Section 7

Loss of Sensitive Wildlife and Plant Habitat

This section describes how development associated with the *City of Modesto Urban Area General Plan* (UAGP) would affect sensitive biological resources, wildlife and plant habitat.

A. Environmental Setting

The following information is provided in accordance with Section 15125 of the California Environmental Quality Act (CEQA Guidelines. This environmental setting is the baseline for determining whether an impact of the UAGP is significant.

1. Study Area for Direct Impacts

The study area for sensitive wildlife and plant habitat is the City of Modesto's (City's) planning area.

2. Study Area for Cumulative Impacts

This analysis will be based on the plan or projection approach to examining cumulative effects, as provided under Section 15130(b)(1)(B) of the State CEQA Guidelines. Pertinent plans and projections to be used for this purpose are the UAGP, San Joaquin County General Plan and EIR, and Tuolumne River Regional Park Master Plan (TRRP Master Plan). The study area for cumulative impacts on sensitive wildlife and plant habitat is the San Joaquin Valley, generally extending from the Delta in the north to the Tehachapi Mountains in the south, and between the coastal ranges foothills to the west and the Sierra Nevada foothills to the east.

3. Existing Physical Conditions in the Study Area

a. Vegetation and Wildlife Descriptions

The following vegetation and wildlife descriptions follow the California Department of Fish and Wildlife's (DFW's) Wildlife Habitat Relationships classification system (Mayer and Laudenslayer 1988) and that of California Vegetation (Holland and Keil 1989). A habitat includes those ecological conditions that support an organism or biological population. Communities are naturally occurring assemblages of plants that are relatively consistent in physiognomy and species composition from one location to another. Plant communities and their associated wildlife indicate the presence of a suitable habitat. Ruderal ("weedy"), landscaped, and agricultural plant assemblages are referred to as vegetation or cover types because they are human-induced and not naturally occurring.

Eight (8) habitat types have been identified within Modesto's urban area as supporting various plant communities and wildlife. These include four natural habitats: valley foothill riparian, riverine, wetland, and grassland. The four human-modified habitats are pasture, cropland, orchard-vineyard, and urban habitats. Special-status species with potential to occur in these habitats within the Modesto planning area are addressed in Table E-1 of Appendix E.

(1) Valley Foothill Riparian

Valley foothill riparian habitat is composed of the vegetation and wildlife areas next to rivers and streams. Riparian habitat in the Modesto area occurs along the Stanislaus and Tuolumne Rivers and along Dry Creek. Riparian areas are helpful in maintaining the stability of stream banks and the configuration of streams. Vegetation in this habitat is also beneficial to the quality of stream water since polluting nutrients are absorbed before reaching open water. Common streamside plant species include: willow, cottonwood, box elder, buttonbush, Oregon ash, wild grape, and California blackberry.

Stands of elderberry shrubs may be found in riparian vegetation along the Stanislaus and Tuolumne Rivers. Elderberry shrubs are the host plant for the federally listed (threatened) valley elderberry longhorn beetle (VELB). The understory includes annual grasses and forbs, and old stands are frequently overrun by wild grape. This habitat is a significant natural area known to occur within the general vicinity of Modesto and should be surveyed for when areas next to the riparian corridor are proposed for development.

The importance of riparian areas to wildlife is related primarily to vegetation structure and the presence of water. Riparian habitat provides abundant food, water, escape, nesting, and thermal cover for mammals, birds, amphibians, reptiles, and invertebrates, while also serving as migration and dispersal corridors for these animals (Stanley et al. 1991; Mayer and Laudenslayer 1988). Many invertebrates that are important food sources for other animals live entirely in or near riparian habitats. Amphibians are dependent on these habitats for breeding. Riparian areas provide important refuge areas and winter habitat for migratory bird species in the Pacific Flyway.

Because riparian areas are considered to be of significant inherent value for wildlife, the CDFW and the U.S. Fish and Wildlife Service (USFWS) believe it is necessary to provide mitigation for any net loss of riparian habitats resulting from development of habitat alteration. Figure V-7-1, Riparian and Vernal Pool Locations, delineates at a general plan scale the approximate extent of the riparian corridors containing the Valley Foothill riparian and riverine habitats within the planning area. The riparian corridor boundaries, which should be considered preliminary and subject to refinement as site-specific information becomes available, were determined on the basis of the mapped 100-year floodplain as adjusted by the presence of developed land uses and a review of aerial photographs. Mapped riparian areas include some existing agricultural uses such as orchards, but were included as riparian where within existing levees or the top of bank.

(2) Riverine

Riverine habitat occurs in an association with many terrestrial habitats. Riparian habitats are found next to many rivers and streams. In the planning area, the open water zones of the Stanislaus and Tuolumne Rivers provide resting and escape cover for many species of waterfowl. Terns, bald eagles, osprey, and American peregrine falcon hunt in open water. Many species of insectivorous birds such as swallows, swifts, and flycatchers hunt their prey over water. Many species of bats also hunt insects over riverine habitats. Predators such as river otters and mink hunt in riverine habitat for fish, invertebrates, amphibians, and birds. Muskrat and beaver are common mammals found in this habitat.

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King or Chinook salmon (fall/late fall-run ESU) spawn between October and January east of the City of Riverbank, in the Stanislaus River. Historically, they also occurred in the Tuolumne River and Dry Creek (Brown and Moyle 1993). Another special-status species that potentially occurs in the Tuolumne River is the Sacramento splittail, a large endemic minnow. Splittails require slow-moving sections of rivers containing submerged aquatic or terrestrial vegetation for major portions of their life cycle (Moyle et al. 1989). Hardhead is a California Species of Special Concern which is known to occur in the Stanislaus and Tuolumne Rivers. Hardheads occur in clear and deep pools in slow-moving sections of the river systems. Riverine habitat provides unique cover, sources of food, breeding and spawning, yet cannot be separated from riparian habitat when evaluating for potential impacts.

(3) Fresh Emergent Wetland and Vernal Pool

Fresh emergent wetlands are transitional areas between terrestrial and aquatic systems that include marshes, seasonally flooded grasslands, and the fringes of ponds. Mayer and Laudenslayer (1988) refer to this habitat as fresh emergent wetlands that occur in association with terrestrial habitats or aquatic habitats, such as riverine. These sensitive areas occur next to streams, lakes, and as a result of blockage of normal water run-off channels. Wetlands provide a diverse array of plant and wildlife communities and are considered to be among the most productive wildlife habitats in California. Wetlands are important to amphibians, herons and egrets, waterfowl, and shorebirds.

Vernal pool is a sensitive wetland community that occurs in pastures, grasslands, and woodlands in Stanislaus County. Vernal pools are shallow, ephemeral bodies of water that occupy depressions in grasslands, pastures, and woodlands (Holland and Kiel 1989). These areas fill with water during winter rains and subsequently dry up during the spring and early summer. Vernal pool communities support highly specialized plant and wildlife communities, some of which only occur within vernal pools, and many are endemic to California. Many of these species have adapted two morphologies, one to survive while the pools are flooded and another to reproduce once the pools have dried. Examples of special-status species that are associated with vernal pools in the region include but are not limited to:

- vernal pool fairy shrimp,
- vernal pool tadpole shrimp,
- alkali milk-vetch,
- crownscale,
- vernal pool saltscale,
- succulent owl's clover,
- Hoover's spurge,
- dwarf downingia,
- delta button-celery,

- spiny-sepaled button-celery,
- legenere,
- Merced monardella,
- little mousetail,
- Colusa grass,
- California adder's-tongue,
- San Joaquin Valley Orcutt grass,
- hairy Orcutt grass,
- delta woolly-marbles, and
- Greene's tuctoria.

Much of the area formerly occupied by vernal pools has been converted to agricultural uses. Urbanization has also destroyed many vernal pools and threatens still more (Holland and Kiel 1989). Potential habitat for vernal pools exists east (particularly east of Santa Fe Avenue) and north of Modesto within the Planned Urbanizing Area (Figure V-7-1). The Northern Hardpan Vernal Pool vegetation community (G3, S3.1) has been historically documented within the vicinity of the General Plan study area and sphere of influence. In addition, vernal pool fairy shrimp have been documented in the ditches along the railroad tracks near the Amtrak station site between Held Drive and Santa Fe Avenue (Environmental Sciences Associates 1996).

(4) Grassland

Mayer and Laudenslayer (1988) divide grassland habitat into either perennial or annual grasslands. Grassland habitat is made up of a mixture of annual and perennial grasses, herbs, and wildflowers. For the most part, however, grassland plant communities within the General Plan boundary are dominated by non-native annual grasses with small pockets of native perennial bunch grasses. Native bunch grass communities may not be classified as threatened or endangered but often are considered a sensitive biological community under the CEQA. Native grassland populations have declined greatly in the San Joaquin Valley with the loss of the large herds of grazing animals such as tule elk and pronghorn, species with which they co-evolved (Edwards 1991) and the conversion of native grasslands to agriculture and development. Grasslands can also occur on alkaline soils and support annual grasses and alkaline-tolerant species such as saltbush, alkali weed, saltgrass, gum plant, and poverty weed.

Existing grasslands within the Modesto General Plan study area are associated with native oak savannahs. These savannah/grasslands provide food and cover for shrews, rodents, rabbits, deer, smaller migratory and resident birds, and reptiles. In turn, many of these wildlife species are food sources for snakes, raptors, and carnivores common to grassland communities. One of the primary impacts on grassland communities has been the practice of continuous unplanned grazing that results in the overgrazing of plants and ultimately their decline and loss.

(5) Pasture

Pastures often occur in association with agricultural habitats and may be found next to riparian and grassland habitats. The vegetation is a mix of perennial grasses and legumes that provide 100 percent canopy closure. The vegetation mix varies according to management practices such as seed mixture, fertilization, soil type, irrigation, weed control, the type of livestock, stocking rates, and grazing duration. Pastures are used by a variety of wildlife. Ground-nesting birds such as waterfowl and pheasants nest in pastures if adequate vegetation is present at the onset of the nesting season. Some of the highest pheasant counts have been recorded in irrigated pastures in Stanislaus County (Mayer and Laudenslayer 1988). Flood irrigation of pastures provides feeding and roosting sites for many wetland-associated birds such as shorebirds, wading birds, waterfowl, and raptors. Deer may graze pastures provided there is adequate cover next to the pastures. Special-status species associated with pasture include greater sandhill cranes, which use irrigated pastures for foraging, and burrowing owls, which are known to nest in pasturelands where adequate California ground squirrel burrows exist. Pastures also provide foraging habitat for golden eagles, Swainson's hawks, and white-tailed kites.

(6) Cropland

Croplands occur in association with orchard-vineyard, pasture, grassland, and riparian habitat types. Croplands are characterized by the crop cycles typical of California. Most crops tend to be annuals and are managed in a rotation system. Croplands have been established on the state's most fertile soils, which historically supported an abundance of wildlife. Croplands have greatly reduced the wildlife richness and diversity in the state. However, many species of rodents and birds have adapted to agriculture and are considered pests to crops. Wildlife such as waterfowl and sandhill cranes that use waste grains after harvest are not considered pests or "problem wildlife." Bats, which prey primarily on insects, and raptors such as the special-status species Swainson's hawk, white-tailed kite, and short-eared owl that feed on rodents are beneficial to croplands. Crop patterns and cultural practices that include clean farming, double cropping, and chemical control can be detrimental to wildlife (Robinson 1990; Mayer and Laudenslayer 1988).

(7) Orchard-Vineyard

Orchard-vineyard habitats are generally associated with other agricultural types previously mentioned. They are frequently associated with riparian areas and grasslands. These areas have been planted on deep fertile soils that once supported diverse natural habitats. Like croplands, orchards and vineyards support some species of birds and mammals that have adapted to agriculture. Deer and rabbits may browse on the trees or vines, and squirrels and numerous birds feed on fruit and nuts. Common pests that feed on almonds and walnuts are the common flicker, scrub jay, American crow, Brewer's blackbird, house finch, and the California ground squirrel. Mourning doves use orchards for cover and nesting sites. Evergreen orchards provide refuge for wildlife during inclement weather or act as shade during scorching San Joaquin Valley

summer days. Water used for irrigation can also be utilized by various wildlife species. In western Stanislaus County, the San Joaquin kit fox, a federally listed species, is known to use orchards for den sites.

(8) Urban Area

Urban areas include a variety of plants that are relatively static because of maintenance. Extensive planting of exotic and non-native vegetation in urban areas can reduce the diversity of wildlife species within a region. Three urban categories relevant to wildlife are distinguished by Mayer and Laudenslayer (1988): downtown, urban residential, and suburbia. The downtown is usually at the center followed by concentric zones of urban residential and suburbs. There tends to be a progression outward of decreasing development and increasing vegetative cover. In the downtown area, biodiversity tends to be low, with house mice, rats, rock doves, house sparrows, and starlings composing most of the species. The urban residential zone is characterized by a more varied mosaic of vegetation, providing habitat for jays, mockingbirds, house finch, sparrows, hummingbirds, raccoons, opossum, and striped skunks. Suburban areas with mature vegetation closely approximate a somewhat natural environment and a proportionately greater number of native species occur. Various species of small passerine birds occur in this area along with California quail, deer, rabbits, striped skunk, coyote, gopher snake, and western fence lizard. Burrowing owls, a special-status species, may utilize open areas that have suitable burrows in the Modesto urban area.

b. Special-Status Species

The federal Endangered Species Act (ESA) and California Endangered Species Act (CESA) protect plant and animal species that have become threatened with or endangered by extinction. These regulations are discussed below in detail in Section A-4 below, *Existing Regulatory Policies Applying to the Study Area.* The following discussion identifies those special-status species with potential to occur in the UAGP planning area and sphere of influence (see Appendix E). Potential occurrence of special-status species in the Project Area was evaluated by first determining which special-status species occur in the vicinity of the Project Area through a literature and database search. Database searches for known occurrences of special-status species focused on the Riverbank 7.5 minute USGS quadrangle and the eight surrounding USGS quadrangles, as well as species lists for all of Stanislaus County. In the 2015 analysis, a review of all species addressed in the 2008 General Plan and Table E-1 in Appendix E was conducted and updated with occurrence information or changes in Federal, State, or CNPS status as appropriate. This table was also updated with all additional species found within five miles of the UAGP boundary, as well as all Federal and State-listed species within Stanislaus County, which covers the Modesto Sphere of Influence.

The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the Project Area:

- California Natural Diversity Database (CNDDB) records (CDFW 2015)
- USFWS quadrangle species lists (USFWS 2015)

- CNPS Inventory records (CNPS 2015)
- CDFG publication "California Amphibians and Reptile Species of Concern" (Thomson et. al. 2016)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- Fairy Shrimps of California's Puddles, Pools and Playas (Eriksen and Belk 1999)
- University of California at Davis Information Center for the Environment Distribution Maps for Fishes in California (2015)
- National Marine Fisheries Service Distribution Maps for California Salmonid Species (2013)
- Tuolumne Aquatic Resources Relational Inventory (CDFG 2005)

Federal special-status species include those that are legally protected under the ESA or other regulations and species that are considered sufficiently rare by the scientific community to qualify for listing. Special-status species include the following categories.

1. Species listed or proposed for listing as threatened or endangered under ESA (50 Code of Federal Regulations [CFR] 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the FR [proposed species]).
2. Species that are candidates for possible future listing as threatened or endangered under ESA (71 FR 53755, September 12, 2006).

The federal Migratory Bird Treaty Act protects native migratory birds and their nests. The Bald and Golden Eagle Protection Act protects bald eagles and golden eagles, except under certain specified conditions, from the taking, possession, transportation, export or import, barter, or offer to sell, purchase, or barter a bald or golden eagle, alive or dead, of any part, nest, or eagle egg.

As described above, several special-status species known to Stanislaus County occur in habitat types identified in the planning area. Special-status species that potentially occur in habitats of the Modesto urban area are discussed below. Species discussed herein were determined by consultation with appropriate agencies, information provided by the Habitat Conservation division of CDFW from the CNDDB (2015), and review of the California Native Plant Society (CNPS) online *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2015). Their decline can be attributed to habitat loss and degradation through agriculture and urban development, unplanned continuous grazing, and other human-induced actions.

(1) Special-Status Plants

A total of 38 special-status plant species were addressed in the 2008 General Plan analysis (Table E-1 in Appendix E), including seven species which were identified as having documented occurrences within 5 miles of the UAGP boundary and were

included due to the presence of suitable habitats for these species within the UAGP planning area. A total of 28 special-status plant species were identified as having a high or moderate potential to occur within the UAGP planning area The 2015 update addresses 46 special-status plant species including Federal and State-listed species which have not been documented in the UAGP boundary or vicinity but are identified as having potential to occur in Stanislaus County. A total of 29 special-status plant species identified as having a high or moderate potential to occur within the UAGP planning area were identified in the 2015 update. Big tarplant, which occurs in grassland habitat, is the only species recorded in the CNDDB as occurring within 2 miles of the UAGP boundary (CDFW 2015). This occurrence is documented near Salida but was found in the late 1800s, and the exact location is unknown. Six additional species are recorded within 5 miles of the UAGP boundary, including lesser saltscale, beaked clarkia, delta button-celery, Colusa grass, San Joaquin Valley orcutt grass, and Greene's tuctoria. These species are associated with grassland and vernal pool habitats. The potential for occurrence of these seven species in the UAGP planning area is moderate to high, but they would be more likely to occur within habitats that are minimally disturbed than those that are routinely maintained or intensively used for agriculture.

(2) Special-Status Wildlife Species

(a) Wildlife Species of Special Concern

Several California species of special concern are known to occur in Stanislaus County and adjacent to Modesto (see Table E-2 in Appendix E). While species in this category have suffered declines in breeding populations, they have no special legal status. However, it is in the best interest of any proposed development, as well as the species, to afford it the same protection as legally protected species.

1. Western Spadefoot

The western spadefoot is a California species of special concern. This species prefers areas of open vegetation where the soil is sandy or gravely. Often occurring in washes, floodplains of rivers, playas, and alkali flats, western spadefoot also occur in the foothills and mountains. They breed in quiet streams, stock ponds, vernal pools, and other seasonal/permanent wetlands (Stebbins 2003). Known records for this species occur in western and eastern Stanislaus County (CDFW 2015) and may occur in vernal pool areas in and adjacent to Modesto.

2. Western Pond Turtle

The western pond turtle is a California species of special concern. Western pond turtle is an aquatic turtle that is found in ponds, rivers, streams, and irrigation ditches having a rocky or muddy bottom with a variety of aquatic vegetation. The turtles bask on logs, cattail mats, and mudbanks (Stebbins 2003). Nesting sites are located in upland areas and are typically located on unshaded slopes of canals, creeks, or rivers. The distance of the nests

are often determined by the availability of suitable nesting habitat adjacent to aquatic habitat (Jennings and Hayes 1994). Riparian, riverine, and fresh emergent wetlands in Stanislaus County are suitable habitat.

3. Blainville's Horned Lizard

The Blainville's horned lizard is designated as a California species of special concern. This species occurs throughout the Central Valley and Coast Range from Shasta County south to Baja California. Blainville's horned lizards occur in a variety of habitats, including clearings in chamise chaparral and grasslands with loose, friable soils (Jennings and Hayes 1994). Although extremely limited suitable habitat is present within the General Plan Area, this species may be present in undisked lands with sandy soils and abundant ants for forage.

5. Northern Harrier

The northern harrier is a California species of special concern. It is a medium-sized hawk raptor of upland grasslands and fresh- and saltwater marshes. In California, northern harriers are a permanent resident of the northeastern plateau, coastal areas, and Central Valley (MacWhirter and Bildstein 1996). Northern harriers frequent meadows, grasslands, desert sinks, open rangelands, and fresh- and saltwater emergent wetlands; they are seldom found associated with wooded habitats. Harriers feed mostly on voles and other small mammals, birds, frogs, small reptiles, crustaceans, insects, and rarely on fish (Zeiner et al. 1990). Harriers mostly nest in emergent wetland or along rivers or lakes, but may nest in grasslands, grain fields, or sagebrush flats several miles from water (MacWhirter and Bildstein 1996). The northern harrier may nest and forage in some croplands or pasture lands within the General Plan Area.

6. Burrowing Owl

Burrowing owl is a California species of special concern. Burrowing owls prefer open, dry, mostly flat, short grassland habitats with few trees and are often associated with burrowing mammals such as California ground squirrels. They occupy burrows, typically abandoned by ground squirrels or other burrowing mammals, but may also use artificial burrows or burrow surrogates such as abandoned pipes, culverts, and debris piles (California Department of Fish and Game 2012; Haug et al. 1993). This small owl is known to occur east of the junction of the Tuolumne and San Joaquin Rivers, and northeast of the General Plan Area. The burrowing owl may nest and winter in or along suitable cropland and grassland habitat occupied by ground squirrels or vacant lots with suitable burrow surrogate features (pipes, etc.).

7. Short-Eared Owl

The short-eared owl is designated as a California species of special concern. This species once bred locally throughout California where

suitable habitat was available. This species is not known to nest anymore in the San Joaquin Valley (Remsen 1978). This species is common in winter in marsh and grassland habitat. Destruction of these areas and shooting have reduced the population of the short-eared owls in the San Joaquin Valley and throughout its historic range in California (Remsen 1978). Short-eared owl may winter in suitable grassland habitat within the General Plan Area.

8. Lesser Sandhill Crane

The lesser sandhill crane is a California species of special concern. This subspecies breeds in Alaska but winters in California within the Central and Imperial Valleys. In winter, grains and seeds are the dominant food source for lesser sandhill crane (Littlefield 2008).Pastures, moist grasslands, and shallow wetlands or flooded fields are used for loafing and roosting. Pasture lands, certain croplands, and grasslands within the General Plan Area may be used by lesser sandhill crane during the winter or migration periods.

9. Yellow-Breasted Chat

Yellow-breasted chat is designated as a California species of special concern. This species is a local breeder in the San Joaquin Valley and inhabits riparian woodlands (Remsen 1978). Breeding habitat consists of early successional-type riparian habitats where a dense understory of thickets and tangles forms below an open canopy. Plant species typically used for nesting include blackberry, wild grape, and willows (Shuford and Gardali 2008). Habitat destruction and parasitism of nests by cowbirds are thought to be factors in the decline of the chat (Remsen 1978). Riparian habitat within the General Plan Area may provide suitable nesting habitat.

10. Loggerhead Shrike

The loggerhead shrike is designated as a California species of special concern. Loggerhead shrikes are a widespread breeding species in North America, occurring from the southern Canadian provinces south across most of the United States and into Mexico (Yosef 1996). A common resident of lowlands and foothills throughout California, this species prefers open habitats with scattered trees, shrubs, posts, fences, utility lines or other perches (Humple 2008). Nests are usually built on a stable branch in a dense shrub or small tree. This species is found most often in open-canopied valley foothill hardwood, conifer, pinyon-juniper, or desert riparian habitats.. Loggerhead shrikes are adaptable to urban environments as long as preferred habitat characteristics and abundant prey supplies are present (Yosef 1996). This species may forage and nest in suitable cropland, pasture land, and riparian habitats within the General Plan Area.

11. Chinook salmon, Central Valley Fall/Late Fall- Run ESU

The Chinook salmon fall/late fall-run Evolutionarily Significant Unit (ESU) is a California species of special concern. The Central Valley fall/late fall-run ESU includes all naturally spawned spring-run populations from the Sacramento-San Joaquin River mainstem and its tributaries. The great majority of late-fall Chinook salmon appear to spawn in the mainstem of the Sacramento River, which they enter from October through February; however, some use the San Joaquin River system. The Stanislaus River, Tuolumne River, and Dry Creek are documented to contain fall/late-fall run Chinook salmon. The rivers and creeks within the General Plan Area provide a migration corridor to spawning and rearing habitat.

12. Sacramento Splittail

The Sacramento splittail is a California species of special concern. Splittail are primarily freshwater fish that have been found mostly in slow-moving sections of rivers and sloughs, and in the Delta and Suisun Marsh they seemed to congregate in dead-end sloughs (Moyle 1976, Moyle et al. 1982, Daniels and Moyle 1983). Splittail are benthic foragers that feed extensively on opossum shrimp (*Neomysis mercedis*). However, detrital material typically makes up a high percentage of their stomach contents. Splittail apparently require flooded vegetation for spawning and as foraging areas for young, hence are found in habitat subject to periodic flooding during the breeding season (Caywood 1974). This species is known to occur in the San Joaquin River, and may pass through the rivers and creek within the General Plan Area.

13. Hardhead

The hardhead is a California species of special concern. Hardhead typically inhabit undisturbed areas of larger low- to mid-elevation streams. Most streams achieve summer temperatures in excess of 20 degrees Celsius. They prefer clear, deep pools and runs with sand-gravel-boulder substrates and slow velocities (Moyle 2002). Larval and post-larval fish probably remain along stream edges in dense cover of flooded vegetation or fallen tree branches (Moyle 2002). Hardhead are known to occur in the Stanislaus and Tuolumne Rivers, and may be present in these rivers within the General Plan Area.

14. Townsend's Big-Eared Bat

Townsend's big-eared bats are designated as a California species of special concern, federal candidate species for listing, and a Western Bat Working Group High Priority Species. These bats live in a variety of communities throughout California, including broadleaf forests, oak and conifer woodlands, arid grasslands, and high elevation forests. Roost sites for this big-eared bat include limestone caves, lava tubes, mine tunnels, bridges, buildings, and other human-made structures (Williams 1986; Pierson

1988). Roost sites are known to occur in eastern Stanislaus County; however, Townsend's big-eared bats are extremely sensitive to disturbance at roost sites. This species was documented using a bridge structure for a night roost in the extreme southeast edge of the General Plan Area. Human-made structures on the edges of the General Plan Area may provide suitable non-maternity roost habitat.

15. Pallid Bat

Pallid bats are designated as a California species of special concern and a Western Bat Working Group High Priority Species. This species occurs in a number of habitats ranging from rocky arid deserts to grasslands, and into higher elevation coniferous forests. They are most abundant in the arid Sonoran life zones below 6,000 feet, but have been found up to 10,000 feet in the Sierra Nevada. This bat moves about locally on a seasonal basis, but is not migratory (Jameson and Peeters 1988). During the day, pallid bats roost in buildings, crevices, caves, mines, and hollow trees (Whitaker 1980). The pallid bat has declined due to destruction of maternity roosts. These bats could be expected to occur within the planning area. Pallid bat may roost within the General Plan Area.

16. Western Red Bat

The western red bat is a California species of special concern and a Western Bat Working Group High Priority Species. This species is highly migratory and broadly distributed, ranging from southern Canada through much of the western United States. Western red bats are believed to make seasonal shifts in their distribution, although there is no evidence of mass migrations (Pierson et al. 2006). They are typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas possibly and association with riparian habitat (particularly willows, cottonwoods, and sycamores; Pierson et al. 2006). It is believed that males and females maintain different distributions during pupping, where females take advantage of warmer inland areas and males occur in cooler areas along the coast. Western red bat may roost in trees and shrubs in suitable habitats within the General Plan Area.

(b) Listed Wildlife Species

1. Valley Elderberry Longhorn Beetle

The VELB is federally listed as threatened and is a California special-status invertebrate. This is a is a cylindrical beetle that is less than an inch long; it feeds and lays its eggs on elderberry shrubs in riparian and woodland communities in the Central Valley and surrounding foothills up to 3,000 feet in elevation (Steinhart 1990). VELB is threatened by urban development, insecticides and herbicides, and fluctuation in water levels. Restoration of this species to former habitats includes the protection and

reintroduction of elderberry bushes. Populations of this beetle are known to occur in Stanislaus County (CDFW 2015).

2. Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp is federally listed as threatened and is a California special-status invertebrate. It can be found in vernal pools containing clear to tea-colored water. It is endemic to grasslands in the Central Valley and the central and southern coastal mountains, occurring in grass bottom swales or earth sump or basalt flow depression pools in unplowed grasslands (Nagano 1992). Destruction of habitat is the major threat to this species. Loss of vernal pools is the primary cause for the decline of the tadpole shrimp. Commercial and residential development, agricultural development, off-road vehicle use, water development and flood control projects, and alteration caused by the modification of surrounding uplands have destroyed as much as 90% of the suitable habitat for these species (59 FR 48136–48153, September 16, 1994). The vernal pool fairy shrimp occurs from Tehama County down to Santa Barbara County, in the Central Valley to the Central Coast Range. Vernal pool fairy shrimp are known from a few locations in Stanislaus County and may occur in vernal pools located in or adjacent to Modesto (USFWS 2015, CDFW 2015).

3. Vernal Pool Tadpole Shrimp

The vernal pool tadpole shrimp is federally listed as endangered and is a California special-status invertebrate. This freshwater invertebrate does not occur in riverine or marine habitats or in other permanent bodies of water. They occur in vernal pools and other seasonal wetlands with seasonal fluctuations in their habitat, such as the presence or absence of water at specific times of the year, duration of inundation, and other environmental factors such as salinity and pH levels. Loss of vernal pools is the primary cause for the decline of the tadpole shrimp. Commercial and residential development, agricultural development, off-road vehicle use, water development and flood control projects, and alteration caused by the modification of surrounding uplands have destroyed as much as 90% of the suitable habitat for these species. The vernal pool tadpole shrimp is found east of Redding in Shasta County, throughout the Central Valley to the San Luis National Wildlife Refuge in Merced County, and in a single population at the San Francisco Bay National Wildlife Refuge, Alameda County. Vernal pool tadpole shrimp are known to inhabit a few locations in Stanislaus County and are likely to occur in vernal pools or other temporary water bodies in or near Modesto (USFWS 2015, CDFW 2015).

4. Steelhead, Central Valley DPS

The Central Valley Distinct Population Segment (DPS) of steelhead is federally listed as threatened. The Central Valley DPS includes all naturally spawned populations (and their progeny) in the Sacramento and San Joaquin Rivers and their tributaries, excluding San Francisco and San

Pablo bays and their tributaries. Preferred spawning habitat for steelhead is in perennial streams with cool to cold water temperatures, high dissolved oxygen levels and fast flowing water. During the winter or early spring the spawning fish reach suitable gravel riffles (shallow areas with gravel or cobble substrate) in the upper sections of streams and dig their redds. This DPS is known to occur within the Stanislaus and Tuolumne Rivers. Central Valley DPS steelhead may migrate through the General Plan Area within the Stanislaus and Tuolumne Rivers.

5. Greater Sandhill Crane

The greater sandhill crane is state listed as threatened. In California, this subspecies nests in Siskiyou, Modoc, and Lassen Counties, and does not nest within Central Valley. However, it winters primarily in the Sacramento and San Joaquin valleys, where it frequents annual and perennial grassland habitats, moist croplands with rice or corn stubble, and open, emergent wetlands. It prefers relatively treeless plains. Greater sandhill crane may use suitable pasture lands, croplands, flooded agricultural fields, and shallow wetlands within the General Plan Area during winter and migration seasons.

6. White-Tailed Kite

White-tailed kite is a fully protected species in California. The white-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates.

7. American Peregrine Falcon

The American peregrine falcon is endangered California fully protected species. This species nests on protected ledges of high cliffs in the Coast Range, Sierra Nevada, and other mountains in northern California. Nest locations are often near wetlands, lakes, rivers, and other large water bodies that support prey species. In the winter, peregrine falcons can be found throughout the Central Valley and may occur within the General Plan Area. Peregrine falcons feed on smaller birds that are often captured in flight (Zeiner et al. 1990).

8. Golden Eagle

Golden eagle is a fully protected species in California. It is a year-round resident species that typically inhabits rolling foothill or coastal terrain

where open grassland supports prey species (ground squirrels, jack rabbits, etc.). Habitat destruction, shooting, and human disturbance at nest sites are major threats to this species (Remsen 1978). The golden eagle could be expected to occur as an infrequent forager in nearby grassland habitat.

9. Bald Eagle

The bald eagle is state listed as endangered. It does not nest within the Central Valley but is an occasional winter visitor to the Sacramento and San Joaquin Valleys and surrounding foothills. Bald eagles feed along open waterways of streams and rivers. Riparian/riverine habitats are important wintering areas for this species (Mayer and Laudenslayer 1988). Bald eagle may forage along the Stanislaus and Tuolumne Rivers within the General Plan Area in the winter.

10. Swainson's Hawk

Swainson's hawk is state listed as threatened. This species nests along the Stanislaus and San Joaquin Rivers in Stanislaus County, and in suitable trees within agricultural fields. Swainson's hawks require suitable foraging areas such as short grasslands or alfalfa and grain fields supporting rodent populations next to nesting areas. Known nest sites are located in suitable agricultural habitats surrounding the General Plan Area. Nest sites are also located along Stanislaus River, Tuolumne River, and Dry Creek within the General Plan Area (CDFW 2015).

11. Tricolored Blackbird

The tricolored blackbird is state listed as endangered under an emergency listing by the California Fish and Game Commission[1] and is also designated as a California species of special concern. A state resident, the tricolored blackbird is partly migratory within the Sacramento-San Joaquin drainage system and breeds in the San Joaquin Valley (Grinnel and Miller 1944; Beedy 1989). This species breeds adjacent to fresh water, preferring emergent wetlands with tall, dense cattails or tules, thickets of willow or blackberry, and/or tall herbs. Flooded agricultural fields with dense vegetation are also used (Shuford and Gardali 2008). This species is highly colonial; nesting habitat must be large enough to support a minimum of 30 pairs, and colonies are commonly substantially larger (up to thousands of pairs). The tricolored blackbird often intermingles with other blackbird species during the non-breeding season. Croplands, pasture lands, and some wetland habitats within the General Plan Area may provide suitable habitat for tricolor blackbird.

[1] California Fish and Game Commission emergency listing December 3, 2014. Status of endangered December 29, 2014 through June 30, 2015 with potential to be extended.

4. Existing Regulatory Policies Applying to the Study Area

Below is a comprehensive list of major federal, state, and local (County and City) laws, regulations, and policies or summaries of these requirements that apply to the study area. This list provides the full range of applicable policies that a project within the study area would potentially need to comply with, including policies beyond the jurisdiction of the City. This list of laws, regulations, and programs also serves to describe the circumstances under which the Master Environmental Impact Report (Master EIR) analyzed this environmental topic.

A discrete reference number, following the initials of the resource topic, is assigned to each policy listed to facilitate its identification elsewhere in this Master EIR or, where appropriate, their application to subsequent projects analyzed under this Master EIR. All reference numbers in this section are designated as SWPH-*X* (Sensitive Wildlife or Plant Habitat), where *X* is the discrete number.

a. Federal Regulations

The ESA establishes a national policy to protect threatened and endangered wildlife and plant species and foster their recovery. Animals and plants listed as threatened or endangered by federal action under the act are subject to special protection. The ESA requires federal agencies to ensure that their actions, and actions which they fund, license, or permit, do not result in the "take" of threatened or endangered species. *Take* is defined as activities which harm, harass, pursue, injure, or kill members of the species. This includes modification or degradation of habitat that kills or injures wildlife.

The federal Migratory Bird Treaty Act of 1918 (MBTA) provides general prohibitions against the unauthorized harvesting or take of "migratory birds" (including their eggs and young) in the United States. The MBTA makes it illegal to "pursue, hunt, take, capture, or kill" as well as to sell or possess covered species or their nests without a waiver. Based on subsequent amendments to the MBTA, the vast majority of species native to North America are now covered. The law applies to the removal of nests occupied by migratory birds during the breeding season, and deliberate destruction of active nests with eggs and/or young or possession of bird nests is illegal.

SWPH-1: The federal ESA is intended to protect threatened and endangered wildlife, fish, and plant species and their habitat, and to foster their recovery. Animals and plants listed as threatened or endangered by federal action under the act are subject to special protection. The ESA requires federal agencies to ensure that their actions, and actions which they fund, license, or permit, do not result in the "take" of threatened or endangered species.

If a proposed project authorized, funded, or carried out by a federal agency might affect a listed species, then, under Section 7 of the act, the federal agency must consult with the USFWS regarding the potential for take. The USFWS will issue a biological opinion that includes measures to minimize or avoid project impacts and may issue an incidental take permit that essentially allows accidental losses. This requirement affects private projects that have some level of federal involvement (i.e., issuance of a Section 404 permit under the Clean Water Act (CWA), delivery of federal surface water supplies by the Bureau of Reclamation and federal crop subsidies under the Department of Agriculture, funding by the Department of Housing and Urban Development, and funding of highway projects by the Federal Highway Administration).

SWPH-2: If a proposed project does not involve a federal agency, but is likely to result in take of a species listed under the ESA, the project proponent must apply to the USFWS for an incidental take permit under Section 10 of the ESA. The measures to avoid or minimize take will be incorporated into a habitat conservation plan, and an incidental take permit may be issued. Section 9 of the ESA authorizes the USFWS to act against individuals and agencies if any unauthorized take occurs.

SWPH-3: The USFWS is concerned over the incremental loss of rare vegetation communities in the Central Valley. In the opinion of the USFWS, such losses will hinder the ability of local jurisdictions to develop effective land use strategies for the preservation of listed wildlife and plant species. Therefore, the USFWS recommends that mitigation be required for any impacts to rare communities, even if they were previously disturbed. Typically the USFWS recommends a minimum replacement rate of 3 acres of habitat preserved in perpetuity for each acre destroyed or degraded, though project-specific mitigation ratios will be determined through coordination with the USFWS.

SWPH-4: The federal CWA (33 U.S.C. Section 121 et seq.) establishes regulations for the protection of waters from pollution. Section 404 of the Act establishes a permit program, administered by the U.S. Army Corps of Engineers (USACE), regulating the discharge of fill material into "waters of the United States," including wetlands (USACE 33 CFR 328.3). Discharges can be authorized by either individual or general (i.e., nationwide) permits. The USACE regulates the discharge of dredged fill material for non-water-dependent uses into special aquatic sites, including wetlands and vernal pools. Filling of these features may occur only if there is no practicable alternative that would have less adverse impact. An alternatives analysis is required prior to issuance of a permit by the USACE. The stream channels of the Tuolumne and Stanislaus Rivers and Dry Creek would be subject to Section 404 jurisdiction. Other wetlands, such as fresh emergent wetlands and vernal pools, would potentially be subject to Section 404 regulation, but would need to have a hydrologic connection to one of the rivers or creeks to qualify as a water of the United States. Where filling of a water of the United States would affect a threatened or endangered species, as may happen in vernal pools, the USACE would consult with the USFWS regarding compliance with the ESA.

Separately, Executive Order 11990 (issued by President Clinton) avoids direct or indirect support of new federal construction in wetlands whenever practical alternatives exist. In the context of the Master EIR, it applies to actions undertaken or funded by the federal government, such as issuance of "incidental take" permits by the USFWS, individual Section 404 permits by the USACE, and federally funded state or local road projects. The order stipulates that new construction must provide the public an opportunity for review of proposed activities, evaluate practical alternatives, and identify practical measures to minimize the harm to wetlands.

All projects that have a federal component and that may affect state water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with Section 401 of the CWA. Thus, applicants for a Section 404 permit must also obtain certification from the Regional Water Quality Control Board (RWQCB). For effects on wetlands that are not under USACE jurisdiction, and therefore are not regulated under Section 404, applicants must still consult with the RWQCB for effects on waters of the state. The RWQCB generally issues waste discharge requirements for these effects.

b. State Regulations

SWPH-5: The CDFW is responsible for maintaining all native fish, wildlife, plant species, and natural communities in California for their intrinsic and ecological values as well as for their direct benefits to people. The CDFW also administers the CESA. The CESA applies to plant and animal species that have been listed as threatened or endangered by the State Fish and Game Commission. CESA's policies protect, restore, and enhance threatened or endangered species. The CESA mandates that state agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species, if reasonable and prudent alternatives are available. The CDFW may issue an incidental take permit when the potential impacts to listed species can be fully mitigated and the project proponent has committed to that mitigation (Fish and Game Code 2080 et seq.).

SWPH-6: The CDFW is also responsible for the streambed alteration agreements program. Under Fish and Game Code 1600, et seq, activities that would result in the diversion, obstruction or change in the natural flow or bed, channel or bank of a stream, lake or river; would use materials from a streambed; or would result in the deposition of debris, waste, or other material into a streambed must first be approved by the CDFW through issuance of a streambed alteration agreement. The purpose of the streambed program is to limit damage to stream habitats. Streambed Alteration Agreement requirements would apply to Dry Creek, the Tuolumne and Stanislaus Rivers, and all of the canals within the Modesto General Plan Area.

SWPH-7: Special-status species under the CESA or other state regulations, or that are listed by the CNPS, include the following categories.

- Species listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 California Code of Regulations [CCR] 670.5).
- Species meeting the definitions of rare or endangered under CEQA (State CEQA Guidelines, Section 15380).
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.).
- Plants considered by CNPS to be "rare, threatened, or endangered in California" and included in CNPS Ranks1B and 2B (California Native Plant Society 2015). Plants included in Rank 1A of the CNPS Inventory are presumed extirpated in California and rare or extinct elsewhere, and plants included in Rank 2A are presumed extirpated in California but common elsewhere. As plants with these rankings could potentially be rediscovered in California, they should be considered during the preparation of environmental documents relating to CEQA. Plants on List 1B of the CNPS Inventory are considered rare, threatened, or endangered in California and elsewhere, are eligible for state listing, and are likely to meet the biological criteria that require the plants to be considered under the State CEQA Guidelines.
- Plants listed by the CNPS as plants about which more information is needed to determine their status and plants of limited distribution (Ranks 3 and 4 in CNPS 2015), but that may be included as special-status species on the basis of local significance or recent biological information. Plants on the CNPS Rank 4 list are plants of limited distribution that are of local significance and should be considered during the preparation of environmental documents.
- Animal species of special concern to the CDFW (CDFW 2015, Thomson et al. 2016, Shuford and Gardali 2008).

- Animal species fully protected in California (California Fish and Game Code, Section 3511 [birds], Section 4700 [mammals], and Section 5050 [reptiles and amphibians]).
- In addition to the above, nesting birds and raptors are protected under Sections 3503 and 3503.5 of the California Fish and Game Code.
- State-listed, candidate, and species-of-special-concern plant and animal species possibly occurring around the City of Modesto, their status, and habitats are presented in Appendix E.

  California "species of special concern" have no special legal status. Species in this category are those whose breeding populations in the state have declined severely, limited ranges, and/or other threats continue such that there is potential for extirpation within California (CDFW 2015). This list is to help land management agencies, developers, landowners, and the general public take action to protect these declining populations before they become threatened or endangered.

SWPH-8: The California River Greenways Program of the State Lands Commission has policies that reflect the goals of protecting, restoring, and maintaining the riparian vegetation, and providing recreational use and public access, as appropriate, to and through riparian areas.

c. Stanislaus County General Plan Policies

The following Stanislaus County General Plan policies are applicable to the unincorporated portion of the Modesto Planning Area:

SWPH-9: Conservation / Open Space Element One: Encourage the protection and preservation of natural and scenic areas throughout the County.

SWPH-10: Conservation / Open Space Element Two: Conserve water resources and protect water quality in the County.

d. City of Modesto Policies

The UAGP provides the following policies related to sensitive wildlife and plant habitat.

(1) Baseline Developed and Downtown Areas

SWPH-11: For proposed development consistent with the adopted Urban Area General Plan on lands within the Baseline Developed Area and Downtown, exclusive of lands within the Dry Creek and Tuolumne River Comprehensive Planning Districts, an assessment of whether any potential habitat for special-status species is present within proposed development areas shall be made. No further biological study is warranted unless habitat is present or if specific information concerning the known or potential presence of significant biological resources is identified in future updates of the California Natural Diversity Database, or through formal or informal input received from resource agencies or other qualified sources (UAGP Policy VII-E.2[a]).

(2) Planned Urbanizing Area

Focused EIRs for Comprehensive Plans in the Planned Urbanizing Area shall incorporate the following measures.

SWPH-12: For all lands within the Planned Urbanizing Area, site-specific surveys shall be conducted by a qualified biologist to determine whether any sensitive natural communities or species are present within the proposed development area. These studies shall particularly focus on proposed development within any lands included within a potential biological resource study area as delineated on Figure V-7-1 in the Final Master Environmental Impact Report (Riparian Corridor Diagram). Prior to considering development applications, the City shall coordinate with the USFWS and CDFW regarding listed species and potential for impacts. The City shall employ the measures recommended by the USFWS and/or CDFW to avoid an incidental take.

Conduct surveys at the appropriate season to best determine the likelihood of occurrence and should employ accepted methodologies as determined by CDFW and the USFWS. The results of such surveys should be recorded onto the City's existing biological resources map for future planning purposes. (UAGP Policy VII-E.3[a])

SWPH-13: Avoid and preserve all areas occupied or potentially occupied by special-status species, where feasible. Protect areas that can be avoided by fencing, signage, or establishment of buffer zones appropriate to the species and/or habitat involved. Design fencing to allow passage of small mammals and avoid impacts to wildlife movement or dispersal. Generally, a minimum 100-foot buffer of undeveloped land from identified sensitive resources would be necessary. Improve this buffer area through sustainable habitat restoration. Require protected habitat to be managed so as to contribute to the long-term conservation of the species and ecosystems on which they depend.

Where it is determined that state and/or federally listed species are present, consult with the CDFW and/or USFWS in accordance with the California and/or federal Endangered Species Acts to determine mitigation measures to avoid and minimize impacts to those species. If other special-status species are determined to be present and cannot be avoided, implement species-specific mitigation measures to minimize impacts to those species through informal consultation with CDFW and/or USFWS. Incorporate the mitigation measures and other recommendations of these agencies into the development plan. (UAGP Policy VII-E.3[b])

SWPH-14: Additional measures to protect sensitive habitats may be implemented. Potential measures to be implemented may include measures listed in Table V-7-1 in the Final Master Environmental Impact Report. (UAGP Policy VII-E.3[c])

Table V-7-1. Policies For Sensitive Biological Habitats

(Note: This table does not use the standard nomenclature in order to be consistent with the reference contained in the Urban Area General Plan.)

a.	Avoid disturbance in wetland areas, including vernal pools and riparian communities along rivers and streams. Avoidance of these areas would include implementing a no-disturbance buffer of at least 100 feet from the high water mark of channels that have no riparian vegetation and 250 feet from the outermost high water edge of the all marsh wetlands, vernal pools, and swales. Riparian vegetation shall be protected with a 200-foot wide no-disturbance buffer delineated from the high water mark of the surface water body. If complete avoidance is not possible, the disturbance to wetland areas shall be minimized to the maximum extent possible, with restoration of the disturbed area provided. The topsoil within the wetland shall be removed and kept separate from other spoils to be used in restoration. New vegetation should consist of similar native species to those removed. Activities with the potential to impact wetlands shall occur only under permit (either individual or nationwide) from the U.S. Army Corps of Engineers. Prior to development, wetland areas shall be delineated by a qualified biologist in accordance with the delineation standards of the Corps.
b.	Where wetlands or other sensitive habitats cannot be avoided, replacement habitat at a nearby off-site location shall be provided in accordance with the requirements of the applicable federal or state agency. The replacement habitat should be substantially equivalent to the nature of the habitat lost and should be provided at a ratio suitable to assure that, at a minimum, there is no net loss of habitat acreage or value. The replacement habitat shall be set aside in perpetuity for habitat use. Typically, the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Wildlife require a minimum of two replacement acres for every one acre of riparian or wetland habitat lost.
c.	Confine work in or near streams, wetlands, and vernal pools to the dry season between May 1 and October 15. Minimize road widths at stream or wetland crossings, and construct roads at right angles to reduce adverse impacts to riparian corridors.
d.	Preserve existing and mature native trees to the extent feasible, except when such trees are diseased or otherwise constitute a hazard to persons or property. During construction, all activities and storage of equipment should occur outside the drip lines of any trees to be preserved.
e.	All areas within identified riparian corridors shall be maintained in a natural state, or limited to recreation and open space uses. Recreation should be limited to passive forms of recreation, with any facilities constructed to be non-intrusive to wildlife or sensitive species.
f.	New landscaping within or immediately adjacent to the identified riparian corridors should employ native species ecologically consistent with natural riparian habitats.
g.	Within the identified riparian corridors, environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses consistent with these values shall be allowed (e.g., nature education and research, fishing, habitat enhancement and protection).
h.	In accordance with the MBTA and CFGC and to avoid disturbance to active bird nests, any tree or shrub removal shall occur during the nonbreeding season for birds (September through January). If construction activities or tree removal must occur during the breeding season (February through August), surveys for active nests shall be conducted by a qualified biologist no more than 30 days prior to the start of construction. A no-disturbance buffer determined by a qualified biologist and dependent upon species and nest location of up to 250 feet shall be delineated around active nests until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.
i.	The General Plan Area may contain elderberry shrubs. All projects within the General Plan Area should evaluate the project site conditions for the potential for removal of elderberry shrubs. If elderberry shrubs with one or more stems 1.0 inch or greater in diameter at ground level are present, appropriate mitigation should be discussed and prior to any subsequent project approvals, early consultation with USFWS is recommended. The removal and trimming of elderberry shrubs is regulated by the USFWS.

j. Burrowing owls are known to occur near the General Plan Area in agricultural and grassland habitats and vacant lots within developed habitats. Impacts to burrowing owls and their nest burrows must be avoided in order to comply with the Federal Migratory Bird Treaty Act (MBTA) and Department of Fish and Game Code Sections 3503, 3503.5, and 3513. Per CDFW's Staff Report on Burrowing Owl Mitigation (CDFG 2012), if any ground-disturbing activities occur in potential burrowing owl habitat during the nesting (February 1 through August 31) or non-nesting season (September 1 through January 31), implementation of avoidance measures is required. A burrowing owl habitat assessment is recommended for areas containing potentially suitable habitat: agricultural, grassland, and vacant parcels if at least 2.5 acres in size or contiguous with undeveloped habitat of at least 2.5 acres in size. Agricultural habitat determined to be suitable includes pastureland, non-irrigated cropland, and ruderal or fallow fields; orchards, vineyards, and other active croplands with vegetation greater than 15 inches in height are not considered suitable habitat. Vacant or ruderal parcels are considered potentially suitable habitat if ground squirrels, debris piles, and/or pipes are present to provide burrows or burrow surrogates for burrowing owl to occupy.

   If burrowing owl habitat is confirmed present within a maximum of 500 feet of the project site, no visual barriers are present between the project site and the burrowing owl habitat, and no owls were observed to occupy the habitat at the time of the assessment, then one preconstruction site survey (take avoidance survey) shall be conducted no more than 14 days prior to the onset of any ground-disturbing activities. Further, if the preconstruction survey determines that burrowing owls occupy the site and impacts to occupied burrows cannot be avoided, then passive relocation shall be conducted as described below during the non-nesting season or if the burrowing owl(s) are determined to not be actively nesting. Prior to passive relocation, a burrowing owl exclusion, mitigation, and monitoring plan will be prepared in accordance with the CDFW Staff Report on Burrowing Owl Mitigation (CDFG 2012) and submitted to the City for approval before any constructive activities can proceed that may impact the species.

   The Staff Report on Burrowing Owl Mitigation (CDFG 2012) recommends that impacts to occupied burrows during the nesting season be avoided by implementation of a no-disturbance buffer zone of a minimum of 250 feet, unless a qualified biologist verifies through noninvasive methods that either: 1) the burrowing owls have not begun egg laying and incubation; or 2) that juveniles from the occupied nest are foraging independently and are capable of independent survival. Failure to implement this buffer zone could cause adult burrowing owls to abandon nests, cause eggs or young to be directly impacted (crushed), and/or result in reproductive failure. Burrowing owls may be passively relocated if the burrowing owls have been determined not to be actively nesting and the burrowing owl exclusion, mitigation, and monitoring plan has been approved by the City and CDFW.

k. The State-threatened Swainson's hawk is known to nest within the General Plan Area in grassland, riparian, and agricultural habitats. Because of the loss of suitable foraging habitat and existing nesting habitat that may occur during area development, mitigation measures compensating for these potential losses of habitat shall be included. The CDFW considers the removal of known raptor nest trees, even outside of the nesting season, to be a significant impact under CEQA and, in the case of Swainson's hawk, could also result in "take" under the CESA. This is especially true in species such as Swainson's hawk, which exhibit high site fidelity to nest trees and nesting area year after year (CDFG 1994).

   To avoid such impacts, surveys for nesting Swainson's hawk shall be conducted for projects within riparian, grassland, and agricultural habitats as mapped by Figure V-7-1 or for projects within 0.25 mile of such habitats (see Figure V-7-2) and containing potential nest trees (trees greater than 20 feet in height). Surveys shall follow the methodology developed by the Swainson's Hawk Technical Advisory Committee (2000) and survey potential nest trees within 0.25 mile of disturbance activities.

   - If ground disturbance is initiated during the nesting season (March 15 – July 31), two pre-construction surveys shall be conducted with surveys not recommended between April 20 and June 10 because of difficulty in detecting active Swainson's hawk nests during the egg incubation period. The first survey may be conducted up to two months prior to initial activities. The second survey shall occur within 14 days of project initiation.
   - If an active nest is observed, a no-disturbance buffer zone shall be established in coordination with CDFW. No-disturbance buffers for new and intensive disturbances are typically 0.25 mile surrounding

the nest location until the nest has been determined to no longer be active by a qualified biologist; however, the buffer may be reduced in consultation with CDFW and is dependent upon nest location, existing disturbance barriers, and baseline disturbance levels.

- No surveys are required if ground disturbance is initiated outside of the nesting season; however, impacts to known nest trees should be avoided at all times of year. If avoidance of a known nest tree (documented nest site within the previous five years) is not feasible, consultation with the CDFW is warranted prior to taking any action, and a determination of "take" potential under CESA or under Fish and Game Code Sections 3503.5 and 3513 will be made. Project-related "take" (as defined in Section 86 of the Fish and Game Code) of Swainson's hawk must be completely avoided or a State Incidental Take Permit, pursuant to Section 2081 of the Fish and Game Code, would be warranted.

In addition, the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California (CDFG 1994) recommends that for projects impacting foraging habitat within one mile of an active nest tree, habitat be protected in perpetuity at a 1:1 ratio for each acre of Swainson's hawk foraging habitat impacted; for projects greater than one mile but within five miles of an active nest tree, 0.75 acre of habitat should be protected in perpetuity for every acre of foraging habitat impacted (0.75:1); and for projects greater than 5 miles but within ten miles of an active nest tree, 0.5 acre of habitat should be protected in perpetuity for every acre of foraging habitat impacted (0.5:1). Per the Staff Report (CDFG 1994), suitable foraging habitat includes annual grasslands, pasturelands, alfalfa and cereal cropland, fallow fields, and beet, tomato, and other low-growing row or field crops. Vineyards, orchards, and cotton fields are considered unsuitable foraging habitat because of vegetation height and/or density (CDFG 1994). The project sponsor should provide funding of a sufficient long-term endowment for the management of the protected properties.

(3) Comprehensive Planning Districts in Riparian Corridors

SWPH-15: All three riparian corridors within the planning area (Dry Creek, Stanislaus River, Tuolumne River) are designated as Comprehensive Planning Districts under the Urban Area General Plan. Development within these areas will be subject to a Comprehensive Plan and a Focused EIR prepared for that plan (UAGP Exhibit III-1). Preparation of a Park Master Plan shall suffice as the Comprehensive Plan for these areas. However, until a Park Master Plan is completed for these areas, the Tuolumne River Regional Park Master Plan shall be the guiding plan for the Dry Creek CPD. The TRRP Master Plan shall suffice as the Comprehensive Plan for Tuolumne River Comprehensive Planning District. The Comprehensive Planning Districts for these three corridors specify that land uses will be limited to "open space" use (i.e., low-impact recreational facilities, public ownership, agriculture, low-density residential uses not exceeding one dwelling per ten acres). Other open space policies specific to the riparian corridors require that riverfront vegetation be consistent with riparian habitat, environmentally sensitive habitat areas be protected against significant disruptions of habitat values, and land uses be limited to those dependent on the riparian resource. (UAGP Policies VII-B.7[j] through [q]) Measures in Table V-7-1 shall also apply to the Comprehensive Planning Districts for the riparian corridors.

The Dry Creek Comprehensive Planning District intends for its 510 acres to become a linear park (UAGP Exhibit II-5). The 810-acre Stanislaus River Comprehensive Planning District is to become a regional park (UAGP Exhibit II-21).

The Tuolumne River Comprehensive Planning District contains 1,380 acres, including a significant amount of public land owned by a joint-powers authority (JPA) made up of Modesto, Ceres, and Stanislaus County. It is a Regional Park designed to serve the residents of Modesto, Ceres, Stanislaus County, and the greater San Joaquin Valley area (UAGP Exhibit II-24). The JPA has completed and the City has certified a Master EIR for the Tuolumne River Regional Park (TRRP) Master Plan. The TRRP Master EIR contains mitigation measures addressing impacts on sensitive plant and wildlife habitat relating to recreation facility development and conservation activities within the TRRP.

5. Policies That Reduce or Avoid Impacts

The following City policies are in effect and have been determined to reduce, avoid, or mitigate environmental impacts within the existing city limits and within the UAGP area. Federal and state policies are included because they reduce or avoid cumulative impacts. The policy reference numbers are listed below, the full text of these policies is found above in Section A-4 above, *Existing Regulatory Policies Applying to the Study Area.*

a. Federal Policies

Enforcement of the federal CWA, the ESA, the CESA, and related regulations will minimize future impacts on wildlife and plant habitat, including cumulative impacts. Federal policies include SWPH-1 through SWPH-4.

b. State Policies

Enforcement of the CESA, Streambed Alternation Agreement statute, and related regulations will minimize future impacts on wildlife and plant habitat, including cumulative impacts. State policies include SWPH-5 through SWPH-8.

d. City of Modesto Policies

The following existing or proposed UAGP policies would mitigate or avoid impacts to sensitive wildlife and plant habitat.

1. Baseline Developed and Downtown Areas: SWPH-11
2. Planned Urbanizing Area and riparian areas: SWPH-12 through SWPH-15

B. Consideration and Discussion of Significant Impacts

The following information is provided in accordance with State CEQA Guidelines Section 15126.2.

1. Thresholds of Significance

CEQA directs agencies to analyze effects on biological resources using Appendix G of the State CEQA Guidelines and the "mandatory findings of significance" (Section 15065). Appendix G of the State CEQA Guidelines offers the following broad suggestions for impact assessment. Would the project:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?

d. 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?

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

2. Significant Direct Impacts

a. Impacts within the Baseline Developed Area and Downtown

There is low potential for impacts on sensitive wildlife and plant habitats within the Baseline Developed Area. Other than lands within the designated riparian corridors, most of the land projected for development within the Baseline Developed Area are vacant lands generally characterized by weedy, non-native vegetation and habitats of limited value. Implementation of policy SWPH-11 would address potential impacts in these areas. Potential impacts within these areas, therefore, would be less than significant.

b. Impacts within the Planned Urbanizing Area

The UAGP envisions urban development over the next 20+ years within approximately 21,625 acres that fall within the Planned Urbanizing Area. The majority of this land is in agricultural use, including orchards, pasturelands with vernal pool grasslands, and some scattered urban uses. The projections of approximately 150,000 residents and 120,000 employees to be accommodated in the Planned Urbanizing Area consistent with the UAGP would convert much of this area to urban uses, thereby reducing the acreages of grassland, crops, and pastureland.

Biologically sensitive areas within the Planned Urbanizing Area include land within the riparian corridors, riverine habitat, fresh emergent wetlands, and grasslands east of the Burlington Northern and Santa Fe Railway that may support vernal pools. Development within the Planned Urbanizing Area has potential to affect these sensitive habitats, special-status species that can occur in these habitats, and wildlife and fish movement corridors (Tables E-1 and E-2 in Appendix E). The impact of development in the Planned Urbanizing Area on these habitats would be less than significant with implementation of UAGP policies described above, measures in the TRRP Master Plan and Master EIR, and other regulations that will apply to future development (i.e., the CWA, California Fish and Game Code, the ESA, and CESA).

(1) Potential impacts, either directly or indirectly through habitat modification on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service

Adherence to the following policies included in the Urban Area General Plan, and compliance with federal and state regulations, would ensure that any future direct or indirect impacts to candidate, sensitive or special-status species would be reduced to a less than significant level as development is proposed and implemented in the Modesto Planning area pursuant to the General Plan:

- SWPH-12: requires site-specific surveys for sensitive natural communities or species prior to development.
- SWPH-13: Avoid and preserve areas occupied by special-status species where feasible. Where avoidance is not feasible, protect these areas with fencing, signs and or buffer zones.
- SWPH-14: Include additional protection measures for sensitive habitats.
- SWPH-15: Table V-7-1 presents additional environmental protections.

(2) Result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service or have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means.

The UAGP designates all riparian corridors within the planning area as open space. This designation decreases the potential impacts on valley foothill riparian, riverine habitat, and associated fresh emergent wetlands within those corridors by limiting the intensity of potential land uses. Development of recreational facilities or other open space uses will be subject to the policies of the Planned Urbanizing Area which will ensure that development will be required to meet the protective federal and state laws and regulations. A master plan has been developed for the TRRP, and a master plan will be prepared for the Dry Creek Comprehensive Planning District. These two areas encompass all riparian, riverine, and associated fresh emergent wetland habitats in the Planned Urbanizing Area. Project-specific measures to protect the riparian corridor will be required when the master plan is prepared for the Dry Creek Comprehensive Planning District. The measures implemented to protect riparian, riverine, and wetland habitats including designation of riparian corridors as open space will also ensure that wildlife and fish movement and migration corridors will not be significantly impacted. ımplementation of the following policies would ensure that impacts would remain less than significant: SWPH-4 (federal endangered species law), SWPH-6 & SWPH-8 (state-listed species laws) and SWPH-13 & SWPH-14 (City requirements for avoidance).

The Master EIR prepared for the TRRP Master Plan (EDAW 2001) identified a number of project-specific significant effects that would result from implementation of the plan. They include impacts on riparian habitats, waters of the United States (which includes riverine and fresh emergent wetland), special-status fish species and their habitat, VELB, and nesting raptors. With implementation of the mitigation measures required under the TRRP Master EIR, the impacts would be less than significant. The impacts are detailed in the Master EIR prepared for the TRRP Master Plan, which is hereby incorporated by reference. The TRRP impacts and project-specific mitigation measures are in Appendix F.

Therefore, with implementation of the TRRP mitigation and measures to be developed as part of the Dry Creek master plan, the potential impacts of the UAGP on riparian, riverine, and fresh emergent wetland habitats, their associated special-status species, and wildlife and fish movement and migration corridors would be reduced to a less than significant level.

Areas with potential to support vernal pools occur grasslands east of the Burlington Northern and Santa Fe Railway. Implementation of applicable policies addressed in Table V-7-1 would address these potential impacts on vernal pool habitat and special-status species with potential to occur in vernal pools and result in less than significant impacts.

(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 native wildlife nursery sites.

Adherence to the measures cited in (1), above would ensure that only less than significant impacts would occur with respect to the movement of native fish or native wildlife corridors in the Modesto Planning Area. Such potential issues with respect to these topics would be reviewed prior to development as required by the above measures.

(4) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The intent of the proposed Project is the adoption of an amended General Plan. The proposed UAGP amendment would not repeal or affect any existing City, local policies or ordinances protecting local biological resources and therefore no such conflict would occur.

(5) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

No such plans have been adopted within the UAGP boundary, so there would be no impact(s) with respect to this topic.

3. Significant Cumulative Impacts

CEQA and the State CEQA Guidelines require the disclosure of the significant cumulative environmental effects, whether the project will make a cumulatively considerable contribution to any such effects, and, if so, mitigation measures intended to reduce the project's contribution (Section 15130 of the State CEQA Guidelines). A cumulative effect is one that results from past, present, and probable future projects. A project that has a less than significant direct effect on the environment may nonetheless make a considerable contribution to a cumulative effect.

A cumulative impact analysis first identifies whether there exists a cumulatively significant effect in the given resource area. If so, it determines whether the project will make a considerable contribution to that effect. Where a cumulative impact is severe, even a small contribution may be considerable. Where a project is required to implement or fund its fair-share of a mitigation measure designed to alleviate the cumulative impact, its contribution will be rendered less than considerable. (Section 15130(a) of the State CEQA Guidelines.)

The project will contribute to the cumulative impact of habitat loss within the San Joaquin Valley. Under the ESA, habitat loss can be considered a significant impact. This impact will be reduced by UAGP policies, in concert with the ESA, the CESA, and related regulations, but will still be a considerable contribution.

The environmental vision of the UAGP states that the UAGP "promotes residential development at higher densities to avoid low-density sprawl and promotes staged urban growth so that the conversion of agricultural land [and, by inference, habitat] is focused to a few villages, not spread broadly around the City's urban perimeter." Providing for higher residential density than the suburban norm and a compact pattern of growth within the UAGP area to 2040 (and beyond) would minimize the City's contribution to the cumulative loss of habitat. Nonetheless, this is a significant and unavoidable impact.

C. POLICIES ADOPTED TO REDUCE SIGNIFICANT EFFECTS

The following information is provided in accordance with State CEQA Guidelines Section 15126.2.

1. Policies that Reduce Direct Impacts

There are no significant direct effects that are not mitigated through implementation of the proposed UAGP policies, measures in the TRRP Master Plan and its Master EIR, or other regulations that would apply to future development (i.e., the CWA, the California Fish and Game Code, the ESA, and the CESA). These policies and regulations require that applicable laws and procedures are followed such that listed species are protected from development activities. As a result, any related impacts would be less than significant.

2. Policies that Reduce Cumulative Impacts

The UAGP policies described above, measures in the TRRP Master Plan and Master EIR, and other regulations that would apply to future development (i.e., the federal CWA, the California Fish and Game Code, the ESA, and the CESA) would reduce cumulative impacts. No new mitigation measures are proposed.

The total projected population of Stanislaus County is approximately 710,000 in 2040 (UOP Eberhardt School of Business 2016). The addition of structures and, increased human activity in open space / natural areas that would be associated with this population increase would potentially significantly impact sensitive plant and wildlife habitat by converting plant and wildlife habitat to urban uses. However, the compact concentration of population in the Modesto area (where more than 40% of the total county population is projected to live), as envisioned in the UAGP, would help decrease development pressures in the eastern and western portions of the county, where most of the significant biological resources are located.

Development in the areas most likely to result in cumulative impacts—the riparian areas along Dry Creek, the Stanislaus River, and the Tuolumne River, and undeveloped lands within the Planned Urbanizing Area—would require further site- and project-specific studies to be undertaken, habitat to be set aside, and compensation habitat established, if necessary. At this time, the UAGP includes policies to ensure that future actions limit their contributions to habitat loss. Nonetheless, *any* habitat loss would result in a considerable contribution to the cumulative loss of habitat.

D. MONITORING POLICIES THAT REDUCE IMPACTS

The following information is provided in accordance with PRC Section 211081.6. The policies identified in this Master EIR have been drawn from the proposed UAGP amendment, and they are implemented by that plan. City staff provides the City Council with an annual report on UAGP implementation; therefore, no separate mitigation monitoring program is required for the UAGP Master EIR.