low Density Residential	191.2
Ranchettes Open	**80.8**
Infrastructure	23.7
Low Density Residential	57.0
Diamond Match	**104.3**
Agriculture	**21.1**
Infrastructure	4.2
Industrial Office Mixed Use	0.0
Low Density Residential	11.0
Medium High Density Residential	0.5
Residential Mixed Use	5.3
Disturbed Ground	**83.2**
Commercial Mixed Use	7.6
High Density Residential	17.2
Infrastructure	16.1
Industrial Office Mixed Use	14.7
Low Density Residential	3.1
Medium Density Residential	0.9

Medium High Density Residential	10.3
Office Mixed Use	4.6
Residential Mixed Use	8.7
Doe Mill/Honey Run	**681.7**
Annual Grassland	**390.5**
Commercial Mixed Use	12.8
Infrastructure	58.9
Low Density Residential	153.4
Medium Density Residential	33.0
Medium High Density Residential	8.8
Mixed Use Neighborhood Core	8.9
Public Facilities and Services	6.7
Very Low Density Residential	107.9
Blue Oak Savanna	**141.3**
Commercial Mixed Use	1.7
Infrastructure	49.6
Low Density Residential	40.5
Medium Density Residential	20.8
Mixed Use Neighborhood Core	1.4
Public Facilities and Services	9.6
Very Low Density Residential	17.8
Blue Oak Woodland	**60.8**
Infrastructure	18.6
Low Density Residential	27.3
Medium Density Residential	9.5
Medium High Density Residential	1.3
Very Low Density Residential	4.1
Chaparral	**11.9**
Infrastructure	11.9
Interior Live Oak Woodland	**16.3**
Infrastructure	3.5
Low Density Residential	9.0
Public Facilities and Services	1.7
Very Low Density Residential	2.0
Mixed Oak Woodland	**60.9**
Infrastructure	12.7
Low Density Residential	4.9
Medium Density Residential	27.8
Medium High Density Residential	6.9
Mixed Use Neighborhood Core	8.7
Ranchettes Wooded	**0.001**

Infrastructure	0.001
Wetlands	**0.014**
Infrastructure	0.014
North Chico SPA	**377.8**
Agriculture	**203.8**
Commercial Mixed Use	9.0
Infrastructure	50.8
Industrial Office Mixed Use	33.0
Low Density Residential	1.1
Medium Density Residential	52.9
Medium High Density Residential	47.2
Public Facilities and Services	10.0
Annual Grassland	**169.0**
Infrastructure	43.0
Industrial Office Mixed Use	46.2
Low Density Residential	5.8
Medium Density Residential	70.0
Medium High Density Residential	3.9
Valley Oak Riparian Forest	**3.6**
Infrastructure	2.4
Medium High Density Residential	1.2
Wetlands	**1.4**
Infrastructure	0.020
Industrial Office Mixed Use	0.4
Low Density Residential	0.2
Medium Density Residential	0.8
South Entler SPA	**194.0**
Agriculture	**0.4**
Infrastructure	0.4
Annual Grassland	**102.9**
High Density Residential	9.6
Infrastructure	25.0
Industrial Office Mixed Use	16.6
Low Density Residential	18.2
Medium Density Residential	30.3
Manufacturing and Warehouse	2.5
Regional Commercial	0.7
Cottonwood Willow Riparian Forest	**90.6**
High Density Residential	7.9
Infrastructure	27.5
Industrial Office Mixed Use	4.3

Low Density Residential	2.9
Medium Density Residential	6.3
Regional Commercial	41.7
Wetlands	**0.1**
High Density Residential	0.049
Medium Density Residential	0.028
Willow Scrub	**0.036**
Infrastructure	0.036

Source: SAIC, 2008b

[1] Any minor discrepancies (±1 acre) with total acreages are attributable to rounding errors.

[2] Any acreage with an RCO designation was assumed to be 15 percent of the actual acreage.

NOTE: Table does not include acreage designated as Open Space.

The proposed General Plan Update could result in direct and indirect impacts to special-status plant and animal species. A key goal of the General Plan Update is to produce a compact urban form through balanced growth that relies on infill, redevelopment, and several mixed-use new growth areas. This strategy is intended to reduce the amount of undeveloped land needed to meet the City's future housing and jobs needs when compared to a more "business as usual" sprawling growth pattern. In addition, the proposed General Plan Update policy provisions and Land Use Diagram direct the City to maintain clear urban boundaries, and do not identify areas for significant growth outside of the City's existing Sphere of Influence (SOI). For example, the General Plan Land Use Diagram retains the current Greenline along the western boundary of the City. Ultimately, the Doe Mill/Honey Run SPA is the only new growth area that is outside of the City's existing SOI, or in an area that has not seen significant urban development (e.g., Bell Muir SPA), or in an area that has been previously slated by the City and Butte County for urban development (e.g., the North Chico SPA). Growth accommodated under the proposed General Plan Update seeks to avoid the growth effects of sprawl development patterns, such as the loss of biological resources. Furthermore, the federal Endangered Species Act (FESA), the California Endangered Species Act (CESA), and the California Fish and Game Code protect special-status species through regulatory permitting procedures that include mitigation and compensation requirements.

The Butte County Association of Governments' research in developing biologically sensitive habitat in the BCHCP was used in setting the location of the three Resource Constraint Overlay (RCO) sites on the General Plan Land Use Diagram. The RCO designations acknowledge reduced development potential pending detailed studies, including environmental review, and coordination with resource agencies. As such, the RCO designations will further protect the most sensitive biological resources through detailed environmental review that would determine development potential in the context of the environmental sensitivity of each site. The BCHCP research was also used to designate future growth areas (SPAs) at locations with limited occurrences of special-status species or sensitive habitat.

Although the Butte County Habitat Conservation Plan (BCHCP) (discussed under Regulatory Framework) is currently under development and has not been adopted, the General Plan Update directs the City's active participation in the BCHCP process. Once adopted and implemented, the BCHCP will include a Conservation Strategy that provides a regional approach for the long term conservation of covered species and natural communities while allowing for compatible future land development. BCHCP conservation planning and

implementation at a regional scale allows for creation of a comprehensive natural preserve system that is more efficient in providing for the needs of covered species than the existing project-by-project process. The BCHCP will be particularly effectual in addressing habitat fragmentation and range restriction in that it will provide for the protection of species, natural communities, and ecosystems on a landscape (larger-scale) level, rather than through small pockets of conserved habitat. When the BCHCP is in place, it will include a range of conservation measures for aquatic and terrestrial species and habitats, avoidance and minimization measures, and monitoring and adaptive management plans intended to ensure compliance with, and the effectiveness of, the conservation system.

In addition, Policy OS-1.2 ensures that special-status plant and animal species, including their habitats are protected consistent with all applicable state, federal and other laws and regulations, and the associated Action OS-1.2.1 ensures that project-related biological impacts are considered and mitigated consistent with local, state and federal regulations, which includes compliance with "no net loss" of acreage and values policies of the state and federal agencies (see Regulatory Framework in 4.10.2 above). Individual projects associated with the implementation of the proposed General Plan Update would be required to address and mitigate special-status species and habitat impacts. Thus, this impact would be **less than significant**.

Wildlife Corridors (Standards of Significance 3 and 5)

Impact 4.10.2 Land uses and development consistent with the proposed General Plan Update could interfere with the movement of native resident or migratory fish or wildlife species as well as use of native wildlife nursery sites. These land uses could also restrict the range of special-status species in the Planning Area. This would be considered a **less than significant** impact.

Wildlife movement corridors are routes frequently utilized by wildlife that provide shelter and sufficient food supplies to support wildlife species during migration. Movement corridors generally consist of riparian, woodland, or forested habitats that span contiguous acres of undisturbed habitat. Migratory birds may use the rivers, creeks, and other natural habitats within the Planning Area during migration and breeding. Furthermore, open space provides an opportunity for dispersal and migration of wildlife species. The primary travel corridors available in the Planning Area include the streams and associated riparian habitats which provide adequate cover and vegetation to be used as a migratory corridor for common and special-status fish and wildlife species. Corridors provided by these streams and riparian habitats provide important routes for species moving through the area as well as for local species that use these corridors to spread to new habitat, to mate, and to disperse genetic material. New and intensified development resulting from implementation of the proposed General Plan Update could result in disturbance, degradation, and removal of these important corridors for the movement of common and special-status wildlife species.

The proposed General Plan Update Land Use Diagram and policy provisions include protection for the habitat value of Chico's creeks and riparian corridors. Existing creek corridors are identified on the Land Use Diagram as Primary Open Space, which affords them the City's highest protection. In addition, the General Plan provides for the expansion of creekside greenway areas through the collection of fees for creekside greenway acquisition. The proposed General Plan Action OS-2.5.1 requires a minimum 25-foot setback from the top of creek banks for development and associated above-ground infrastructure. Furthermore, the Action requires that future discretionary and environmental review analyze the adequacy of the 25-foot setback and require a larger setback where necessary to mitigate project impacts. This

policy would assist in reducing impacts associated with the movement and range of wildlife in that it would ensure that stream and riparian corridors were adequately buffered from new or intensified development.

In addition, the conceptual land use plans for the Special Planning Areas, which is where the majority of new development associated with the General Plan Update will occur, identify open space corridors along creeks and ephemeral streams in recognition that site planning, the General Plan policy framework, and the environmental review process will ensure appropriate stream buffers. This is particularly true in the Doe Mill/Honey Run SPA, where Comanche Creek and multiple seasonal streams are located. The Doe Mill/Honey Run SPA conceptual land use plan identifies areas surrounding the creeks as primary and secondary open space and General Plan policy indicates that future planning efforts for the SPA will give special consideration to protect and preserve sensitive habitats, including ephemeral streams and the wetland areas on the western edge of the SPA. The North Chico SPA is located south of Mud Creek and north of Sycamore Creek, which both have flooding considerations. The conceptual land use plan for the SPA identifies primary open space adjacent to both creeks and the General Plan Update states that both creeks will remain primarily unaltered. The South Entler SPA identifies primary open space adjacent to Butte Creek, which is located to the south of the SPA. While the exact extent of impacts to stream corridors in the SPAs is not currently known, the policy framework of the General Plan directs their protection and preservation not only for biological resource purposes, but to protect groundwater recharge and to accommodate flooding.

Open space, including agricultural lands, chaparral, woodlands, and annual grasslands, also provide an opportunity for dispersal and migration of wildlife species. New development in currently undeveloped open space areas resulting from implementation of the proposed General Plan Update could interfere with wildlife migration, and thus restrict the range of special-status species. As previously discussed, the General Plan Update directs significant future growth towards currently urbanized areas via infill and redevelopment, thereby reducing the amount of currently undeveloped land needed for housing, commercial uses, and infrastructure. Ground disturbance and new development associated with the General Plan Update will occur within the City's proposed SOI, particularly in the SPAs that are not currently developed. Development in the SPAs could isolate open space areas from one another and adversely impact these areas and movement corridors. Additionally, construction of roadways and improvement of existing roadways as identified in the proposed Circulation Element could negatively impact drainages and jurisdictional waters of the U.S. Channelization of existing streams, culvert additions, and otherwise engineered or manipulated drainages have been shown to reduce opportunities for some species' movement. The proposed General Plan Update could result in habitat degradation due to additional traffic, increased human presence, and degradation of water quality.

The proposed General Plan Update provides for a compact urban form in the Planning Area and identifies biologically constrained areas (RCOs) within the proposed SOI to protect biological resources through detailed environmental review that would determine development potential in the context of the environmental sensitivity of each site. As growth accommodated under the proposed General Plan Update would be confined to the immediate Chico area and not spread out into the Planning Area, and would avoid the growth effects of sprawl development patterns (as well as growth in known areas of sensitive and critical habitat), the loss of open lands used for wildlife movement and range would be minimized. As shown in the conceptual SPA land use plans and discussed above, the proposed General Plan Update would preserve large areas of open space, including open space adjacent to creeks that would continue to provide movement corridors in the areas of new growth as well as through the Planning Area along creek corridors. If adopted and implemented, the BCHCP will also address

habitat fragmentation and range restriction in the Planning Area in that it will provide for the protection of species, natural communities, and ecosystems on a landscape (larger-scale) level, rather than through small pockets of conserved habitat.

No significant impacts to the Eastern Tehama deer herd movement are expected from implementation of the proposed General Plan Update given the limited extent of outward expansion of development in the eastern portion of the Planning Area in relation to the extent of the Eastern Tehama deer herd migration area (see Figure 13-4 of the Butte County General Plan 2030 Setting and Trends Report).

The compact urban form and conservation provisions included in the General Plan Update would minimize movement and range impacts as discussed above and this impact is considered **less than significant**.

Conflict with Habitat Conservation Plans or Local Ordinances (Standard of Significance 4)

Impact 4.10.3 No Habitat Conservation Plan (HCP), recovery plan, or natural community conservation plan has been adopted encompassing all or portions of the City of Chico. The General Plan Update would not conflict with Chico Municipal Code Chapter 16.66 (Tree Preservation Regulations) that regulates the removal and preservation of trees on undeveloped parcels within the city. Therefore, **no impact** would occur.

Land uses and development consistent with the proposed General Plan Update would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan. Currently, no such conservation plans have been adopted encompassing all or portions of the City of Chico; however, the General Plan Update Planning Area is located within the Butte Regional Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) planning area. This plan is currently under preparation by various local agencies. The geographic area that will be addressed in the Butte Regional HCP/NCCP covers approximately 560,000 acres of the lowland portion of Butte County up to and including the foothill oak woodlands. The proposed General Plan Update includes Action OS-1.1.2 that calls for active participation in the HCP/NCCP. In addition, the proposed General Plan Update would not conflict with the Chico Municipal Code Chapter 16.66 (Tree Preservation Regulations) as the proposed General Plan Update Action OS-6.1.1 specifically requires the city to implement the Municipal Code's tree protection regulation. Thus, **no impact** would occur.

4.10.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The City of Chico and the surrounding area of Butte County as a whole must be considered for the purpose of evaluating land use conversion issues associated with biological resources on a cumulative level. In particular, this cumulative setting condition includes proposed and approved projects, existing land use conditions, and planned development under the proposed General Plan Update, existing land use conditions, and planned and proposed land uses in the region.

Continued development in the city and in the region could directly and indirectly affect biological resources. The development of natural areas could cause loss of wildlife habitats or plant communities. The implementation of the proposed General Plan Update would contribute incrementally to the cumulative loss of native plant communities, wildlife habitat values, special-

status species and their potential habitat, and wetland resources in the county as well as Central Valley region. Growth and urbanization of the City of Chico and other unincorporated county areas in the Chico vicinity cumulatively contribute to the loss of these resources. As demonstrated in the Existing Setting section, the proposed project supports rich and diverse flora and fauna.

The cumulative impact analysis below focuses on the proposed General Plan Update's contribution to the loss of special-status species, sensitive and critical habitat.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Biological Resource Impacts (Standard of Significance 1, 2, 3 and 5)

Impact 4.10.4 The proposed General Plan Update, in combination with other reasonably foreseeable projects, would result in direct and indirect mortality and loss of habitat for special-status species, sensitive and/or critical habitat. This would be a **cumulatively considerable** impact.

Many biological communities within the Planning Area and region are critically important for the protection of several sensitive species. Implementation of the proposed General Plan Update may result in degradation of wildlife habitat through a variety of actions which, when combined with other habitat impacts occurring from development within surrounding areas, would result in significant cumulative impacts. Future development within the City of Chico and the surrounding vicinity would contribute to cumulative impact on special-status species and sensitive and critical habitats. Furthermore, increased development and disturbance created by human activities (e.g., fires, increased nighttime lighting, reduced access to habitat and movement corridors) would result in direct mortality, habitat loss, and deterioration of habitat suitability. These impacts are considered **cumulatively considerable**.

Implementation of the proposed General Plan Update policies and actions described under Impacts 4.10.1 through 4.10.3 would reduce the proposed General Plan Update's impacts to these resources. However, the extent of loss of sensitive and/or critical habitats that the proposed General Plan Update would contribute to the regional loss of these resources is considered considerable. It is anticipated that the eventual implementation of the proposed Butte County Habitat Conservation Plan would address and mitigate regional biological resource impacts. However, this plan has yet to be adopted. Thus, this impact is considered **cumulatively considerable** and **significant and unavoidable**.

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