

# **APPENDIX R**

Master Habitat Conservation

Strategy

for

**DUNNIGAN SPECIFIC PLAN**

**April 29, 2013**

Yolo County

Woodland, CA

March 12, 2013

Price Walker and Robert Capps  
Elliot Homes  
340 Palladio Parkway, Suite 521  
Folsom, CA 95630

**Re: Dunnigan Specific Plan: An Overview of General Habitat Types**

Dear Mr. Walker:

Per your request, FirstCarbon Solutions/Michael Brandman Associates (FCS/MBA) is pleased to provide this memorandum providing a basic overview of the habitat types that will likely be impacted by the project within the Dunnigan Specific Plan Area. This memorandum also outlines potential opportunities for mitigation of these impacted areas pursuant to research completed by the Yolo County HCP/NCCP.

**Existing Site Conditions**

The Dunnigan Specific Plan site is located in and around the town of Dunnigan in Yolo County, California, north of Bird Creek, west of County Road 99 West, south of County Road 5, and east of the Tehama-Colusa canal. The approximate center of the site is located at 38°53'00" North and 121°58'30" West, within the "Dunnigan, California" and "Zamora California" 7.5-minute quadrangles (U.S. Department of the Interior, Geological Survey 1973 and 1992, respectively).

The site is composed of leveled to gently rolling terrain with elevations ranging from 50 feet to 205 feet above mean sea level. The majority of the site is comprised of agricultural crops, such as corn (*Zea mays*), alfalfa (*Medicago sativa*), sunflowers (*Helianthus* species), almond orchards, and vineyards. The majority of the rolling hills along the western edge of the site have been planted with wheat (*Triticum aestivum*). Detention basins and ditches are interspersed throughout the site and provide water for the crops. An intermittent creek runs along the northern edge of the site, and portions of another intermittent drainage (Bird Creek) run along the southern boundary. Ephemeral drainages, seasonal wetland swales, seasonal wetlands, and marshes are present intermittently throughout the rolling hills and undeveloped portions of the Plan area. Ruderal vegetation is present along roadsides and in small undeveloped patches around the site.

Surrounding land uses include I-5, residential, agricultural fields, and ranches to the north; the town of Dunnigan, commercial, and agricultural fields to the east; Bird Creek, agricultural fields and orchards to the south; and the Tehama-Colusa Canal and undeveloped pastureland to the west.

**Vegetation Communities**

Vegetation communities observed and mapped onsite include wheat, alfalfa, unknown crop (e.g. harvested or disced areas), almond orchard, vineyard, annual grassland, and developed areas. Approximately 75% of the Specific Plan area consists of agricultural land. Annual grassland and developed areas (residential, farm facilities, etc.) compose the rest of the Specific Plan Area.

In regards to Swainson's hawk habitat, crop type becomes particularly important because the adequacy of foraging habitat depends on it. The importance of crop type for foraging habitat rests on two variables: the abundance of voles and other prey, and the amount of vegetative cover that affects access to prey. Important land cover or agricultural crops for

foraging are alfalfa and other hay, grain, and row crops, bare fallow fields, irrigated and dryland pasture, and annual grasslands. The matrix of these cover types across a large area creates a dynamic foraging landscape as temporal changes in vegetation results in changing foraging patterns and foraging ranges.

### **Wheat**

The southeastern portion of the site is a monoculture community of cultivated wheat (*Triticum aestivum*). Weedy species such as ryegrass (*Lolium* species) and wild oat (*Avena fatua*) have become established along edges, fence lines, and boundaries. During and following harvest, raptors such as red-tailed hawk (*Buteo jamaicensis*) and white-tailed kite (*Elanus leucurus*) forage on invertebrates and small mammals. Other wildlife species that occur in this vegetation community include house mouse (*mus musculus*), black-tailed jackrabbit (*Lepus californicus*), and deer mouse (*Peromyscus maniculatus*). Burrowing mammals are typically absent in this community due to the regular soil disking and tilling. Other commonly occurring species include American kestrel (*Falco sparverius*), American crow (*Corvus brachyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), mourning dove (*Zenaida macroura*), and turkey vulture (*Cathartes aura*).

### **Alfalfa**

Alfalfa fields are located in the central and northern portions of the Specific Plan area. These areas are a monoculture community of cultivated alfalfa (*Medicago sativa*). Weedy species such as ryegrass and wild oats also may become established along edges, fence lines, and boundaries. During and following harvest, raptors including Swainson's hawk (*Buteo swainsoni*) may forage on invertebrates and small mammals that become exposed. Other wildlife species in this community are similar to those found within wheat fields, as described above.

### **Unknown Crop Variety**

A number of harvested and/or disked fields are located throughout the Specific Plan area. These fields appear to have been previously harvested or disked and may have been wheat, alfalfa, or other crop varieties. Weedy species such as ryegrass and wild oats may become established along fence lines and boundaries. Species that occur in this vegetation community are similar to those that occur in both wheat and alfalfa fields.

### **Almond Orchard**

Almond orchards are scattered throughout the Specific Plan area. These areas are a monoculture community of almond (*Prunus dulcis*). Very little vegetation grows in and around the orchards; however weedy species such as ryegrass and wild oats may become established along edges, fence lines, and boundaries. Wildlife species that occur within this community include house mouse, deer mouse, black-tailed jackrabbit, red-tailed hawk, American kestrel, great horned owl (*Bubo virginianus*), and Nuttall's woodpecker (*Picoides nuttallii*).

### **Vineyard**

A vineyard is present towards the southwestern portion of the site comprising approximately 125 acres. This area is a monoculture community of cultivated wine grape (*Vitis vinifera*). Very little vegetation grows around the vineyard, however weedy ryegrass and wild oats may become established along edges, fence lines, and boundaries. Wildlife species that may be observed in this vegetation community include black-tailed jackrabbit, American crow, Brewer's blackbird, and mourning dove.

### **Annual Grassland**

This community occurs throughout portions of the site, primarily in the western portion of the Specific Plan area. In many of these areas the grassland community appears to have been disturbed. Trees are largely absent from this community

with the exception of scattered Valley oak (*Quercus lobata*). Seasonal wetlands, irrigation ditches, and drainages are intermixed with the annual grassland community. Non-native weedy plants have become well-established in the disturbed portions of the annual grasslands. Species observed in disturbed areas include wild oats, ryegrass, ripgut brome (*Bromus diandrus*), prickly lettuce (*Lactuca serriola*), bindweed (*Convolvulus arvensis*), filaree (*Erodium botrys*), curly dock (*Rumex crispus*), and chicory (*Chichorium intybus*). Wildlife species that may be observed in this vegetation community include red-tailed hawk, loggerhead shrike (*Lanius ludovicianus*), turkey vulture, California ground squirrel (*Spermophilus beecheyi*), and coyote (*Canus latrans*).

#### **Developed Areas**

Developed areas consist of residences, major roads, and highways and make up approximately 10% of the Specific Plan area. Plant species associated with these developed areas largely consists of landscaped vegetation and may also include curly dock, rough cocklebur (*Xanthium strumarium*), prickly lettuce, Mediterranean barley (*Hordeum marinum*), and barnyard grass (*Chinichola crus-galli*). Wildlife in the more developed portions of the Specific Plan area is relatively low, and very little natural habitat remains. However, bird species including red-tailed hawk and Western scrub-jay (*Aphelocoma californica*) are often present in these areas.

#### **Waters of the United States**

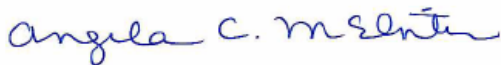
A total of approximately 15.424 acres of potential waters of the United States were mapped onsite. Wetlands onsite include seasonal wetland and seasonal wetland swale. Other waters onsite include a pond, irrigation ditch, roadside ditch, drainage ditch, ephemeral drainage, and intermittent creek.

#### **Opportunities for Mitigation**

Approximately 90% of the 3,110-acre Dunnigan Specific Plan Area contains agricultural and/or open space land that provides habitat to a number of sensitive species. Because mitigation fees associated with impacts to foraging and/or nesting habitat within the Specific Plan area may be costly, FCS/MBA recognizes that the project applicant will likely seek alternative mitigation approaches, such as acquisition of irrevocable instruments on agricultural and open space lands near the Specific Plan area or within greater Yolo County for the permanent preservation of these habitats. As shown in Exhibit 1, which depicts Yolo County Natural Heritage Program mapping efforts on a County-wide Level, and Exhibit 2, which depicts Yolo County Natural Heritage Program mapping efforts in the vicinity of the Specific Plan area, there appears to be a number of opportunities for preservation within Yolo County to allow this approach to be utilized.

Please don't hesitate to contact Trevor Macenski or me if you have any questions or would like additional information.

Regards,



Angela C. McIntire, J.D.

Project Manager

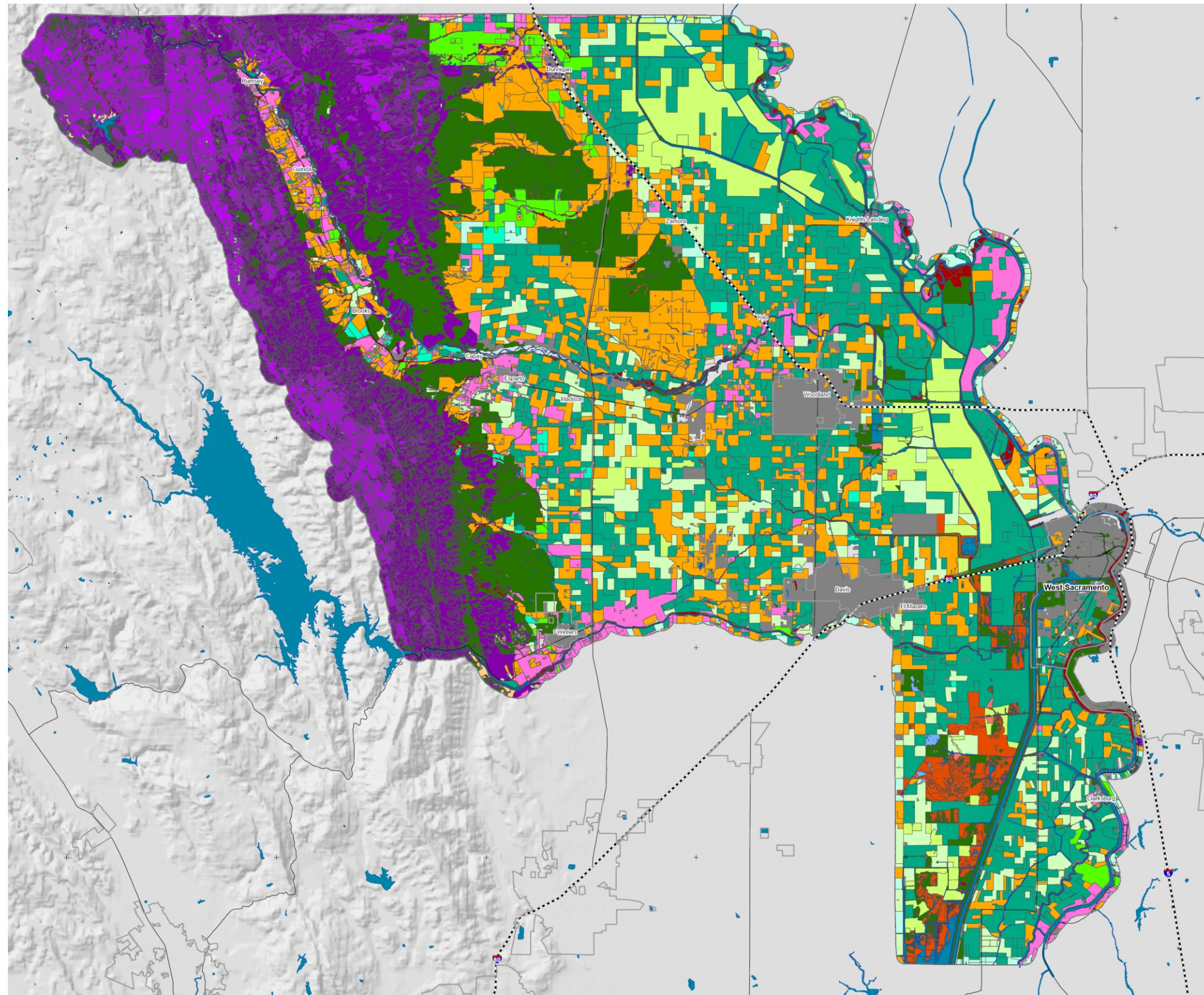
**FirstCarbon Solutions – Michael Brandman Associates**

2000 "O" Street, Suite 200

Sacramento, CA 95811

Enc: Exhibits 1 and 2





**Vegetation Categories \***

- Deciduous Orchard
- Evergreen Orchard
- General Agriculture
- Grain and Hay
- Irrigated Grain Crops
- Irrigated Hay Field
- Irrigated Row and Field Crop
- Pasture
- Rice
- Vineyard
- Grasslands and Prairies
- Serpentine
- Alkali Sink
- Emergent Wetlands
- Valley Foothill Riparian
- Vernal Pool Complex
- Chaparral
- Woodlands and Forest
- Unvegetated, Vacant, Develop

**Basemap Legend**

- Yolo County 2000ft Buffer
- Jurisdictional Boundary
- Freeways
- Major Roads
- Open Water
- Urban or Built-up

Source: Yolo Natural Heritage Program.



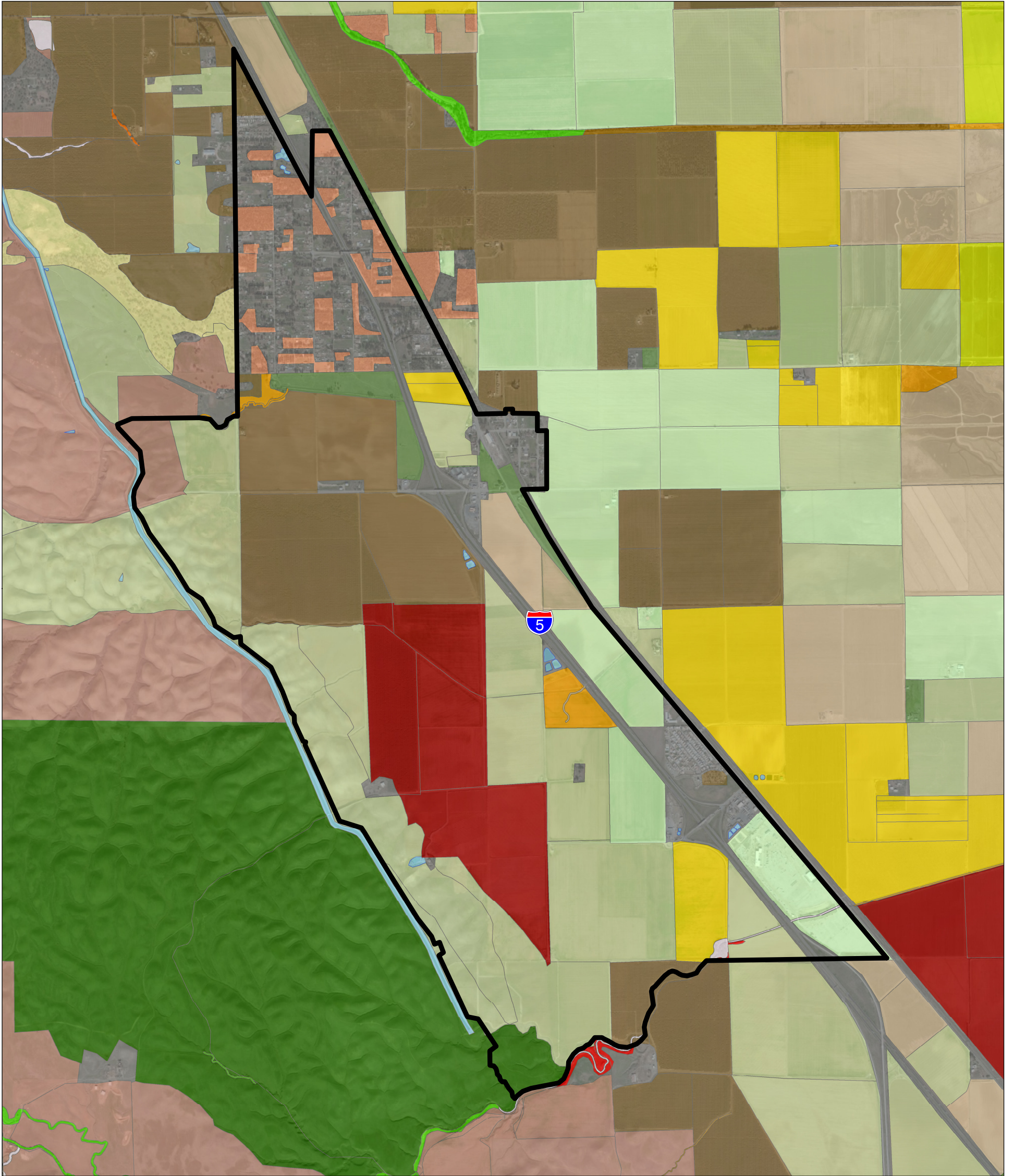
Michael Brandman Associates

29410007 • 03/2013 | 1\_vegetation\_series\_overview.cdr

**Exhibit 1**  
**Yolo County Vegetation Series Overview**

DUNNIGAN SPECIFIC PLAN  
HABITAT MEMORANDUM





Source: ESRI Aerial Imagery. Yolo Natural Heritage Program.

**Legend: Specific Plan Boundary**

Specific Plan Boundary 3,110 acres

**Vegetation Category**

Barren - Anthropogenic	Interior Live Oak Alliance
Blue Oak Alliance	Intermittently Flooded to Saturated Deciduous Shrubland
Bulrush - Cattail Fresh Water Marsh NFD Super Alliance	Mixed Willow Super Alliance
California Annual Grasslands Alliance	Pasture
Carex spp. - Juncus spp. - Wet Meadow Grasses NFD Super Alliance	Rice
Deciduous Fruits/Nuts	Truck/Nursery/Berry Crops
Eucalyptus Alliance	Upland Annual Grasslands & Forbs Formation
Field Crops	Valley Oak Alliance
Fremont Cottonwood - Valley Oak - Willow (Ash - Sycamore) Riparian Forest NFD Association	Valley Oak Alliance - Riparian
Grain/Hay Crops	Vineyards
	Urban or Built-up
	Water