City of Davis, California

Open Space Division

Department of Community Development and Sustainability

Land Management Plan

For the

Wildhorse Agricultural Buffer

June 2020

WILDHORSE AGRICULTURAL BUFFER LAND MANAGEMENT PLAN

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I. INTRODUCTION

A. Purpose of This Management Plan

The purpose of this management plan is to identify the resources present on the Wildhorse Agricultural Buffer (Ag Buffer) and set goals for their long-term maintenance. This plan will outline those goals, as well as several specific objectives intended to define our management activities going forward. The goals and objectives presented here have been reviewed by public members of the Open Space and Habitat Commission, as well as City staff. However, this is intended to be a living document able to be amended or updated as new information and best practices become available.

B. City Approaches to Managing Land

The City and the citizens of Davis have been active in the protection of natural resources, sensitive habitat, and agricultural lands in, and surrounding, the community for the past several decades. The City of Davis first prioritized the preservation of agriculture and Open Space as part of the General Plan in 1958. Since then, the City has acquired or protected over 5,300 acres of open space within the Davis Planning Area. The first local measure to protect open space, Measure S, was passed by 58% of voters in 1986 to expand Central Park. More recently, in 2000, more than 70% of Davis voters approved Measure O, a parcel tax designed to be a long-term, stable funding source to acquire and maintain open space areas.

The City's formal Open Space Program was established in 1990 to implement long-standing policies that called for the protection of the farmlands and wild areas that surround the community. The major goals of the program include:

- **Protect Open Space** - Secure long-term protection of open space lands around Davis, including maintaining the quality, quantity, and connectivity of agricultural lands and habitats
- **Manage for the Long-Term** - Provide and improve long-term management and monitoring of natural habitat and other open space values on City-owned lands
- **Foster Use of Public Lands** - Promote and support the enjoyment of public open space lands, both within the city limits and in the broader Davis Planning Area
- **Engage Citizens** - Engage citizens in planning and caring for open space areas
- **Work With Others** - Nurture productive partnerships with other organizations to achieve the above goals

The City of Davis uses a wholistic approach to land management that stewards City resources, protects natural resources and provides for limited use by the public. In addition to our beautiful parks and greenbelts, the City of Davis manages approximately 600 acres of land for wildlife habitat with public access. These areas are managed by staff within the Department of Community Development and Sustainability. Additionally, the City owns agricultural land and has easements on private property that help protect the diverse natural resources of Yolo County. Collectively, the habitat areas,

agricultural lands and easements total almost 6,000 acres and together make up the City's Open Space Program. The citizen's volunteer Open Space and Habitat Commission helps advise staff and city council on land acquisition and management.

City Open Space staff generally manages all sites with the following goal: provide quality habitat for wildlife with safe public access. This requires an adaptive style of management that requires input from the community and other city staff to be effective. Public engagement, environmental education and volunteerism are a critical part of the feedback loop for adaptive management. In addition, partnerships with other resource professionals to provide biological assessments and invasive species control provide another piece of the management puzzle. This on-the-ground work is regulated through the City's Integrated Pest Management Policy, biological resources impact avoidance measures and subject to oversight by members of the public and Public Works Utilities and Operations department.

C. Broad View of Ag Buffer Management Goals

The desired future conditions of the City's Open Spaces are generally spelled out in the Program's Strategic Plan, adopted in 2018. The plan calls for the City to continually enhance the habitat values of the existing open space areas and seek new opportunities for public access. For the Ag Buffer, native pollinator habitat enhancement is a primary management goal. As mentioned before, the City's IPM Policy sets guidelines for how this goal can be achieved by using the most appropriate, least toxic methods for pest management.

D. Ag Buffer Acquisition History and Purpose

The Ag Buffer was created and restored as part of the City's agreement with the developer of the Wildhorse Housing Development and Golf Course. The restoration focused on the establishment of native plant species that would grow and perpetuate under local environmental conditions. The key objectives were to establish a native plant community that, with minimal management by the City, can successfully compete with undesirable plant species.

To this end, the City directed a multi-phased intensive restoration process of the site beginning in early 2000. The initial phase consisted of planning, design, and selection of species adapted to the existing conditions. This step was followed by the preparation and planting of the site from mid to late 2000. Upon completion of the planting, an establishment period began in spring 2001. In January 2002 the City accepted the management responsibilities for the site. The property is owned in title by the City.

II. PROPERTY DESCRIPTION

A. Geographic Setting

The Ag Buffer is in southern Yolo County on the north and east edge of the Wildhorse Golf Course and Wildhorse Housing Development. The site extends east from Pole Line Road approximately 1 mile and north from Covell Boulevard (at Monarch) approximately 3/4 of a mile. Public access points can be found at Pole Line Road, Covell Boulevard, a small pocket park, and each of the three cul-de-sacs that terminate at the Ag Buffer.

More broadly, the property is set in the southern Sacramento Valley. This area is defined by the Sacramento River, the Sacramento –San Joaquin Delta, the Coast Range and the Sierras Nevada. The view of both mountain ranges from the northwest corner of the Buffer is a major draw for users. People from the Davis and Woodland communities use the resource daily for exercise and exploration. The City allows dogs on-leash so the site is unique in its access, size and rural setting when compared to parks and greenbelts. The Ag Buffer is easily the most used City of Davis Open Space.

B. Property Boundaries and Adjacent Land Use

The Ag Buffer is situated on the extreme north end of the Davis City limits. The result is that the site is bordered by urban land use in the form of a golf course and large housing development to the south and west. Conversely, the land use on the north and east sides of the Agricultural Buffer is production agriculture. Row and forage crops dominate the land to the east, while a large pistachio orchard sits directly to the north. A mix of barbed – wire, three – strand and wood fencing defines the property boundaries around the majority of the site. The boarder along the golf course is unfenced.

The adjacent agricultural production is diverse and includes alfalfa, row crops and a large orchard. This presents management concerns for the Ag Buffer in the form of weeds and pesticide exposure. Farm roads and field edges are not maintained weed free and present a significant source of broadleaf weed seeds. Pesticide use in the neighboring orchard is also a concern. Repeated herbicide applications in the orchard have the potential to drift onto desirable vegetation and rodenticide use can impact both birds and mammals.

To mitigate these potential impacts, the City of Davis (COD) maintains a vegetated hedgerow feature along the property line bordering the orchard. There is also a remnant windrow of native and non-native trees planted along the eastern edge of the Ag Buffer. These established trees and shrubs prevent pesticide drift and weed encroachment impacting desirable species on either property. The features buffer public visitors from the noise, dust and chemicals of farming operations.

C. Geology, Soils, Climate and Hydrology

The Ag Buffer is located in western Yolo County and sits on the edge of the historic floodplain of the Sacramento River. The site geology is defined by the historic deposition of clay fines by various sloughs and waterways that run east out of the Coast Range. The area is flat, with little elevation or topography changes. A slight grade, created during construction, exists on site and runs the length of the north property boundary.

The dominant soil type on the site is a loam that varies from silty to clay. A U.S. Geological Survey soil survey map is included as Appendix E. It is important to understand that the current soil composition of the Ag Buffer is a result of the various land uses of the site over time and not the result of natural processes. Due to past land use, particularly the removal of topsoil for construction of the adjoining golf course, soil quality varies and it is impossible to summarize soil types in this report beyond a vast generalization. However, the soil conditions of the site are extremely important when considering restoration efforts and each project area should be surveyed individually. Amendments have been used successfully in the past to aid in re-vegetation efforts and should be considered whenever feasible.

The climate is a dry, Mediterranean style with winter rainy season. The climate is conducive to growing numerous crops and supports high-value agriculture all around the City of Davis. Native plants on the site are well-adapted to the hot, dry months and have not received irrigation since their establishment period almost two decades ago.

Average July high temperature:	93°F
Average January low temperature:	38°F
Average temperature:	61.1°F
Average annual precipitation - rainfall:	19.66 inch
Growing Season	March - October

Table 1 Local Climate Averages

The hydrology of the site is fairly simple, with a single permanent water feature on site. Channel A is part of the City's storm water conveyance system and it crosses the Ag Buffer near the north east corner of the property. The length of channel officially included in the City's property is small: only about 100 feet of channel are actively managed as part of the Ag Buffer. Several depressions and low spots hold water during the wet months, creating seasonal habitat for several species.

D. Historical Background

Prior to the development of the Wildhorse Community, the site was part of Yolo County's agricultural and rural setting. Walnut orchards and horse pastures dominated this particular landscape throughout the last 100 years or more. That heritage is still visible on site, with remnant orchard trees on the west end and active horse pastures bordering the southeast entrance.

The cultural significance of the site to indigenous Californians/first nations is not known by this author. This section should be a priority for follow-up research.

E. Current and Future Use

The Ag Buffer is the most widely used City of Davis Open Space. There is no intention to change the current use as the property was dedicated to the City with the intention of maintaining it as such in perpetuity. The Open Space Program Strategic Plan does identify the opportunity to increase public

engagement and environmental education across all open space sites. A desired future use is for the site to host these types of events on a regular basis.

F. Existing Infrastructure and Utilities

The major infrastructure feature is the compacted gravel trail that runs the length of the site. The trail is raised in some areas and at grade in others, with a small wooden footbridge over Channel A. Ground squirrel intrusion is a primary management consideration for this feature.

The Ag Buffer also includes approximately 5 miles of fencing in various forms. One purpose of this fencing is to separate the city property from adjoining agricultural and residential properties. Fencing also separates the public access area from the protected habitat area of the Ag Buffer. This boundary is an important feature of the agricultural buffer concept and its maintenance is a management priority.

Two utility rights-of-way exist on the north side of the property; a City wastewater pipeline right-of-way and a PG&E elevated power line right-of-way. Both of these features provide for management considerations, including tree health, avian nesting disturbance and introduction of invasive species. Maps of the rights-of-way are included as appendices and management goals are identified in the Facilities Elements section of this plan.

While not on the City's property, a large cell tower and the golf course pump house are both located immediately adjacent to each other and the Ag Buffer. This intersection exists on the north side of the property, approximately 1/3 mile east of the Pole Line Rd entrance, and presents a management consideration because the City's trail provides ideal maintenance access to these facilities. The golf course operator and cell tower maintenance contractor both have requested access to City property in the past for repair and installation of equipment. Proper encroachment permits should be issued through the Public Works Engineering and Transportation department.

G. Legal, Policy and Regulatory Constraints on Management

There are no significant management constraints on the Ag Buffer property, either self-imposed or from outside agencies. The City owns the property in title and is managed almost entirely as dryland habitat. However, Channel A is a surface water feature and is subject to clean water regulations surrounding erosion and pesticide applications. This is not a major concern because it represents only a fraction of a percent of the overall management area. All pesticide applications are done under the State, County and City regulations and supervised by licensed applicators.

Additionally, the City defined a two-acre section of the Ag Buffer for special management to support Burrowing Owls. The detail of this management strategy is outlined in the Burrowing Owl Management Area section of this document.

The use of City open spaces by the public is governed under the City's Civil Codes, Article 27.03. A list of the relevant sections is included as Appendix H to this document.

III. MANAGEMENT AREAS AND SPECIES DESCRIPTION

A. Management Areas

The restoration of the Ag Buffer is focused on the establishment of native plant species that can grow and perpetuate under existing environmental conditions. The key objectives are to establish a native plant community that, with minimal management by the City, can successfully compete with undesirable plant species. Establishment of the native plant community sets the stage for achievement of the City's other management goals for the site, including wildlife habitat enhancement, improving visitor experiences, and reducing conflicts at property boundaries.

The overall vegetation management strategy is designed to encourage the establishment and perpetuation of the native plant community currently being restored. Several other significant vegetation resources exist on site, including a remnant non-productive walnut orchard (5.5 ac +/-) adjacent to Pole Line Road and a mixed species tree row adjacent to the agricultural fields along the eastern edge of the Ag Buffer.

The City's wildlife management goals are not focused on managing animals themselves, but rather creating conditions that attract and/or maintain a diverse range of animal species. The basic concept is that if the Ag Buffer provides food, water, cover, and relatively undisturbed space, it can serve as productive wildlife habitat at the urban/rural edge. If one of these habitat components is lost or compromised, the habitat suitability of the Ag Buffer could be diminished, and species richness could be lost.

Agricultural Buffer

The Ag Buffer is boarded by agricultural land along its entire northern and eastern edges. The Ag Buffer is designed to provide a transition between farmed areas and non-farm land uses. The farm edge of the Ag Buffer is intended to minimize impacts on adjacent farming operations while buffering the enhanced wildlife area and passive recreation use occurring within the remainder of the Ag Buffer. Because this area can be a major source of weed seeds for both the farmer and the City, it is important to maintain these zones effectively to minimize conflict between the neighboring land owners. General management goals for the Ag Buffer are:

- Minimize conflicts between agricultural operations and nearby non-agricultural land uses and activities to the extent feasible.
- Maintain existing hedgerows and windrows on City property to reduce soil erosion and the drift of agricultural chemicals into adjacent non-agricultural areas.
- Maintain/establish non-invasive ground cover within the Ag Buffer to reduce the migration of noxious weed species into adjacent agricultural areas.
- Work with adjacent landowners to maintain clear definition of property boundaries with fencing, hedgerows, drainage swales, etc.
- Work with adjacent property owners to minimize trespass and property damage with fencing, vegetation, signs, public education, and patrols.

- Develop a notification system with the County Agricultural Commissioner identifying periods when agricultural lands adjacent to the Ag Buffer will be sprayed.

Wildlife

The City's wildlife management goals are not focused on managing animals themselves, but rather creating conditions that attract and/or maintain a diverse range of wildlife species. The basic concept is that if the buffer area provides food, water, cover, and relatively undisturbed space, it can serve as productive wildlife habitat at the urban/rural edge. If one of these habitat components is lost or compromised, the habitat suitability of the Ag Buffer could be diminished, and species richness lost.

Many factors contribute to the wildlife habitat suitability of the Ag Buffer. Located on the fringe of two highly manicured landscapes (golf course and farmland), the Ag Buffer provides resident and transitory wildlife with a relatively stable source of food, water, and shelter. The wildlife habitat suitability of the Ag Buffer is expected to increase over time as the restored native grassland community becomes established.

The site provides nesting and foraging habitat for at least two sensitive species. Western burrowing owls (*Athene cunicularia*) use the Ag Buffer and adjacent golf course for nesting and foraging. Specific seasonal habitat management standards are included for the areas around the active and potentially active burrows to encourage the continuing use of the Ag Buffer by this species (see Burrowing Owl Management Area section for more information). Loggerhead shrike (*Lanius ludovicianus*) are also known to nest within the Ag Buffer. If other sensitive species are identified in the Ag Buffer, the City will consider changed management practices through the adaptive management process established for the site. General management goals for supporting the wildlife of the Buffer are:

- Manage site to benefit resident native wildlife and supporting habitat, with an emphasis on state and federally listed species.
- Establish and maintain a diverse selection of locally adapted native vegetation to favor native wildlife species.
- Within the first year of adoption of this plan, conduct a biological resource survey of the Ag Buffer to establish baseline information. The survey report shall also include habitat enhancement and management recommendations based on results.

Public Access

The site has been designed to allow for low impact recreational uses that are consistent with the urban/agriculture buffer and resource protection objectives identified for the site. As the most accessible open space area for many Davis residents, the Ag Buffer provides the best opportunity to experience a landscape representative of historic valley floor grassland and oak savannah plant and animal communities. Beyond the pure recreational value, the site can build support for preservation of similar landscapes through nature appreciation and education. Use and exploration of the site introduces visitors to natural communities that are rare in the Davis area, which can foster a sense of appreciation leading to active support of the Davis open space program.

The primary public use of the site is walking/jogging and nature appreciation. The Ag Buffer's location offers panoramic views of the Sacramento Valley, the Sierra Nevada and Coast mountain ranges, as well as the skyline of downtown Sacramento. Informal feedback from users of the area has been positive, with highlights noted such as "the wildlife is amazing" and "it's nice to find a place so close to town that has some rough edges to it."

A trail corridor consisting of a gravel foot path, benches, and observation points have been incorporated into the planning and design of the Ag Buffer. Public access improvements are intended to reflect the overall design concept of a native grasslands plant and animal community. General management goals for the public access elements of the Ag Buffer are:

- Enhance visitor experience through adequate maintenance of the Ag Buffer and interpretive information and displays.
- Maintain condition of trail corridor to make it the most attractive route through the Ag Buffer.
- Solicit and respond to visitor observations regarding hazards, vandalism, and other public health and safety issues.
- Reduce fire hazard through regular vegetation management.

B. Native Plant Communities and Plant Species List

The dominant plant communities found on the Ag Buffer are Valley Grassland, Valley Oak Woodland, Riparian, Freshwater Marsh and Alkali Sink. The table below summarizes the dominant native flora found on site:

Common Name	Scientific Name	Plant Type	Location
Valley Oak	Quercus lobata	large tree	throughout
Quail Bush	Atriplex lentiformis	large shrub	north side
Toyon	Heteromeles arbutifolia	medium shrub	throughout
Coffeeberry	Rhus californica	medium shrub	throughout
Black Walnut	Juncus negra	large tree	throughout
Buckeye	Aesculus californica	medium tree	east side
Western Redbud	Ceris occidentalis	small tree	throughout
CA Sagebrush	Artemisia californica	small shrub	planting islands
Silverbush Lupine	Lupinus albifrons	small shrub	planting islands
CA Buckwheat	Erigonum fasciculatum	small shrub	planting islands
Ceanothus	Ceanothus spp.	large shrub	throughout
Purple Needlegrass	Stipa pulchra	bunchgrass	throughout
Blue Wildrye	Elymus glaucus	bunchgrass	throughout
Creeping Wildrye	Leymus triticoides	creeping grass	throughout
Narrow-leaf Milkweed	Asclepias fascicularis	Forb	throughout
CA Poppy	Eschscholzia californica	Forb	north side

Table 2 Dominant Native Plant Species List

C. Animal Species List

Common Name	Scientific Name
Birds	
Western burrowing owl (nesting) — Special status species (state and federal)	*Athene cunicularia hypugaea*
Loggerhead shrike (nesting) – Special status species (state)	*Lanius ludovicianus*
White tail kite (foraging) – Fully protected species (state)	*Elanus leucurus*
Northern harrier (foraging) - Fully protected species (state)	*Circus hudsonius*
Great blue heron (foraging)	*Ardea herodias*
Yellow billed magpie (foraging)	*Pica nuttalli*
Swainson's Hawk— Special status species (state and federal)	*Buteo swainsoni*
Red-tailed Hawk – Fully protected species (state)	*Buteo jamaicensis*
Crow	*Corvus brachyrhynchos*
Western Scrub Jay	*Aphelocoma californica*
Northern Mocking Bird	*Mimus polyglottos*
Anna's Hummingbird	*Calypte anna*
Various Songbirds TBD	
Other Vertebrates	
Coyote (foraging)	*Canis latrans*
Black-Tailed Jackrabbit	*Lepus californicus*
Desert Cottontail	*Sylvilagus audubonii*
Field Vole	*Microtus californicus*
Striped Skunk	*Mephitis*
California Raccoon	*Procyon lotor psora*
Ground Squirrel	*Otospermophilus spp.*
Wild Turkey	*Meleagris gallopavo*
Moles	*Scapanus spp.*
Botta's pocket gopher	*Thomomys bottae*
Invertebrates	
Monarch Butterfly	*Danaus plexippus*
Paper Wasp	*Polistinae spp.*

Table 3 Partial Resident and Visitor Animal Species List

D. Invasive Species Inventory

Common Name	Scientific Name	General Location	Priority
Perennial pepperweed	*Lepidium latifolium*	Covell Drainage Canal	High

Common Name	Scientific Name	General Location	Priority
Yellow star thistle	*Centaurea solstitialis*	Pole Line Road, NE corner, Upland area near canal	High
Bull thistle	*Cirsium vulgare*	Upland area near canal, East property south from canal to Covell Blvd.	High
Curlydock	*Rumex crispus*	Drainage canal	High
Russian thistle	*Salsola tragus*	At property boundaries with adjacent farm fields	High
Black mustard	*Brassica nigra*	Throughout site	Intermediate
Short-Pod mustard	*Hirschfeldia incana*		
Annual grasses (ripgut brome, yellow fox tail, etc.)	*Hordeum, Bromus, Poa, Avena Spp.*	Throughout site	Intermediate
Filaree	*Erodium cicutarium*	Throughout site	Intermediate

Table 4 Invasive Plant Species

IV. MANAGEMENT GOALS AND TASKS

A. Definition of Terms

Element: An element refers to any habitat type, management area, public use program, facility or infrastructure program or similar, as defined in this section, that this plan sets goals for.

Biological Element: A biological element is defined as a habitat type or management area that is distinct and has its own management considerations. Specific goals are defined for each biological element in this plan. Biological elements could include; a riparian forest, surface water feature, open grassland area, pollinator hedgerow, storm water channel, vegetated right-of-way, soccer field, shrubs line along a fence, trees shading a play or sitting area, others as defined through monitoring and evaluation.

Public Use Element: A public use element is any recreational, scientific or other human activity that is supported by the site and actively managed for. Examples of public use elements are; trails, interpretive displays, boardwalks or overlooks, barns, test plots, amenities, ball fields, courts, dog parks, playgrounds, tables, benches.

Facility Maintenance Element: A facility maintenance element is any aspect of the property necessary for operations and maintenance that is not covered in the biological or public use elements. Facility maintenance elements can include: utilities, equipment, storage, hazardous materials, bathrooms, structures, lighting, parking, roads or vehicular access, fire abatement, fences, gates, pumps or valves, culverts or similar items. This element can also include administrative aspects such as offices hours, staffing needs, fees and other similar items.

B. Biological Elements

The various distinct habitat types found on the Ag Buffer were delineated and named as part of the original management plan. These habitat areas are the basis for the biological elements outlined below. Each element is identified and a brief description is given of the current conditions and dominant features. The goals for each biological element are focused on maintaining and improving the habitat value of the site as a nature preserve. These are distinct from the public use elements that are presented later, though some physical areas may overlap. The following goals and tasks are presented as the best-known management practices at the time of adoption of this plan. The following elements are listed in order of their respective acreage.

The Oak Savannah

The majority of the habitat found on site at the Ag Buffer is in the form of Valley Oak Savanna with associated native grass understory. This system most likely resembles the type of habitat that

dominated the landscape at times before modern, intensive land use. The Valley Oak tree is endemic to California and is a keystone species that provides support for wildlife big and small.

Goal 1 – Control broadleaf weeds and invasive annual grasses to ensure maximum native biodiversity.

Task 1.1 – Burn, graze or harvest grass plots on a 3 – 4-year interval to remove thatch, promote growth and sterilize unwanted seed.

Task 1.2 – Control broadleaf weeds with herbicide or by hand removal as necessary. See Appendix A for herbicide application.

Task 1.3 – Control annual grasses with hand removal and targeted mowing to prevent viable seed production. See Appendix B IPM techniques.

Task 1.4 – Maintain established fire breaks by mowing as needed in spring and summer. See Appendix D for fire abatement map.

Task 1.5 – Monitor grasslands for flora and fauna, watch for outbreaks of invasives.

Goal 2 – Promote establishment of young oak trees and other native woody vegetation for succession.

Task 2.1 – Identify potential volunteer oak saplings and mark/flag/record GPS location.

Task 2.2 – Establish exclusion areas around saplings with fencing to protect from herbivory and to prevent burning.

Task 2.3 – Monitor establishment of young trees and thin as necessary to prevent overpopulation.

Task 2.4 – Collect acorns and transplants when possible to preserve the genetic stock of the existing trees.

Goal 3 – Manage existing trees for health and visitor safety.

Task 3.1 – Monitor tree conditions on a periodic basis (monthly, quarterly?) and after high winds.

Task 3.2 – Immediately cut and pile broken limbs or branches that pose a risk to trail users.

Task 3.3 – In consultation with an arborist, monitor tree health and take measures as necessary to improve.

Remnant Walnut Orchard

The northwest corner of the site is home to a small, remnant walnut orchard that covers about 6 acres. The trees were originally planted as English Walnut trees with native Black Walnut root stock, as is customary for walnut orchards in California. Now, however, the English Walnut wood is gone and

what remains are more like large shrubs, stump-sprouted from the native stock. Health and vigor of the remaining trees is low, with most dropping large limbs on a regular basis.

Goal 4 – Transition remnant orchard to Valley Oak Savannah

Task 4.1 – Remove majority of dead or dying walnut trees to open canopy for young oaks

Task 4.2 – Identify beneficial (raptor perches, forage for small mammals, shade for walkers) walnut trees and flag to prevent removal

Task 4.3 – Create exclusion zones to promote the establishment of volunteer oak trees

Goal 5 – Control Weeds In the Native Grasslands to support maximum native biodiversity

Task 5.1 – Use appropriate IPM techniques to control broadleaf and grass weeds found in the orchard area

Task 5.2 – Prevent ground disturbance when conducting tree care activities so bare ground does not provide a vector for additional weeds

Task 5.3 – Use wood chips from tree removal to control weeds in areas of high traffic

Hedgerow and Windrow

Both the north and east boundaries of the property are lined with trees and shrubs designed to help buffer the adjacent land uses from impacts that one might cause to the other. The north boundary of the site is planted with a hedgerow of traditional, native shrubs that provide a view screen as well as habitat for multiple species. The east boundary is lined with a windrow that was planted by previous land owners over a period of time. These trees are not native and provide minimal habitat value, but they do make an excellent buffer.

Goal 6 – Maintain health of existing boundary plantings for continued buffering of land uses

Task 6.1 – Periodically prune trees and shrubs for health to prevent disease and decay

Task 6.2 – Control broadleaf weeds in and around plants to prevent competition and encourage expansion of desirable vegetation

Task 6.3 – Plant new stock in existing gaps and under older vegetation to ensure continued function of both hedgerow and windrow without major gaps

Task 6.4 – Maintain lack of trees and shrubs in NE corner to ensure appropriate conditions for Burrowing Owls

Goal 7 – Enhance native biodiversity of boundary plantings to maximize habitat value of site

Task 7.1 – Identify areas for additional plantings and install native plants that support pollinator species

Task 7.2 – Ensure year-round foraging opportunity for pollinators by including native plants with sequential flowering schedules

Task 7.3 – Include other habitat enhancements like: brush piles, rock piles, bat boxes, owl boxes, bee blocks and song bird houses.

Burrowing Owl Management Area

The NE corner of the Ag Buffer (Burrowing Owl Management Area) currently supports Western Burrowing Owls (*Athene cunicularia hypugaea*). The Burrowing Owl is considered a "Bird of Conservation Concern" by the U.S. Fish and Wildlife Service and a "Species of Special Concern" by the California Department of Fish and Wildlife. The species is also protected under the federal Migratory Bird Treaty Act, state regulation protecting birds-of-prey, and is a "Covered Species" in the Yolo Habitat Conservation and Natural Communities Conservation Plan. The historic range of the species in the Northern Sacramento Valley has declined over the last 30 years. Monitoring by the City of Davis over the last 20 years indicates a significant reduction in occupancy of suitable local habitat and a significant drop in the number of local breeding pairs (City of Davis, unpublished data). In the interest of supporting Burrowing Owls, the City prioritizes management of habitat areas, that support Burrowing Owls, to be more favorable to Burrowing Owls.

The Burrowing Owl Management Area of the site is comprised largely of native and common non-native invasive vegetation and is classified as perennial grassland and oak savannah. Dominant grass species on site include native purple needlegrass (*Nassella pulchura*) and creeping wildrye (*Leymus triticoides*). Non-native annual grasses are present including wild oat (*Avena fatua*), wild barley (*Hordeum spp*.), and Italian ryegrass (*Lolium multiflorum*). A few weedy broadleaf species including yellow starthistle (*Centaurea solstitialis*), black mustard (*Brassica nigra*) and field bindweed (*Convolvulus aruensis*) are occasionally observed. Native trees and shrubs are sparsely present in and adjacent to the management area.

Burrowing Owls prefer open grassland or disturbed areas with no to minimal vegetation height and density in their nesting area so they can see and react to predators. Active management of the area to maintain such conditions can have negative effects on the habitat for other wildlife species, that this plan seeks to minimize. Similarly, mowing and grazing can negatively impact soil properties and burrow integrity. Soil compaction may help to limit vegetation growth, but can also deter fossorial mammals that are important for burrow recruitment. Heavy equipment or grazing animals on moist soil can cause burrow collapse and resulting loss of suitable habitat. The owls use vacated California Ground Squirrel (*O. beecheyi*) burrows for nesting and shelter, so therefore rely on an active and healthy squirrel population. However, ground squirrels are considered a pest by most agricultural operations and the rodent control efforts by the large pistachio orchard immediately north of the Ag Buffer presents a management challenge.

Goal 8 – Maintain Habitat Suitability for Burrowing Owls, While Reducing Associated Impacts on Native Habitat.

Task 8.1 – Monitor the ***mean Effective Height***[1] of the vegetation in the management area using three survey transects. Keep grasses and forbs at a maximum ***mean Effective Height*** of 6" across three identified survey transects in the management area. Open Space Land Manager and/or Wildlife Biologist will take measurements monthly from January through May.

Task 8.2 – Open Space staff will maintain communication with City Wildlife Biologist, contractors and community partners to identify the need for management activity before the maximum threshold of 6" is reached. Management intensity and timing of activities will depend on yearly conditions.

Task 8.3 – Using the appropriate-sized equipment considering ground conditions and time available, use MOWING ONLY to keep grasses and weedy vegetation under the ***mean Effective Height*** threshold. DO NOT disc or cultivate – this will destroy burrows.

Task 8.4 – Use primarily mechanical and hand-removal techniques to discourage woody growth in the outlying areas that will attract predator species. Some vegetation may not be discouraged by mowing alone. Trees and shrubs that attempt to establish in the management area will be removed by hand or by mechanical means when possible to prevent the need for herbicide applications.

Goal 9 – Protect Existing Burrows and Promote Additional Burrow Complexes

Task 9.1 – Limit all vehicle and equipment access to Burrowing Owl Management Area to prevent burrow collapse. Use lightest equipment possible, like ATV-towed mower, to mow area for vegetation management.

Task 9.2 – Ensure City staff and contractors do not disc, cultivate or make herbicide applications to burrow complexes. Use weed trimmers or hand weeding to expose burrows during wet months.

Task 9.3 – Maintain signage, fencing and enforcement to prevent public and domestic animal access to the management area. Work with community partners to help educate the public about proper site access.

Task 9.4 – Minimize negative impact on ground squirrel populations from adjacent agricultural operations. Work with City conservation partners like the Yolo RCD or NRCS and outreach to adjacent growers regarding their orchard IPM systems and possible negative impacts on the ground squirrel – burrowing owl relationship.

[1] Effective Height is the highest increment (in inches) on a white board where at least 90% of the horizontal extent of the board is obscured when viewed 1 meter from the ground at a distance of 10 meters. It accounts for both height and density of vegetation.

Channel A

Channel A is a storm water conveyance channel that carries storm water runoff from the north side of the City to Willow Slough Bypass. This is the only permanent water feature on the site and is important refuge for mammals, birds and reptiles, particularly during summer months. The channel has the potential to support the listed Giant Garter Snake and Valley Elderberry Longhorn Beetle species.

Goal 10 – Enhance Habitat Values of Channel to Support Listed Species

Task 10.1 – Monitor channel feature to determine existence and size of listed species populations already on site

Task 10.2 – Using established recovery plans, enhance desirable vegetation with seeding and planting to support listed species

Task 10.3 – Clearly mark setbacks up to 50' from channel bank to prevent herbicide applications and heavy equipment entering sensitive areas

Pole Line Road Right-of-Way

The City maintains approximately 800' of Right-of-Way along Pole Line Rd on the west side of the property. This area includes native grasses and a small hedgerow-like feature that include native trees and shrubs. A gravel walking path runs along the right-of-way, parallel to Pole Line Rd and enters the Ag Buffer at the west entrance.

Goal 11 – Maintain Pole Line Right-of-Way and Walking Path Clearance

Task 11.1 – Keep roadside clear of trash and debris at all times of year

Task 11.2 – Prune vegetation back from path and roadside to maintain visibility and access for vehicle emergencies

Task 11.3 – Monitor shoulder and path integrity; coordinate with Public Works Utilities and Operations to do repairs

Planting Islands

There are several locations throughout the north section where a selection of native and naturalized plants was installed in tight groupings. These "Planting Islands" are more of a landscaped feature and require slightly different management than the majority of the site.

Goal 12 – Enhance existing Islands to increase native flora biodiversity

Task 12.1 – Remove all non-native trees and shrubs currently growing in planting islands

Task 12.2 – Prune or remove dead native vegetation to encourage regrowth and make room for additional species

Task 12.3 – Rehabilitate irrigation infrastructure in order to provide water for re-plants in islands

Task 12.4 – Identify additional "Forb Only" planting islands to further increase biodiversity through targeted seeding

C. Public Use Elements

The site has been designed to allow for low impact recreational uses that are consistent with the urban/agriculture buffer and resource protection objectives identified for the site. As the most accessible open space area for many Davis residents, the Ag Buffer provides the best opportunity to experience a landscape representative of historic valley floor grassland and oak savannah plant and animal communities. Beyond the pure recreational value, the site can build support for preservation of similar landscapes through nature appreciation and education. Use and exploration of the site introduces visitors to natural communities that are rare in the Davis area, which can foster a sense of appreciation leading to active support of the Davis open space program.

Goal 13 – Enhance visitor experience through improved interpretive displays and educational opportunities.

Task 13.1 – Work with OSH Commission and partners to identify possible interpretive subjects

Task 13.2 – Update all other signage on site as part of larger Open Space project

Task 13.3 – Improve communication of allowable uses through addition of simple, universally understood imagery

Task 13.4 – Work with community partners to establish city-sponsored educational events and tours

Goal 14 – Protect wildlife from disturbance due to humans and dogs

Task 14.1 – Continually monitor fencing and signage for breaks or vandalism and repair as soon as possible to prevent trespass

Task 14.2 – Improve signage to better communicate importance of leash laws and the need protect wildlife resources

Task 14.3 – Perform annual "Enforcement" action with PD to warn or cite people using the area inappropriately

Goal 15 - Maintain condition of trail corridor to make it the most attractive route through Ag Buffer

Task 15.1 – Maintain path integrity by managing vehicle traffic, monitoring for squirrel holes and replacing material as needed

Task 15.2 – Maintain benches by cleaning vandalism and keeping vegetation clear from sitting areas

Task 15.3 – Maintain visibility along paths by pruning vegetation up to at least 10’

Task 15.4 – Wherever possible, prune trailside trees and shrubs to provide areas of shade and refuge from the sun

D. Facility Maintenance Elements

There are no formal facilities or structures on the Ag Buffer, and there are no plans to add those features in the future. There are, however, several benches, a wooden bridge over Channel A, signage and approximately four miles of fencing to maintain. These features add to the functionality of the site by providing rest areas and clear delineation of publicly accessible areas.

Goal 16 – Ensure the site is safe for users at all times

Task 16.1 **-** Coordinate with Public Works to perform annual check on wooden bridge to ensure safety

Task 16.2 – Continually monitor site for illegal camping and work with PD to resolve any issues

Task 16.3 – Monitor for overhead dangers like dead limbs and remove as needed

Task 16.4 – Empty trash cans and remove any additional litter from the site weekly

Task 16.5 – Ensure all areas highlighted on the site’s Fire Abatement Map (Appendix X) are kept mowed between the months of May – September to serve as a fire break.

E. Biological Monitoring Element

A Monitoring Plan that includes photo, vegetation and avian elements is attached to this document as Appendix B.

V. OPERATIONS AND MAINTENANCE SUMMARY

A. General Implementation Summary

The tasks identified in this plan are implemented by city staff, contractors, non-governmental organization (NGO) partners and members of the community. Appendix A contains a workplan that will be used as a guide for this implementation and identifies the appropriate parties to complete each task.

B. Existing Staffing and Anticipated Future Needs

The Open Space Program is only staffed by one full-time position, the Open Space Lands Manager. The Program is overseen by the City's Manager of Property, Leases and Open Space on a part-time basis. Additionally, there is one part-time field technician to support site maintenance. The City's Wildlife Biologist also contributes significant support through wildlife monitoring, project input and public outreach. Professional maintenance and conservation services are provided by several local vendors. Additionally, local conservation NGO partners provide volunteer support for public events.

C. Partners

The *Yolo County Resource Conservation District* provides professional resource conservation services to directly support management goals. *Tree Davis* is a Davis non-profit that supports the program by coordinating volunteer events on site. The local *Yolo Audubon* chapter maintains two western bluebird nest boxes on the site. *The Burrowing Owl Preservation Society* is a local organization that advocates for and directly supports the management of burrowing owl habitat in Yolo County, including Wildhorse.

D. References

City of Davis Park and Community Services Department, Open Space Division. (2002). *Wildhorse Urban/Agricultural Transition Area (UATA) Management Plan*. Davis, CA.

Hoshovsky, Marc. Personal interviews and correspondence. 2016 – 2018

McNerney, John. Personal interviews and correspondence. 2016 – 2020

Portman, Catherine. Personal interviews and correspondence. 2017 – 2020

Appendix A
Annual Work Plan

	Location	Activity	Timing	Equipment	Personnel
January	All Active Project Locations	Re-vegetation	in winter when ground is wet	shovels, plants, tubes, stakes, dibble sticks	Staff, contractors, volunteers
February	Paths and Benches	Vertebrate pest control - control ground squirrels and gophers	in early spring for ground squirrels when using poison, year-round with traps	pesticide and applicator, traps	Staff, contractors
	All grasses	Invasive species control - thistle, mustard, filaree	early in growth stage	backpack, ATV sprayer, weedeater, mower, shovel	Staff, contractors
	All areas	Tree and shrub care - pruning, coppicing, etc.	during dormancy	pole saw, pruners, loppers, hand saws	Staff, contractors
	Burrowing Owl Management Area	Monitor transects for mean effective vegetation height – maximum 6”	Once per month	Monitoring grid, binoculars, notebook	Staff, volunteers
March	all trails	Clear trails for access	in early spring after high water, in late spring after winds, early summer to remove weeds	mower, chainsaw, pole saw, tractor, loppers pruners, ATV sprayer, backpacks	Staff, volunteers
	All areas	Invasive species control - thistle, mustard, filaree, annual grasses	early in growth stage	backpack, ATV sprayer, weedeater, mower, shovel	Staff, contractors
	Burrowing Owl Management Area	Monitor transects for mean effective vegetation height – maximum 6”	Once per month	Monitoring grid, binoculars, notebook	Staff, volunteers
April	Annual Grass Weed Management Areas	Mow to control annual grasses	as needed to control annual grasses and keep areas clean - before events	mower, weedeaters	Staff, contractors
	All areas	Event prep and clean up	before Spring events and for environmental ed	mower, chainsaw, pole saw, loppers pruners, weedeaters, pressure washer	Staff, volunteers

Appendix A
Annual Work Plan

	Location	Activity	Timing	Equipment	Personnel
	Burrowing Owl Management Area	Monitoring and Mowing to control vegetation mean effective height - maintain at maximum of 6"	as needed	walk-behind mower or weedeater	Staff, contractors, volunteers
	All areas	Invasive species control - mustard, lambs ear, hemlock, annual grasses	early in growth stage	backpack, ATV sprayer, weedeater, mower, shovel	Staff, contractors
May	Fire abatement areas	Mow along wood fences and houses	as needed to control annual grasses and keep areas clean	mower, weedeaters	Staff, contractors
	All trails	Trail-side mowing to control foxtails for users	after rains to prevent re-growth	mower, weedeaters	Staff, contractors
	All areas	Vegetation, photo and avian monitoring	throughout month	volunteers, GPS, Camera, Data sheets, Measuring tape, quadrat, maps, species list	Staff, volunteers
June	All trails	Clear trails for access	As needed to maintain visibility	mower, chainsaw, pole saw, loppers, pruners	Staff, volunteers
	Any new plantings	irrigation	as needed	pumps, pipe	Staff, contractors, volunteers
July	All areas	invasive species control - control for summer weeds around grounds as needed	before flowering if possible, bag seed heads by hand is necessary	backpack, ATV, shovels, hoes	Staff, contractors
	Any new plantings	irrigation	as needed	pumps, pipe	Staff, contractors, volunteers
August	All trails	Clear trails for access	As needed to maintain visibility	mower, chainsaw, pole saw, loppers, pruners	Staff, volunteers

Appendix A
Annual Work Plan

	Location	Activity	Timing	Equipment	Personnel
	Any new plantings	irrigation	as needed	pumps, pipe	Staff, contractors, volunteers
	All fences	monitor fence conditions, repair as needed to prevent trespass	throughout summer months	wire, cutters, posts, post pounder	Staff
September	Burrowing Owl Management Area	Mow vegetation to control height, uncover vacant burrows	Late summer, August and September	Walk-behind mower, weedeaters, rakes	Staff, contractors, volunteers
	Any new plantings	irrigation	as needed	pumps, pipe	Staff, contractors, volunteers
October	All areas	Monitoring for changing conditions	throughout fall, after high wind events	mower, chainsaw, pole saw, loppers pruners, weedeaters,	Staff, volunteers
November	Revegetation areas	Seed native grasses - drill or broadcast seed in desired areas	early fall, after the first rains	seed, belly grinder, ATV broadcast seeder, tractor seeder, drill seeder,	Staff, contractors, volunteers
	Native grass stands	Burn native grasses or otherwise promote nutrient cycling	early fall, after the first rains	dip torch, fuel, water truck, fire crews as needed	Staff, contractors, DFD and others
December	Revegetation areas	Re-vegetation - planting and irrigation set-up as needed around grounds	after rains when ground is wet	shovels, pick, auger, dibble, plants, tubes, stakes	Staff, contractors, volunteers
	All areas	Burn, chip or remove unwanted brush	burn day	dip torch, fuel, water truck, fire crews as needed, chipper, tractor	Staff, contractors
	Cultural Areas?	Coppice Redbud, prune willows	as needed	chainsaw, loppers, truck and trailer	Staff, volunteers

Appendix B
Monitoring Plan

City of Davis Open Space Photo, Vegetation and Avian Monitoring Protocols – Wildhorse Agricultural Buffer

Purpose

The purpose of this document is to provide protocols and guidelines for conducting photo, vegetation and avian monitoring of the Wildhorse Agricultural Buffer Open Space property. These monitoring efforts are required for responsive habitat management and are also important for funding and educational opportunities. The three types of monitoring are designed to be conducted on at least an annual basis. This work can be conducted by staff or volunteers and this plan includes all the necessary information to ensure surveys are consistent and comparable over time.

Photo Monitoring

Photo monitoring is the simplest form of monitoring that can be conducted on the sites. This type of monitoring involves taking photographs at pre-determined points, from the same view point, over time. The time lapse between photos can show changes in vegetation and land features that may be imperceptible to even the most diligent land managers. Photo monitoring of the Open Space will be conducted as follows:

1. Monitoring points around each site have been identified, marked and mapped. See appendix A for map and list of coordinates.
2. All photos should be taken facing the direction specified in the coordinates list.
3. Photos should be taken with the camera zoomed OUT, horizon in the center of the picture
4. At least three photos should be taken at each point to ensure a useable picture is captured – it is often hard to see photo results on a small screen in the field

Tools needed: Camera, GPS unit, map of points, previous year's photos

Timing: Photo monitoring should be completed in the spring or very early summer each year. This timing will allow us to document the landscape when the highest number of plant species are visible, revealing the most information about habitat values and changes. Subsequent yearly monitoring photos should be timed within two weeks of the first year's photo date, whenever possible.

Appendix B
Monitoring Plan

Vegetation Monitoring

Vegetation monitoring will be conducted on the Open Space properties to help gauge the habitat value and inform management decisions. This form of monitoring is more complex than simple photo monitoring because it includes plant identification, classification, cover estimates and cross-country travel. This type of monitoring will be conducted as follows:

1. Monitoring points around the each site have been identified, marked and mapped. See Appendix B for map and list of coordinates.
2. At each monitoring point a 1X1 meter quadrat sampling tool will be placed on the ground so that the sides are facing squarely at north, south, east, west.
3. All vegetation, litter, thatch, woody debris, soil and other substrate within the quadrat will be identified and a percentage of the total area will be assigned to each. *percentages can be greater than 100 due to layering of vegetation
    a. Vegetation within the quadrat will be identified by the following characteristics:
        i. Morphology – grass, forb, etc
        ii. Perennial or annual lifespan
        iii. Native or introduced species
4. All trees, shrubs and other woody vegetation within a 15 ft radius of the plot will be counted, categorized, Diameter at Breast Height measured and their distance from the plot recorded. Any vegetation overhanging the plot will be recorded. See Appendix C for vegetation monitoring field data sheet.
5. Two photos, taken from two different perspectives, will be recorded for each point. The first photo should be taken from 15 feet away (northwest) from the point, facing to the southeast. Photos should be taken with the camera zoomed OUT, horizon in the center of the picture. A second photo taken directly over the plot should also be recorded. Multiple copies from each perspective is recommended to ensure a usable image is captured.

Tools needed: 1X1 meter quadrat, GPS unit, camera, map of points, data sheets, pens, tape measure, DBH tape measure

Timing: Vegetation monitoring should be completed in the spring or very early summer each year. This timing will allow us to document the landscape when the highest number of plant species are visible, revealing the most information about habitat values and changes. Subsequent yearly monitoring events should be timed within two weeks of the first year's date, whenever possible.

Avian Monitoring

Avian Monitoring is an essential part of land management because avian species are great indicators of habitat values and ecosystem health. This avian monitoring protocol is designed to help

inform the management of the Open Space areas and provide a resource for other conservation professionals, birders and interested parties.

1. Monitoring points around each Open Space site have been identified, marked and mapped. See Appendix D for map and list of coordinates.
    a. The monitoring protocol uses the accepted practice of following establish trails for minimal disturbance
    b. Monitoring points are spaced between 50 - 250m apart, depending on the size of the site and should attempt to include all habitat types that occur on the site
2. At each point, participants will use a five minute interval to record every species heard or seen in the area of the point. See Appendix E for avian monitoring data sheet
    a. The distance from the point for each observation will be recorded in 10m increments, up to 100m. Observations past 100m will be grouped together
    b. Flyovers will count as an observation but be recorded as such
    c. Any behavior observations will be recorded
    d. Monitoring will be conducted between 7:00am and 10:00am to follow established survey protocol
3. Habitat type, time, date, conditions for each point will be recorded.
    a. Note any disturbances to the area, trash, equipment, noise or other factors that could affect habitat use by, or observability of, avian species

Tools needed: Binoculars, stop watch, GPS unit, map of points, data sheets, pens, field guide, distance wheel

Timing: Avian monitoring should be conducted twice during the year in order to capture migratory and resident species. The earliest monitoring should be conducted in January to ensure observation of migratory species that only occur in the area at that time. A second survey should be conducted in June to capture the presence of year-round resident species. Subsequent yearly surveys should be conducted within two weeks of the first survey year‘s calendar dates.

Special Status Species: The following species will be monitored according to specific protocols laid out in the attached documents. This monitoring will be led by the City’s Wildlife Biologist, in coordination with partners like the Burrowing Owl Preservation Society. Any observation of these two species during general avian monitoring will be noted as well.

Swainson’s Hawk

Burrowing Owl

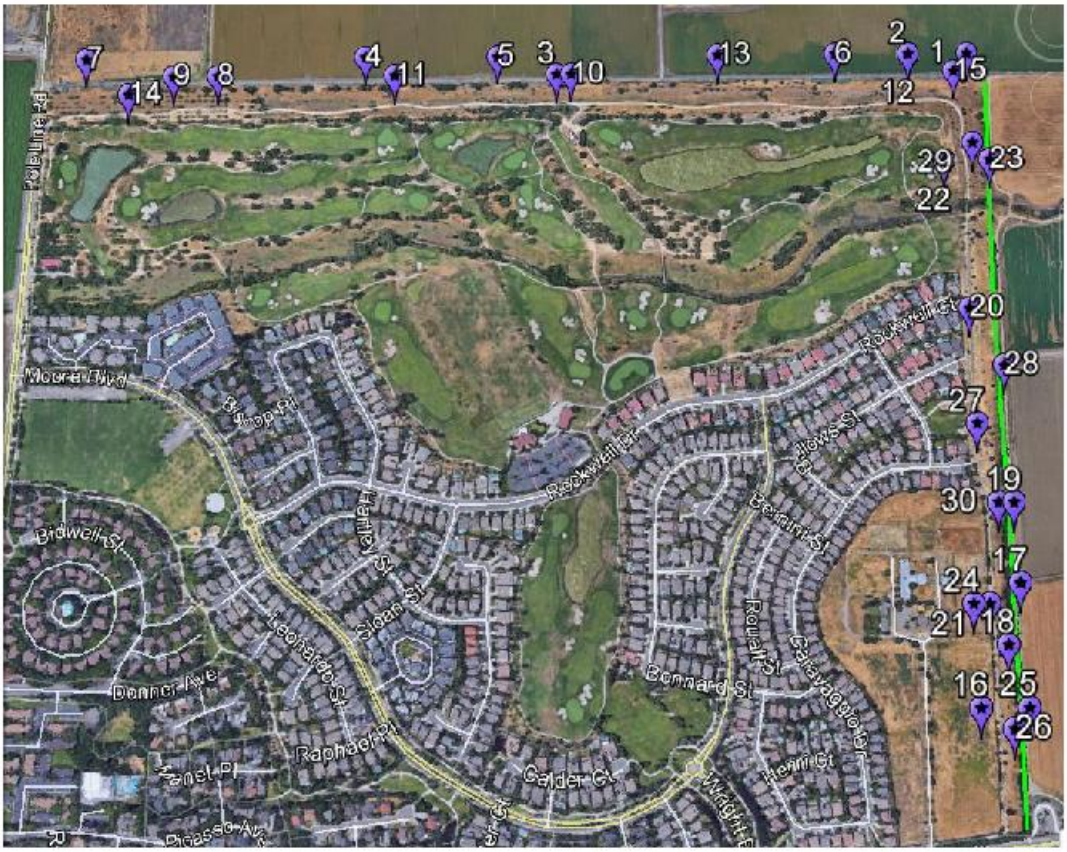
Appendix B
Monitoring Plan

Wildhorse Ag buffer Photo Monitoring Points Map—Appendix A

Latitude	Longitude	Name	Latitude	Longitude	Name
38° 34.433' N	121° 43.826' W	1	38° 34.472' N	121° 42.784' W	9
38° 34.468' N	121° 43.823' W	2	38° 34.457' N	121° 43.809' W	10
38° 34.463' N	121° 43.679' W	3	38° 34.360' N	121° 42.783' W	11
38° 34.469' N	121° 43.562' W	4	38° 34.278' N	121° 42.790' W	12
38° 34.469' N	121° 43.390' W	5	38° 34.200' N	121° 42.790' W	13
38° 34.471' N	121° 43.220' W	6	38° 34.076' N	121° 42.789' W	14
38° 34.472' N	121° 43.092' W	7	38° 34.007' N	121° 42.793' W	15
38° 34.472' N	121° 42.947' W	8	38° 33.850' N	121° 42.796' W	16

Appendix B
Monitoring Plan

Wildhorse Ag Buffer Vegetation Monitoring Map—Appendix B



Latitude	Longitude	Name	Latitude	Longitude	Name
38°34’29”N	121°42’47”W	1	38°33’55”N	121°42’49”W	16
38°34’29”N	121°42’51”W	2	38°34’01”N	121°42’46”W	17
38°34’28”N	121°43’15”W	3	38°33’58”N	121°42’47”W	18
38°34’29”N	121°43’28”W	4	38°34’05”N	121°42’46”W	19
38°34’29”N	121°43’19”W	5	38°34’15”N	121°42’48”W	20
38°34’29”N	121°42’56”W	6	38°34’00”N	121°42’48”W	21
38°34’29”N	121°43’47”W	7	38°34’23”N	121°42’49”W	22
38°34’28”N	121°43’38”W	8	38°34’23”N	121°42’46”W	23
38°34’28”N	121°43’41”W	9	38°34’00”N	121°42’49”W	24
38°34’28”N	121°43’14”W	10	38°33’55”N	121°42’46”W	25
38°34’28”N	121°43’26”W	11	38°33’54”N	121°42’47”W	26
38°34’29”N	121°42’51”W	12	38°34’09”N	121°42’48”W	27
38°34’29”N	121°43’04”W	13	38°34’12”N	121°42’46”W	28
38°34’27”N	121°43’44”W	14	38°34’24”N	121°42’47”W	29
38°34’28”N	121°42’48”W	15	38°34’05”N	121°42’47”W	30

Appendix B
Monitoring Plan

Vegetation Monitoring Field Data Sheet – Appendix C

Appendix C

City of Davis Open Space Vegetation Monitoring Field Data Sheet

Date

GPS and projection system

Plot/Habitat Description

Picture

Team

within 15 feet

Morphology	Per/Ann	N/I	Veg % cover	% Thatch cover	% Soil	% Rock	Shrubs	Trees	DBH	Distance	Over Plot (Y/N)

Appendix B
Monitoring Plan

Wildhorse Avian Monitoring Point Map—Appendix D

Latitude	Longitude	Name	Latitude	Longitude	Name
38° 34.452' N	121° 43.819' W	A1	38° 34.414' N	121° 42.791' W	A7
38° 34.465' N	121° 43.637' W	A2	38° 34.273' N	121° 42.795' W	A8
38° 34.461' N	121° 43.459' W	A3	38° 34.136' N	121° 42.792' W	A9
38° 34.466' N	121° 43.277' W	A4	38° 33.997' N	121° 42.795' W	A10
38° 34.461' N	121° 43.095' W	A5	38° 33.860' N	121° 42.799' W	A11
38° 34.460' N	121° 42.915' W	A6			

Appendix B
Monitoring Plan

Avian Monitoring Field Data Sheet – Appendix E

City of Davis Open Space Avian Monitoring Field Data Sheet

Appendix E

Location	Area	Month	Day	Year

First Name	Last Name	Address	Telephone	Email

Weather

Temperature	% Cloud Cover	Wind Speed

Point #	GPS Coordinates	Time	Species	≤ 10m	10-20m	20-30m	30-40m	40-50m	50-75m	75-100m	>100m	Flyovers	Breeding Observations	Notes

Appendix C
Herbicide Application Chart

Herbicide	Active Ingredient	Target Species	Timing - Growth Stage of Plant	Timing of Application - Time of Year	Oz of Product in 3 Gal Backpack	Oz of Product in 20 Gal ATV Tank
Round Up Pro	Glyphosate	annual grasses	shortly after germination	winter - early spring	6oz	40oz
		short pod mustard	rosette stage	year round, as weeds emerge	8oz	
		Italian/Milk Thistle	any time up to flowering	winter - early spring	6oz	40oz
		Star Thistle	rosette stage	late spring - early summer	6oz	40oz
		Arundo	before dormancy	late summer		
		pepperweed	before dormancy	late summer - fall	6-9oz depending on size, vigor	
		poison oak	before dormancy	late summer - fall	6-9oz depending on size, vigor	
Garlon 3A	triclopyr	short pod mustard	any time before flowering	year round, as weeds emerge	6-10oz depending on size, vigor of plants	
		cocklebur	any time before flowering	summer	6-10oz depending on size, vigor of plants	
		unwanted brush	any time before flowering	year round, as weeds emerge	6-10oz depending on size, vigor of plants	
		poison oak	any time before dormancy	late summer	6-10oz depending on size, vigor of plants	
				`		
Transline		Italian/Milk Thistle	any time before flowering	late winter - spring	1-2oz depending on size, vigor of plants	
		StarThistle	any time before flowering	summer	1-2oz depending on size, vigor of plants	
		Vetch	any time before flowering	spring	1oz	
Polaris	Imazipyr	Tamarisk	before dormancy	late summer	3oz	
Aquamaster	glyphosate	Tamarisk, Arundo, Ravenna Grass, Pepperweed	before dormancy	late summer, fall	6 - 12 oz	

Appendix D
Integrated Pest Management Techniques

IPM Technique	Target Weeds	Timing	Equipment
Burning	Annual grasses	late spring after grasses dry, fall after first rain	drip torch, fuel, shovels, McCleods, water tender, volunteer fire crews
	Broad leaf weeds	fall after first rain	
	Tamarisk	after mulching, dead bushes	
	Arundo	after mulching, dead bushes	
Mowing	annual grasses	in spring after flowers emerge	tractor with flail mower, ATV with mower, walk behind mower, weedeaters
	all thistle	Spring through summer, after flowers emerge	
Mulching	Tamarisk	summer before dormancy	excavator with mulching head
	Arundo	summer before dormancy	
Tilling	annual grasses	early and late spring as grasses emerge	tractor with spring tooth harrow, disc, shovel, hoe
	broad leaf weeds	early and late spring as weeds emerge, through summer as needed for late weeds	
Hand Pulling	all weeds	any time before seed falls off plants	volunteers

Appendix E
Site Map

Appendix F
Soils Map

Wildhorse Urban/Ag Transition Area Soil Map

Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

Map Unit Legend

Yolo County, California (CA113)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Mp	Merritt complex, saline-alkali	2.3	0.4%
Pb	Pescadero silty clay, saline-alkali	6.8	1.2%
Ra	Reiff very fine sandy loam	24.5	4.2%
Sp	Sycamore silt loam, drained	54.8	9.5%
St	Sycamore silty clay loam, drained	112.3	19.4%
Tc	Tyndall very fine sandy loam, drained	19.3	3.3%
Ya	Yolo silt loam, 0 to 2 percent slopes, MLRA 17	243.1	42.0%
Yb	Yolo silty clay loam, 0 to 2 percent slopes, MLRA 17	115.6	20.0%
Totals for Area of Interest		**578.7**	**100.0%**

Appendix G
Biological Elements Area Map

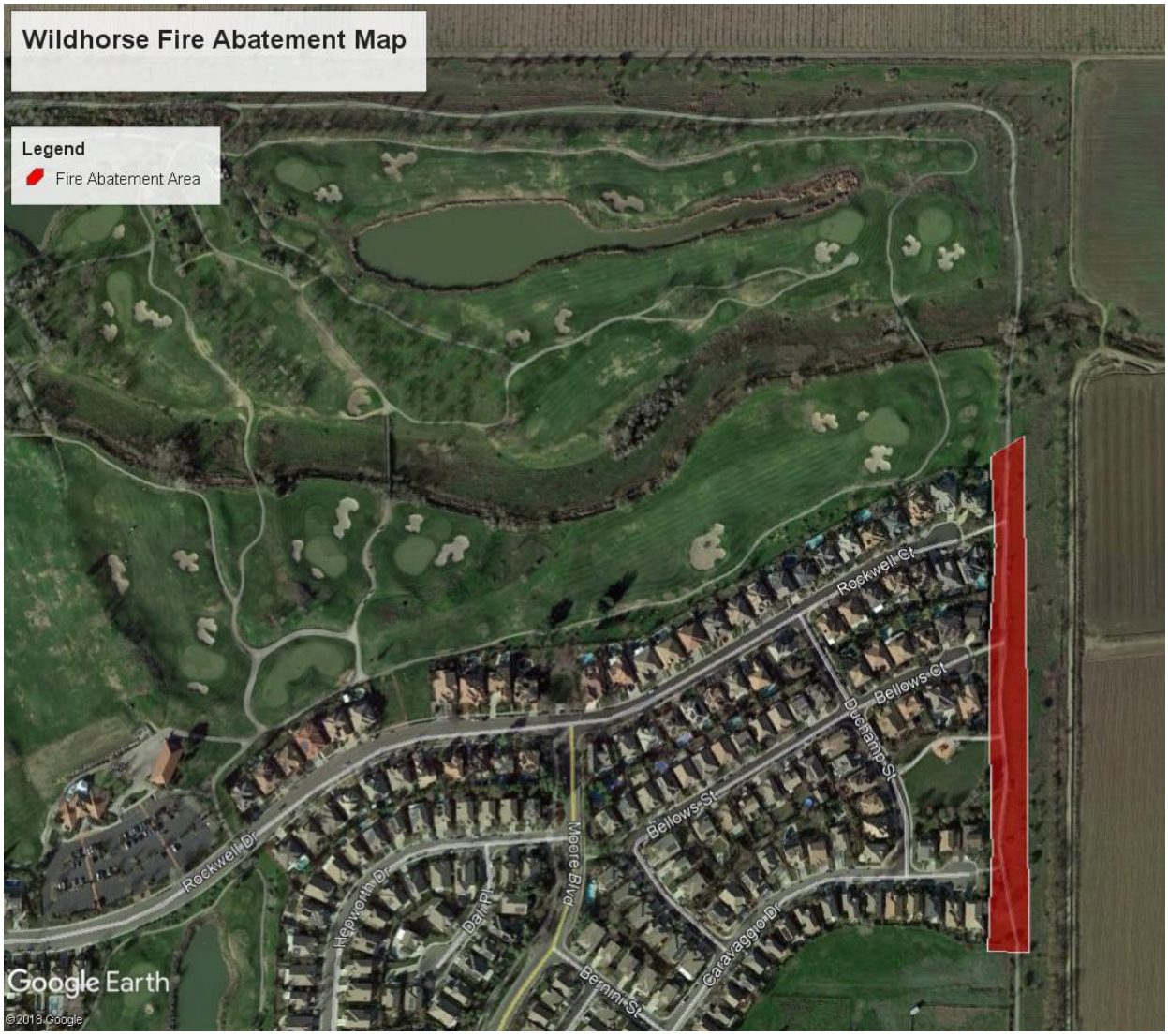
This map shows the location or general area of the Biological Elements identified in the plan. The hedgerow/windrow feature is not noted on the map, but runs the length of the north and east boundaries of the site.

Appendix H
Burrowing Owl Management Area Map

This map shows the boundaries of the Burrowing Owl Management Area in the northeast corner of the site. Pole Line Rd is approximately 1 mile to the west and Covell Blvd is approximately 0.75 miles to the south.

Appendix J
Emergency Contact List and Civil Codes

This map shows the area of the site that is mowed for fire abatement each year. Covell Blvd is approximately 0.33 miles to the south.



Appendix J
Emergency Contact List and Civil Codes

Emergency Contact List

Davis Police Dispatch: 530-747-5410

Davis Police Emergency from Cell Phone: 530-758-3600

Davis Fire Department Dispatch: 530-747-5400

Davis Fire Emergency from Cell Phone: 530-756-3400

Wildhorse Golf Course: 530-753-4900

Cell Tower:

PG&E Local Rep: 916-533-3889

Open Space Civil Codes

Article 27.03 OPEN SPACE AREAS

27.03.010 Glass containers.

27.03.020 Alcohol.

27.03.030 Boating.

27.03.040 Dumping/littering.

27.03.050 Swimming/wading.

27.03.060 Fishing.

27.03.070 Hunting.

27.03.080 Firearms.

27.03.090 Camping.

27.03.100 Fires, smoking and fireworks.

27.03.110 Field sports.

27.03.120 Motor vehicles and parking.

27.03.130 Protection of plant material.

27.03.140 Protection of wildlife.

27.03.150 Protection of city facilities, improvements and natural features.

27.03.160 Trails (walking/bikes).

27.03.170 Domestic animals.

27.03.180 Property boundaries.

27.03.190 Agricultural spraying.

27.03.200 Special open space areas/liability.

27.03.210 Permit for use; application; standards; liability; revocation.

27.03.220 Enforcement.

27.03.230 Violation/penalty.