SACRAMENTO - SAN JOAQUIN DELTA CONSERVANCY
A California State Agency

PROP 1 GOVERNOR EDMUND G. BROWN, JR. WATER BOND 2014 RELIABILITY | RESTORATION | RESILIENCE

Proposition 1 Grant Program

2015-16 Staff Recommendation

I. Project Overview

Project Title	Wildlife Corridors for Flood Escape on the Yolo Bypass Wildlife Area		
Applicant	Yolo County Resource Conservation District		
Project Number	Prop 1-Y1-2015-016	**Category**	2
County	Yolo	**Funding Request**	$688,195.65
Score	87.3	**Total Project Cost**	$888,856.85
Staff Recommendation: Approval of funds conditional upon submittal of proof and verification of adequate water rights; determination by the lead agency that the project is categorically exempt from CEQA; and a signed agreement with the landowner.		**Funding Recommended**	$688,195.65

II. Staff Recommendations

Delta Conservancy staff recommend that the Board conditionally approve funding for the Wildlife Corridors for Flood Escape on the Yolo Bypass Wildlife Area project (#Prop 1-Y1-2015-016) proposed by Yolo County Resource Conservation District (Yolo RCD). Approval of funds is conditional upon the applicant providing the following: (1) proof of water rights for irrigation purposes; (2) determination by the lead agency that the project is categorically exempt from environmental review pursuant to CEQA; and (3) receipt of a signed agreement with the California Department of Fish and Wildlife giving the applicant the right to access the project site in order to implement the proposed project and committing to maintaining the habitat for 15 years. Conservancy staff anticipates receiving these items by September of 2016.

This Category 2 implementation project will create five miles (22 acres) of wildlife corridors and flood escape, and an additional 0.5-acre buffer patch in the Yolo Bypass Wildlife Area (YBWA), and includes funding for finalizing environmental permitting. This project will build on decades of work by a broad coalition of conservationists and

stakeholders to restore habitat in the Yolo Bypass Wildlife Area (YBWA), and implements multiple state priorities.

The applicant has plans in place to obtain the permits necessary for initiating site preparation within six months of executing the grant agreement, and will complete restoration within two years. Local support is a strength of this project. Yolo RCD has extensive experience with native plant corridor installation, extensive knowledge of native plant habitat and cultivation, and a proven history of working with farmers and ranchers. The applicant is ready to begin work towards restoration goals in this important floodway, agricultural and habitat landscape, using the best available science for plant selection, corridor design and adaptive management techniques to ensure a successful project that supports and enhances ecological, agricultural, and recreational functions of the YBWA. The benefits of wildlife corridors and cover are well established in scientific literature. The applicant acknowledges that use of wildlife corridors for flood escape is not well studied and proposes to collect data on this benefit through the use of wildlife cameras. The applicant lays out a clear approach to long-term management that is supported by the project's monitoring plan and allows for adaptive management of the site. The project is expected to increase resilience to climate change by improving ecosystem health and diversity, providing connectivity to different habitat types, and providing escape from flooding.

This project is an opportunity to establish flood-adapted, floodway-sanctioned, agriculture-friendly habitat corridors and patches on the YBWA. The project proponent has the expertise and experience, as well as partnerships, to make the success of this project highly likely to yield ecosystem benefits.

Staff has prepared the text and tables below based on staff's best understanding of the information provided in the application. The Conservancy has received comments on the proposal from the Delta Stewardship Council and the Delta Protection Commission. If approved, staff will work with the applicant to further refine the project's scope of work and performance measures, and to address comments prior to entering into a grant agreement.

III. Project Summary

Project Description:

This project will provide wildlife flood escape cover and enhance year round habitat for a variety of migratory birds, pollinators, and other wildlife by creating five miles (22 acres) of new, floodway-compatible wildlife and pollinator habitat and floodway-escape corridor, and a 0.5-acre buffer patch in of the YBWA. The habitat type restored will be native floodplain meadow and riparian woodland. As flood waters rise from east to west in the YBWA, wildlife currently lacks adequate cover to move out of lower areas or to escape aerial predation. Project proponents have identified corridors that, if planted with a mix of native plants, could provide year-round wildlife passage and much needed cover for wildlife escaping flood events. This project is an initial effort to implement multi-benefit

habitat restoration that provides cover for a diverse set of species and is compatible with the surrounding agricultural operations on the YBWA.

Proposed restoration sites are a mixture of grazed and unmanaged grasslands consisting primarily of annual grass and noxious invasive weeds. Treatment of noxious plant species will support a diverse mix of regionally appropriate native plant species. This project will provide educational opportunities and create public connections to habitat restoration in the Delta by engaging the community in implementing restoration. The regional community will be engaged through organized field days involving high school students and community volunteers in hands-on learning about restoration and planting native plants in the corridor areas. This will expose the public to usually off-limits parts of the bypass, expanding awareness and understanding of the area's importance for flood safety, agriculture, and wildlife. Wildlife use of the habitat corridors will be monitored to measure success and inform future restoration efforts.

Project partners have a breadth of experience and track record of working effectively with farmers, ranchers, and communities to implement restoration projects. These partners include the California Department of Fish & Wildlife (CDFW), Yolo Basin Foundation (YBF), Putah Creek Council, Center for Land-Based Learning, Natural Resources Conservation Service (NRCS), Point Blue Conservation Science, and UC Davis. Yolo RCD also plans to involve lease-holding farmers and ranchers and the general public in implementing this project. By engaging the community in planting events in coordination with the Yolo Basin Foundation, Center for Land-Based Learning, and Putah Creek Council's community-based stewardship program, this project will also create a larger awareness of YBWA and the efforts to improve habitat that will benefit both the ecosystem and people.

Location (Site Description):

The project is located on the YBWA in the Yolo Bypass in Yolo County between the cities of Davis and West Sacramento. The YBWA is owned and maintained by CDFW, and a signed access agreement is requested as one of the conditions for awarding funding for this proposal. The general terrain is nearly flat with a slight decrease in elevation from west to east from north to south. It is composed of predominantly annual grassland with weedy broadleaf plants along irrigation or drainage canals. There are occasional, seasonal wetlands with emergent vegetation (cattails) and widely scattered trees or small shrubs mostly along drainage canals.

IV. Implementation of California Water Action Plan and Consistency with Prop 1 and Conservancy Enabling Legislation

State Priority/Plan	Action	Project Benefits
Proposition 1	Ch. 6 79732(a)(2) Implement watershed adaptation projects in order to reduce the impacts of climate change on California's	Creates a corridor of habitat for wildlife that runs across the Yolo Bypass. This habitat connectivity will allow species to move along areas of suitable habitat and so

	communities and ecosystem.	accommodate flood events which are linked to climate change.
State Priority/Plan	**Action**	**Project Benefits**
Proposition 1	Ch. 6 79732(a)(4) Protect and restore aquatic, wetland, and migratory bird ecosystems, including fish and wildlife corridors and the acquisition of water rights for instream flow.	Creates a corridor of habitat for wildlife that will provide high quality habitat for insect populations, migratory bird populations, and other upland Delta species.
	Ch. 6 79732(a)(12) Assist in the recovery of endangered, threatened, or migratory species by improving watershed health, instream flows, fish passage, coastal or inland wetland restoration, or other means, such as natural community conservation plan and habitat conservation plan implementation.	The restored habitat will benefit a range of state and federally listed species including Swainson's hawk, giant garter snake, western pond turtle, and riparian brush rabbit. It will also benefit a large numbers of migratory bird species.
California Water Action Plan	Action 3. Achieve the Coequal goals for the Delta.	Protects and restores Delta ecosystems.
	Action 4. Protect and Restore Important Ecosystems.	Protects and restores wooded upland habitats that support several listed species.
	Action 8. Increase flood protection.	Integrates flood protection with habitat creation that will accommodate flood events.
Delta Conservancy Enabling Legislation	§32301(i)(1) Protect and enhance habitat and restoration.	Protects and restores wooded upland habitats that support several listed species.
	§32301(i)(3) Increase the resilience to floods.	Creates and maintains floodplains that will accommodate flood events and contain high quality habitat.
	§32301(i)(6) Restore the region's physical and living resources.	Restores five miles (22 acres) of riparian woodland which better represents the more natural state of the area, both physically and biologically.
	§32301(i)(7) Assist locals with NCCPs.	Complements the Yolo HCP/NCCP by enhancing and providing habitat to two of the species covered by the Yolo HCP/NCCP—giant garter snake and western bond turtle. While this property is consistent with the Yolo HCP/NCCP, it is not serving as mitigation and therefore

		would be eligible for Prop. 1 funds
State Priority/Plan	**Action**	**Project Benefits**
Delta Conservancy Enabling Legislation	§32301(i)(8) Promote environmental education.	Restored habitat, community involvement, involved partners, and proximity to schools encourages environmental education in the area.
Delta Conservancy Strategic Plan	Objective 3.2. Lead Delta ecosystem restoration activities consistent with Conservancy authorities, the Delta Plan and other regional plans and guidance, through a voluntary Delta Restoration Network, and based on adaptive management. Strategy 3.2.2. Establish, enhance and maintain migratory corridors for fish, birds and other animals. Strategy 3.2.3. Protect and enhance wetland and upland habitats on subsided lands, as consistent with agricultural operations.	Establishes and maintains native upland habitat that will serve as corridors for wildlife.
Delta Plan	ER P2. Restore habitats at appropriate elevations.	Creates a section of habitat corridor that will help to link the Yolo Bypass floodplain to surrounding areas of habitat. Restoration provides transitional habitat to upland elevation.
	ER R2. Prioritize and implement projects that restore Delta habitat.	Ensures connections between areas of habitat being created and existing habitat areas. Restoration is in Yolo Bypass priority restoration area.
	RR P4. Floodplain protection.	Creates habitat on a floodplain and also maintains flood protection function.

V. Outcomes/Outputs

Project Goals	Desired Project Outcomes	Output Indicators
Goal 1. The Yolo RCD will create wildlife habitat on the YBWA that promotes wildlife flood-safety problems and enhances habitat year-round.	Two habitat corridors installed. One publicly-accessible demonstration planting approx. 0.5 acre. Monitoring data that measures project success.	Miles of corridor established. Acres of habitat and publicly accessible demonstration planting established. Pollinator, butterfly, bird and mammalian wildlife monitoring data.
Goal 2. The YCRCD will use strong partnerships during the contract period to implement restoration and educate and connect the public to restoration in the Delta.	High school students educated about restoration methods and with on-the-ground experience in same. Community members connected to and experienced in on-the-ground restoration in the Delta.	Number of SLEWS days held. Number of community volunteer days held. Monitoring data and surveys that assess community participation, knowledge transfer and project.

VI. Budget

Total cost for this project is $888,856.85. The Delta Conservancy is being asked to approve $688,195.65 in Prop 1 funds. The remainder will come from the applicant contributing $60,000 (in-kind), CDFW contributing $28,000 (in-kind), Natural Resource Conservation Service contributing $45,000 (in-kind), Point Blue Conservation Science contributing $15,286 (in-kind), U.C. Davis contributing $18,960 (in-kind), the Center for Land Based Learning contributing $10,076 (in-kind), the Yolo Basin Foundation contributing $11,189 (in-kind), and the Putah Creek Council contributing $12,150 (in-kind).

VII. Consistency with Grant Program Guidelines

Readiness (Including CEQA Status if Applicable):

Plans for obtaining necessary permits are in place, and will facilitate a start date that is within six months of executing the grant agreement. Hydraulic modeling will be completed to support a flood permit application and encroachment permit from the Central Valley Flood Protection Board and the US Army Corps of Engineers, Section 408. The applicant intends to coordinate with CDFW and the U.S. Fish and Wildlife Service staff to utilize the existing Biological Opinion for giant garter snake. This project is covered under the YBWA Land Management Plan (LMP) for which a Negative Declaration was prepared pursuant to the provisions of CEQA. However, because the LMP's CEQA compliance is several years old, the applicant filed a Notice of Exemption under California Code of Regulations Title 14

Section 15304: Minor Alternations to Land (d): "Minor alterations in land, water, and vegetation on existing officially designated wildlife management areas or fish production facilities which result in improvement of habitat for fish and wildlife resources or greater fish production." The applicant filed on March 14, 2016.

CBEC Inc., Eco Engineering has been identified as a subcontractor on this project for the development of the restoration design plans. Contractual funds will be obligated to project partners Yolo Basin Foundation, Putah Creek Council, and the Center for Land-Based Learning for their roles in implementing this project.

Local Support:

This project has strong local support from the community. Letters of support were included from one city, four NGOs, two local districts, one university, and one federal agency. The Delta Protection Commission has confirmed that the project applicant has informed them of this project. The landowner, CDFW, is identified as a partner in this project.

The applicants demonstrate that this project has extensive partnerships in the area. The relationship built with the grazing lessee has resulted in their cooperation with the design, implementation, and management process of this project. The Yolo Basin Foundation has engaged volunteers in Yolo Bypass stewardship and management issues for more than 20 years and has worked closely with landowners and managers throughout the Bypass, integrating the larger community with the practical, day-to-day management of the resource. The Yolo Basin Foundation provides an outreach conduit to the community, both through its planned volunteer workdays in support of the project, but also in its formal outreach to its membership and the public. Putah Creek Council is a long-standing community stewardship organization working throughout the watershed. They bring a dedicated group of volunteers who care deeply about the watershed they live in to our partnership and will contribute their labor and their support to our efforts. The Center for Land-Based Learning provides quality educational restoration experiences to students throughout Yolo County, adjacent counties and elsewhere in the state.

Scientific Merit:

The project's scientific basis is well developed and the proposal cites a broad body of scientific literature. Studies of wildlife corridors and their benefits began in the early 1990s. These, and more recent studies, demonstrate that corridors provide wildlife with wind and weather protection, escape cover, food and foraging sites, reproductive habitat, and travel corridors. These benefits emphasize the importance of re-connecting separated habitat areas and providing safe, diverse corridors for wildlife movement to allow response to changing weather, climate, food, population and other life-history needs. Native plants and beneficial insects have also been documented to benefit from wildlife corridors. There is a scarcity of research on the benefits of wildlife corridors during flood events. It is reasonable to propose that wildlife corridors would provide shelter and cover during escape from rising flood waters. This proposal will use game trail cameras during strategic times of the year, and during any flood events that occur during the contract period. Data collected by these cameras will serve as pilot documentation of the benefits of wildlife corridors during flood events and to inform future similar work. This will also keep

monitoring costs low. The applicants will use the same program principles and practices as those used by the UC Davis Road Ecology Center's research program as a model for the wildlife corridor use observations in this proposal.

Long Term Management & Adaptive Management Plan:

The applicant lays out an approach to long-term management that will likely be effective. Management of the restoration sites will be supported by monitoring and is expected to incorporate adaptive management of the site. Applicants will use grazing as a long-term approach to weed management. Weed management is the main long-term management need. Grazing will be excluded via fencing during the three-year establishment period. Since the RCD manages the grazing leases for CDFW, the applicant will work with the grazers and CDFW to implement strategies for weed management that are compatible with native grass and shrub maintenance. CDFW, the landowner, has agreed to maintain the corridor over the long term, and a signed agreement confirming that CDFW will maintain the habitat for at least 15 years is a condition for awarding funding for this proposal. The project proponent plans to adapt project activities based on monitoring data. This will allow applicants to catch and mitigate for unexpected events and outcomes to insure overall project success.

Monitoring and Assessment:

The applicant has proposed monitoring that will provide data on the short- and long-term success of the project. The project's monitoring goals will help ensure that the applicant meets their planned performance measures, remain aware as unexpected situations occur, and adaptively manage their work to mitigate for unforeseen circumstances. Point Blue Conservation Science will perform wildlife monitoring for project effectiveness documentation. Monitoring data collected through this project will be shared with other local and regional biological monitoring data repositories to help shape understanding of the condition of native flora and fauna and contribute to more effective and meaningful resource management and decision-making. Monitoring will include collection of plant survival and wildlife use data. Conservancy staff recommends that the grant agreement include additional information regarding the monitoring objectives, tasks, and timeline.

Climate Change Considerations:

This project is expected to increase resilience to climate change via multiple avenues. These include: 1) promoting the restoration of landscape functionality and resilience by replacing weedy non-native vegetation with regionally native plants that are adapted to intermittent flood plain conditions and that have already adapted to wide swings in climate conditions in California; 2) providing habitat for multiple species rather than single species. Birds, mammals, reptiles, amphibians and insects will all benefit for this native plant corridor; 3) assisting wildlife in adapting to change by providing corridors that are at the same time food, cover and nesting habitat and that cross elevation lines, allowing animals to escape under cover as inundation levels change during single events and as inundation levels change over decades; 4) providing connectivity between north-south riparian corridors and non-riparian upland habitat and food sources to the west; and 5) designing long-term management that supports dynamic ecological processes.

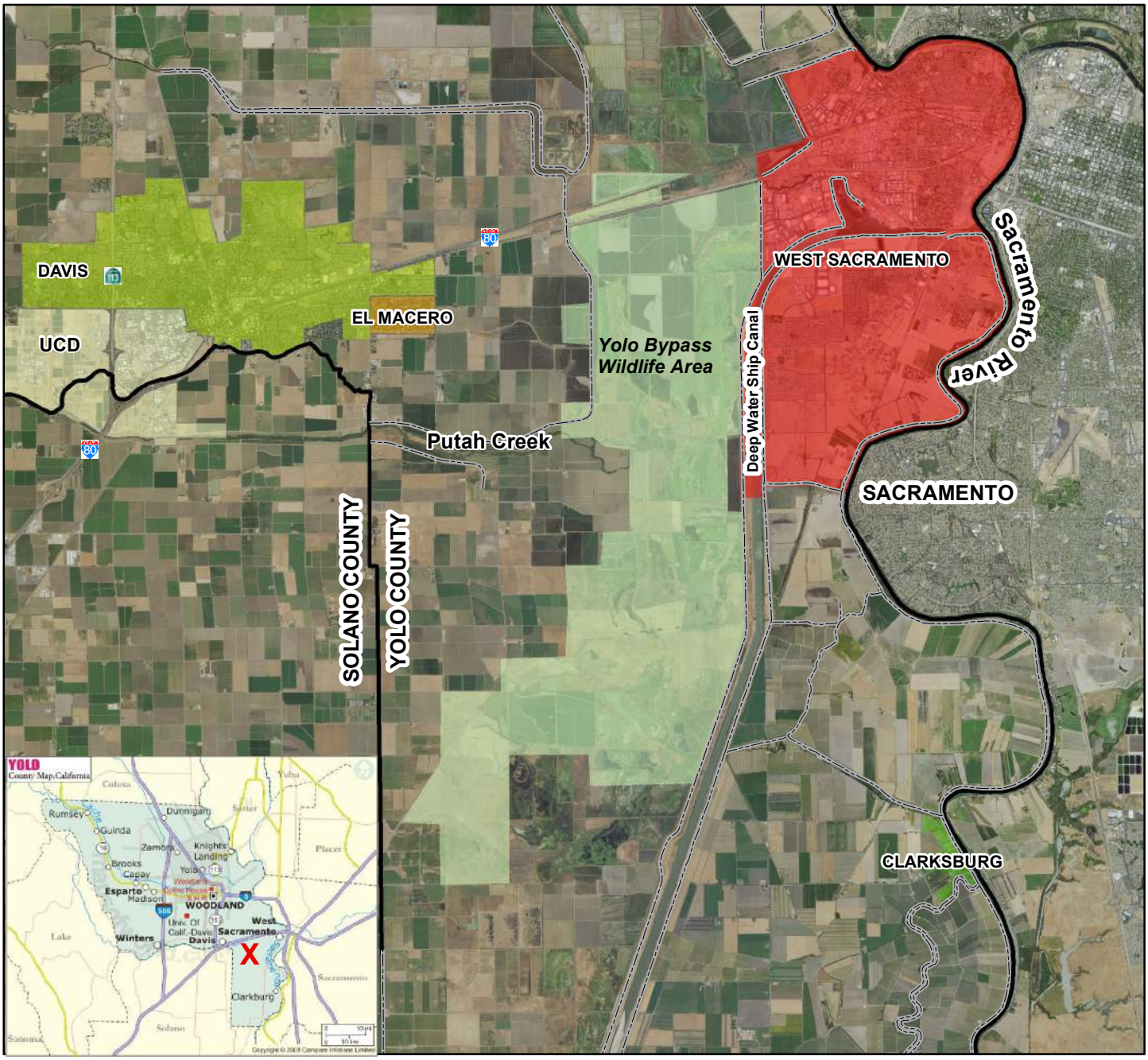
While this project is not designed to specifically mitigate climate change, its implementation will sequester carbon from the atmosphere. Analysis by the NRCS COMET-Farm whole farm carbon and greenhouse gas accounting tool estimates that the proposed 5 miles of restored habit corridor and the resulting establishment of native grasses and forbs on formerly weedy, marginal soils will improve the carbon storage capacity of soil in the project area capture and store carbon in both plants and the soil beneath them.

Yolo Bypass Wildlife Area
- Location Map -

Date: 9/12/2015

Customer(s): YOLO COUNTY RESOURCE CONSERVATION DISTRICT

Field Office: WOODLAND SERVICE CENTER
Assisted By: PHIL HOGAN
Agency: USDA Natural Resources Conservation Service



7,250 0 7,250 14,500 21,750 29,000 Feet

Legend

AREASYMBOL

Levees

DFG_

Yolo Bypass Wildlife Area

Yolo_county

UCDboundary

Cities_Towns

CITY_NAME, ACRES

CLARKSBURG:349.82754947

DAVIS:6353.20098136

EL MACERO:0

WEST SACRAMENTO:14722.6228405

USDA NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service

MAP:
2014 Aerial Photography
USDA Farm Service Agency
1:150,000

N

Yolo Bypass Wildlife Area - Wildlife Habitat Corridors Plan
- Corridors Site Plan & Location Map -

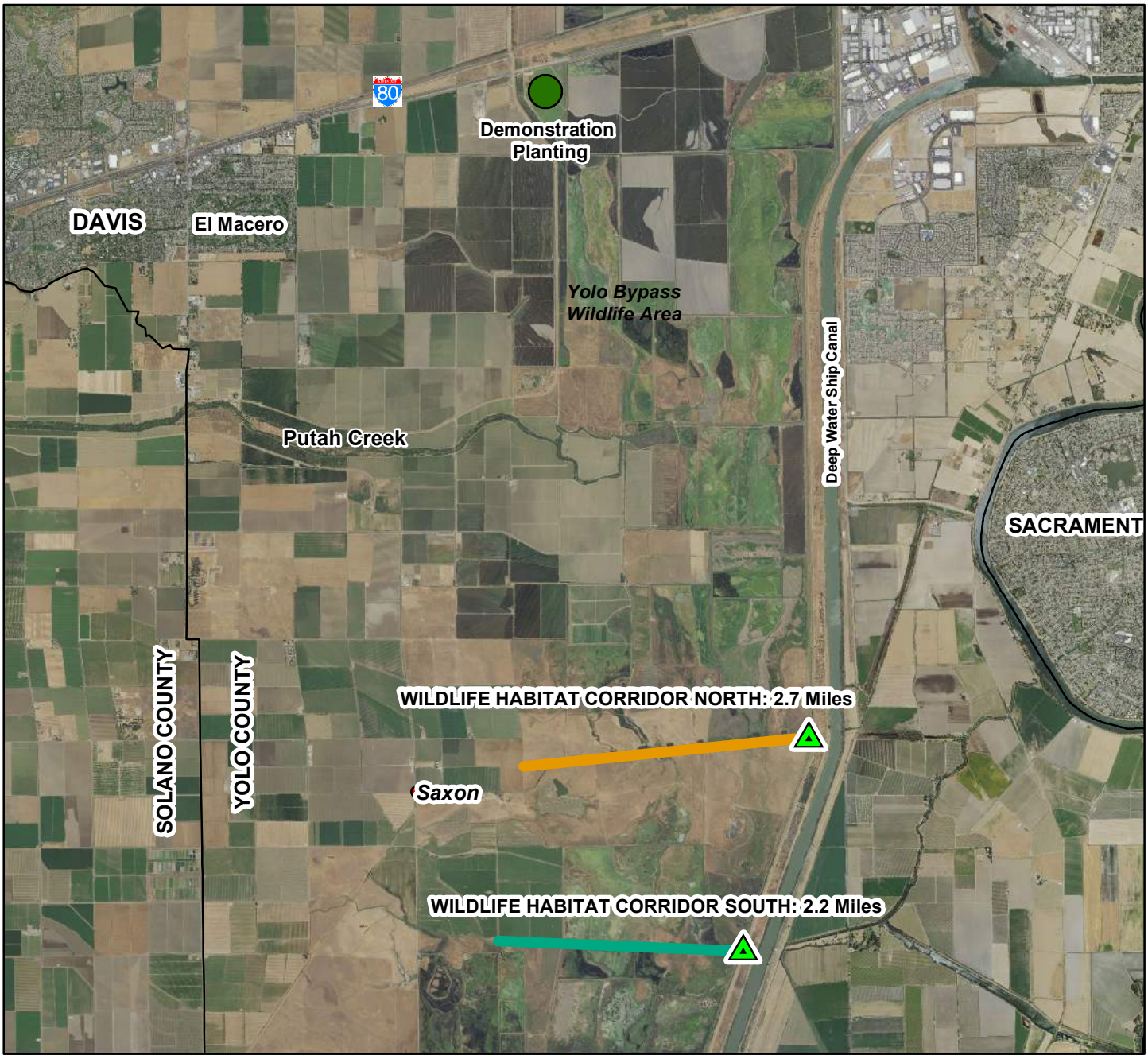
Customer(s): YOLO COUNTY RESOURCE CONSERVATION DISTRICT

Date: 12-17-2015

Field Office: WOODLAND SERVICE CENTER

Assisted By: PHIL HOGAN

Agency: USDA Natural Resources Conservation Service



4,300 0 4,300 8,600 12,900 17,200 Feet

Legend

NAME

- Saxon
- Yolo_county

USDA NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service

MAP:
2014 Aerial Photography
USDA Farm Service Agency
1:90,000

N

YBWA - Wildlife Habitat Corridor Plan

Corridor North

- Plant 935 native riparian plants on seven trestle mounds
- Establish 20 acres understory of native floodplain meadow

YBWA - Wildlife Habitat Corridor Plan

Corridor South

- Plant row of 1,000 native riparian plants along 2.2 miles
- Establish 3 acres understory of native floodplain meadow

YBWA - Wildlife Habitat Corridor Plan

Demonstration Planting

- Plant 65 riparian plants

- Establish 0.5 acre understory of native floodplain meadow

RCD Veg Concepts 3/12/16

Wildlife Habitat Corridor North 2.7 miles

Riparian corridor - plant the existing 7 trestle mounds with "pods" (or other configuration informed by hydraulic analyses) of understory and riparian woodland cover to include woody and non-woody native riparian species that range in height from 3 feet to 15 feet to be maintained by fencing out livestock. Species to include:

30% mugwort and deergrass
15% CA rose
15% coyotebrush
40% mulefat, quailbush and buttonwillow

Floodplain meadow restoration - connect trestle refugia with floodplain grassland complex of non-woody native grasses and forbs to be maintain at 3 feet or below by grazing (avg. 200 ft wide):

80% mix of native grasses including: creeping wild rye, meadow barley, blue wildrye, slender wheatgrass

20% mix of native forbs including gumplant, mugwort, milkweed spp., goldenrod, indian hemp

Wildlife Habitat Corridor South 2.2 miles

Riparian corridor - plant riparian woodland cover (north of road and south of irrigation ditch under powerlines) to include woody and non-woody native riparian species that range in height from 3 feet to 30 feet (width = 10-20 ft):

30% mugwort and deergrass
15% CA rose
15% coyotebrush
40% mulefat, quailbush and buttonwillow

Floodplain meadow restoration - Convert non-native annual grass and weeds with a strip of floodplain grassland complex of non-woody native grasses and forbs to be maintain at 3 feet or below by mowing during road maintenance (approximately 12 feet in width):

80% mix of native grasses including: creeping wild rye, meadow barley, blue wildrye, slender wheatgrass

20% mix of native forbs including gumplant, mugwort, milkweed spp., goldenrod, indian hemp

Demonstration Planting 0.6 acres

Plant riparian woodland cover along the south edge of Parking Lot A and the wildlife area with floodplain grassland complex using the same mix as above plantings to provide a demonstration showcase for the larger restoration project.