

## APPENDIX

- A Fish and Game Letter, dated April 6, 2007
- B Property Ownership
- C 2007 Master Plan Graphics
- D Workshops
- E 2007 Cost Opinion
- F WPCC Vegetation Management Plan
- G 2006 River Parkway Application

## **Appendix A**

**California Dept. of Fish and Game Letter, April 6, 2007**



DEPARTMENT OF FISH AND GAME

<http://www.dfg.ca.gov>

North Central Region

1701 Nimbus Road, Suite A  
Rancho Cordova, CA 95670  
(916) 358-2900



April 6, 2007

Mr. John Donlevy, City Manager  
City of Winters  
318 First Street  
Winters, CA 95694

Dear Mr. Donlevy:

In May of 2006, The Department of Fish and Game (Department) was contacted by the Lower Putah Creek Coordinating Committee (LPCCC) to discuss the potential removal of various fish passage impediments occurring within Putah Creek, Yolo County. The Department conducted site visits in conjunction with the LPCCC to identify appropriate fish passage remedies.

As a follow-up to the initial site visit of May 2006, on March 16, 2007, Mr. Michael Healey and Mr. James J. Navicky of the Department conducted a site visit to the "percolation dam" to evaluate its status with respect to its potential as a migration barrier. The percolation dam is a collapsed and abandoned structure occurring in the active channel of Putah Creek near the city of Winters California. The Department has determined that the percolation dam inhibits the migration of salmonids, both adults and juveniles, within Putah Creek due to obscure flows through the collapsed dam and due to the accumulation of debris against the dam.

The Department, in general, supports the removal of non-natural in-stream structures when these structures may impede salmonid migration, especially if these structures serve no biological utility. Removal of the percolation dam, as proposed by LPCCC will compliment many of the restoration projects already completed by the LPCCC. If you have any questions or need further assistance, please contact Mr. James J. Navicky at (916) 358-2926.

Sincerely,

Kent Smith  
Acting Assistant Regional Manager

*Conserving California's Wildlife Since 1870*

## **Appendix B**

### **Property Ownership**

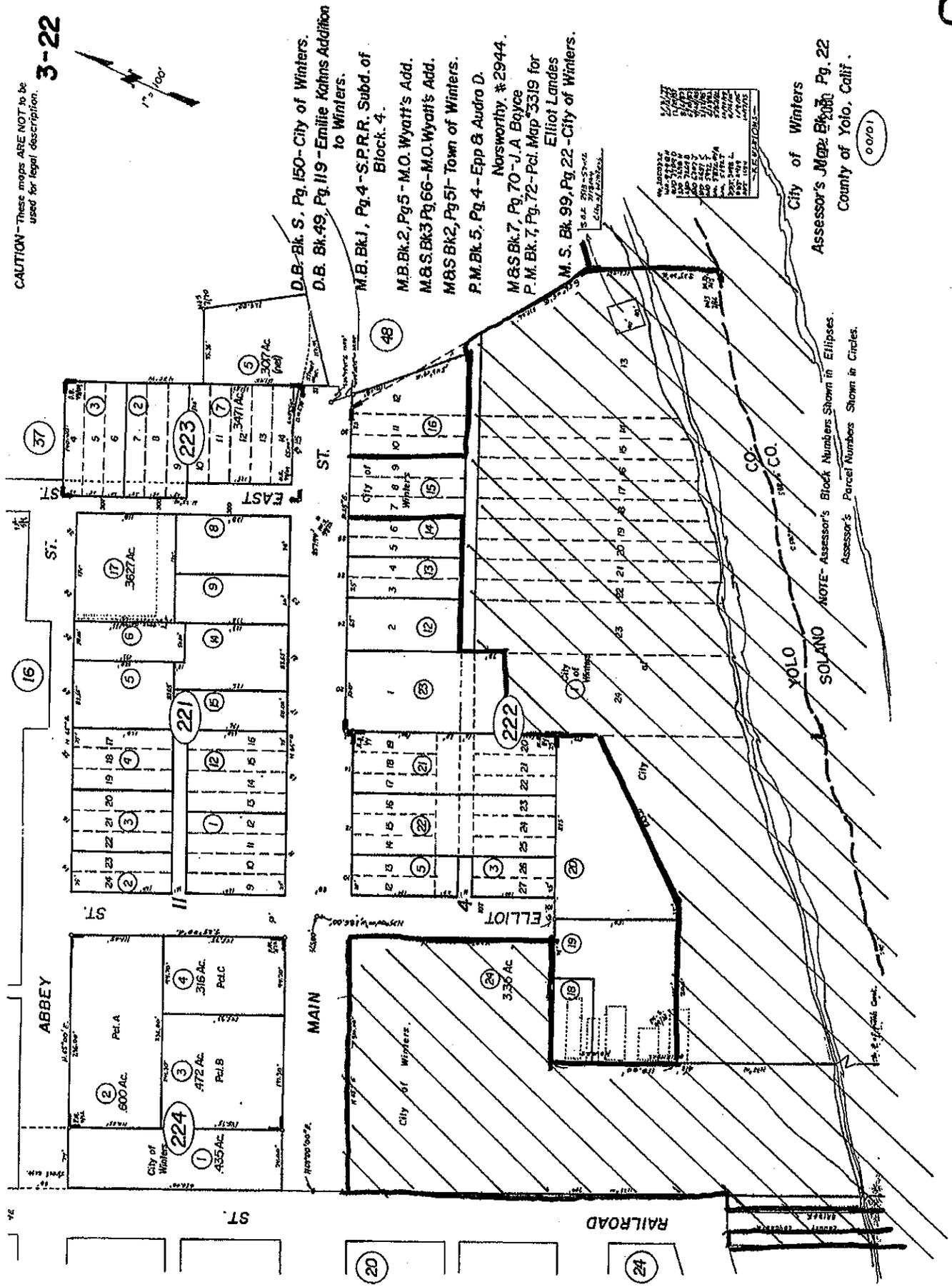
Private Ownership of the property within the banks of Putah Creek adds another layer of complexity to the ultimate park design. At the time of the 2007 Master Plan's adoption, approximate limits of the City's ownership of the creek were the top of the north bank-from the car bridge to the end of the Creekside subdivision line that ends at Wild Rose Lane (with the exception of three parcels- behind Creekside Apartments 32 E. Main St., 104 and 106 Caselli Ct). On the south bank- top of the south bank-from the car bridge to Johnson Road.

The remaining property to the east was owned by Solano County and private individuals. The land south of Putah Creek Road was also privately owned. In addition, the Yolo County and Solano County boundary is the centerline of the creek.

The 2007 Master Plan documents a wide range of improvements for Putah Creek based on a long-term community vision. The vision encompasses both City owned and privately owned property, but makes no assumptions with regard to the timing of improvements on privately owned property. The Master Plan was adopted with the clear understanding that the City will need to negotiate with the property owners before any improvements can be made. No work will be done in privately owned land without the land owner's consent. As adjacent properties come forward for development, development agreements will be negotiated that may include provisions that support the park's master plan concepts.

CAUTION—These maps ARE NOT to be used for legal description.

3-22



D.B. Bk. S. Pg. 150 - City of Winters.  
 D.B. Bk. 49, Pg. 119 - Emilie Kahns Addition to Winters.  
 M.B. Bk. 1, Pg. 4 - S.P.R.R. Subd. of Block 4.  
 M.B. Bk. 2, Pg. 5 - M.O. Wyatt's Add.  
 M.B. S. Bk. 3, Pg. 66 - M.O. Wyatt's Add.  
 M.B. S. Bk. 2, Pg. 51 - Town of Winters.  
 P.M. Bk. 5, Pg. 4 - Epp & Andro D. Norsworthy. # 2944.  
 M.B. S. Bk. 7, Pg. 70 - J.A. Boyce  
 P.M. Bk. 7, Pg. 72 - Pcl. Map 3319 for Elliot Landes  
 M. S. Bk. 99, Pg. 22 - City of Winters.

City of Winters  
 Assessor's Map: Bk. 20, Pg. 22  
 County of Yolo, Calif.

00/01

NOTE - Assessor's Block Numbers Shown in Ellipses.  
 Assessor's Parcel Numbers Shown in Circles.

YOLO CO.  
 SOLANO CO.

RAILROAD

16

ST.

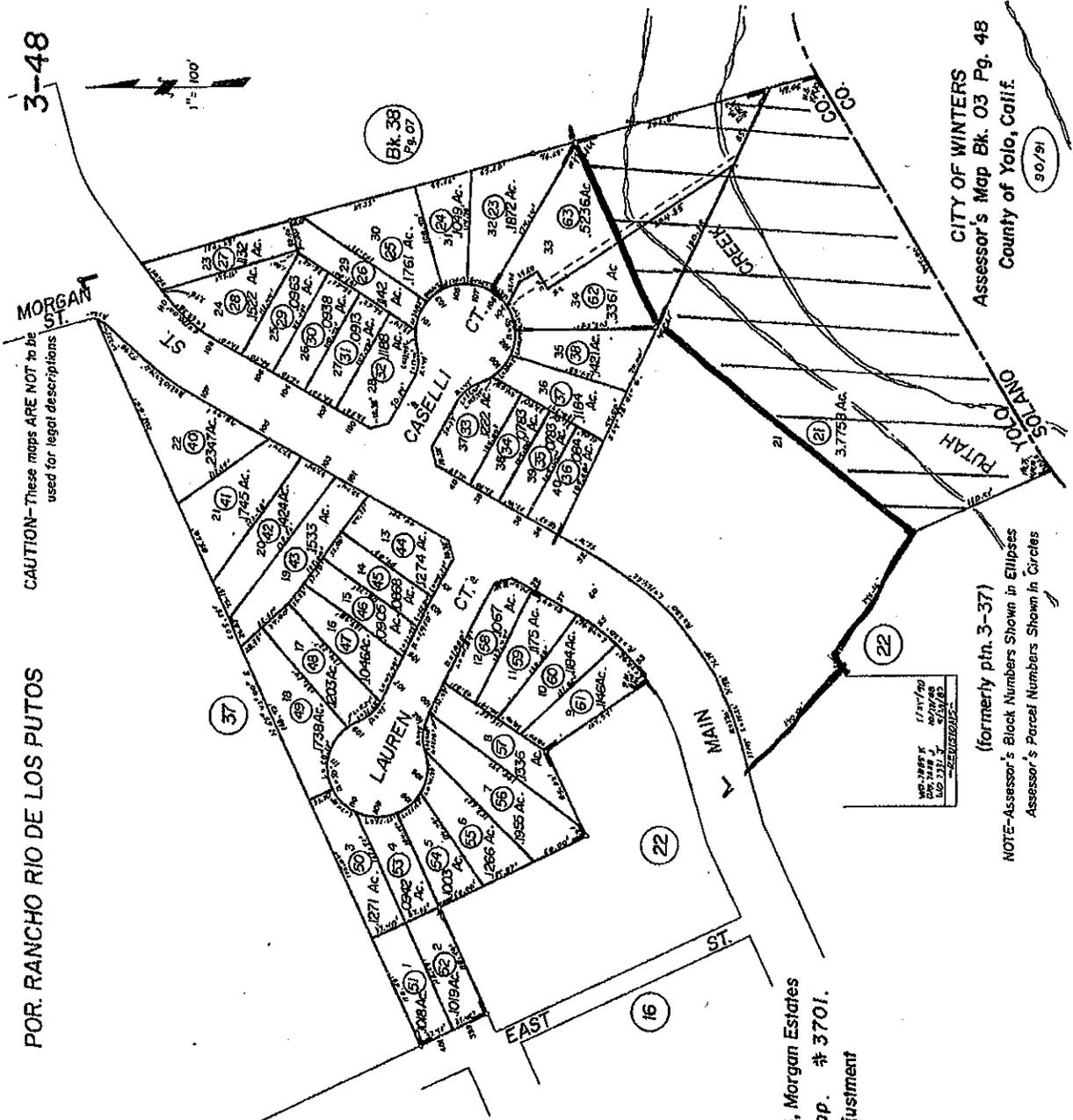
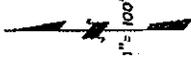
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24

POR. RANCHO RIO DE LOS PUTOS

CAUTION-These maps ARE NOT to be used for legal descriptions

3-48



Bk. 38 Pg. 07

NO. 1885 K 1137/40  
S. 1/4 Sec. 18 T. 11 N. R. 12 E.  
-MERCED COUNTY-

M. Bk. 15, Pg. 9, 10 - Tract No. 3575, Morgan Estates  
P. M. Bk. 9, Pg. 30, 31 - Parcel Map. # 3701.  
M. & S. Bk. 12, Pg. 69 - Lot Line Adjustment

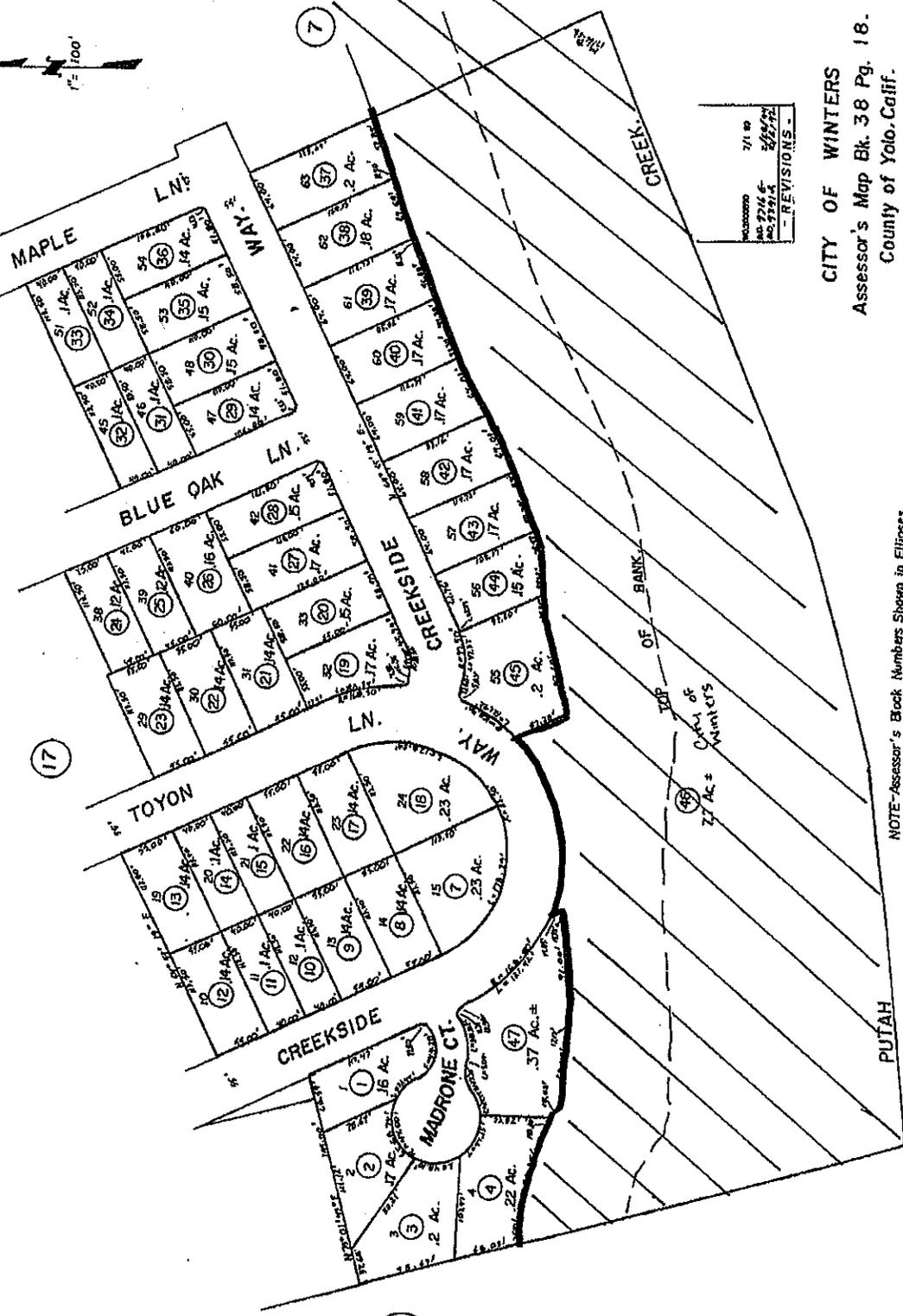
CITY OF WINTERS  
Assessor's Map Bk. 03 Pg. 48  
County of Yolo, Calif. 90/91

(formerly ptn. 3-37)  
NOTE-Assessor's Block Numbers Shown in Ellipses  
Assessor's Parcel Numbers Shown in Circles

POR. RANCHO RIO DE LOS PUTOS, T.8N., R.1W. M.D.B. & M.

38-18

CAUTION - These maps ARE NOT to be used for legal descriptions.



REVISIONS	DATE
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CITY OF WINTERS  
Assessor's Map Bk. 38 Pg. 18.  
County of Yolo, Calif.

00/01

JUL 2 2000

NOTE-Assessor's Block Numbers Shown in Ellipses.  
Assessor's Parcel Numbers Shown in Circles.  
(formerly per 38-07)

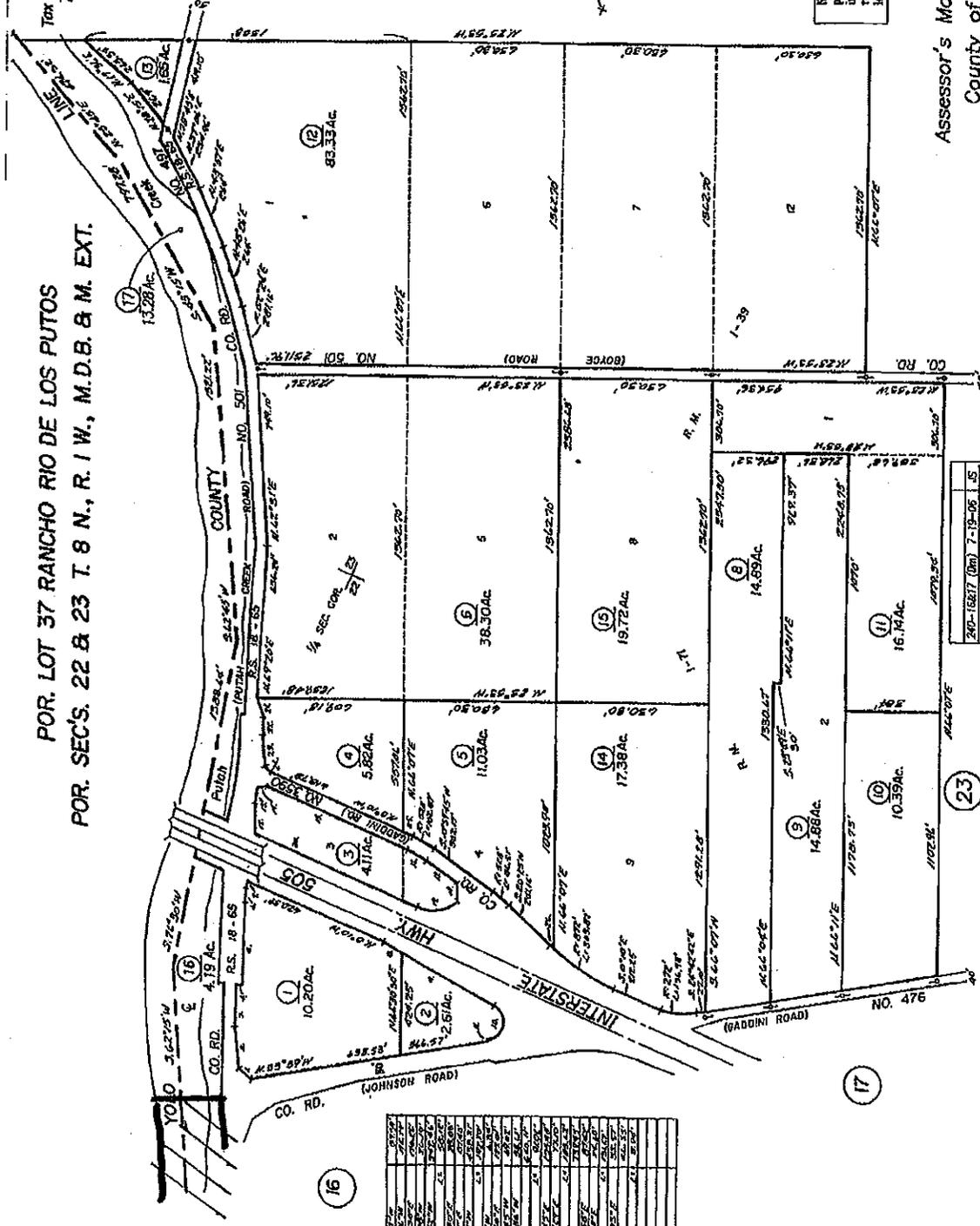
M.B.Bk.17, Pg.66-68 - Putah Creek Hamlet 7/1/00 4069.

Bk 3  
Pg. 37-48

3

Tax Area Code 77002 103-24

POR. LOT 37 RANCHO RIO DE LOS PUTOS  
 POR. SEC'S. 22 & 23 T. 8 N., R. 1 W., M.D.B. & M. EXT.



NOTE: This map is for assessment purposes only and is not for the intent of interpreting legal boundary rights, zoning regulations and/or legality of land division laws.

Assessor's Map Bk. 103 Pg. 24  
 County of Solano, Calif.

NOTE: Assessor's Block Numbers Shown in Ellipses  
 Assessor's Parcel Numbers Shown in Circles  
 Copyright © 1968 Solano County Assessor, Sacramento, At night Essex, CA

REVISION	DATE	BY
340-16017 (RM)	7-19-06	IS
340-14415	4-20-05	RO
335-18-06	11-28-03	SS
330-13-06	11-28-03	SS
330-13-06	2-28-02	DEP

E. Wolfskill Tract, R. M. Bk. 1 Pg. 39 & 60  
 Wolfskill 1000 Acre Tract, R. M. Bk. 1 Pg. 71

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3	5.82	...
4	11.03	...
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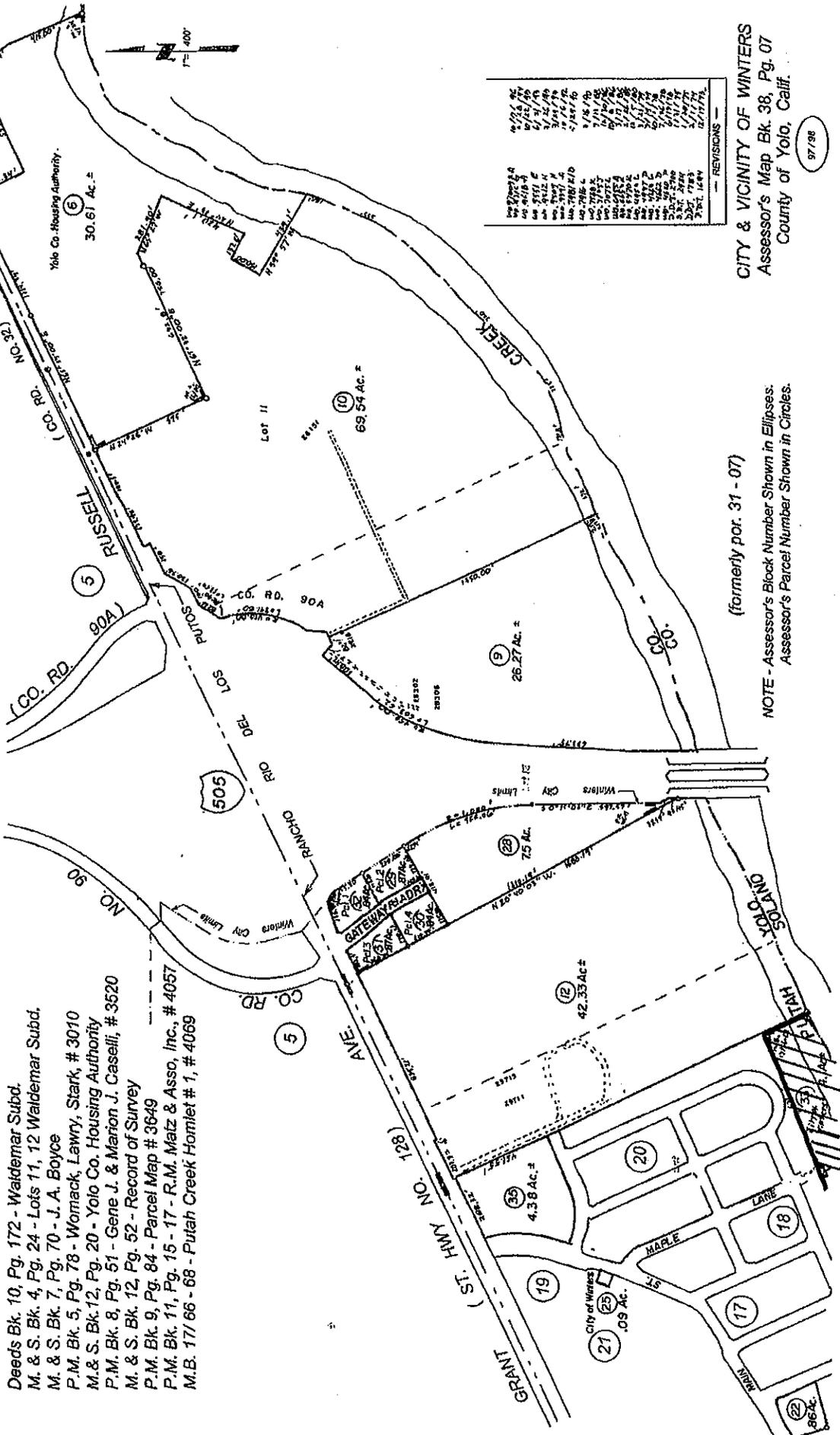
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**POR. OF RANCHO RIO DEL LOS PUTOS  
LOTS 11, 12, 13 WALDEMARS SUBD. T. 8N., R. 1W., M.D.B. & M.**

CAUTION - These Maps ARE NOT to be used for legal descriptions.

38 - 07

- Deeds Bk. 10, Pg. 172 - Waldemar Subd.
- M. & S. Bk. 4, Pg. 24 - Lots 11, 12 Waldemar Subd.
- M. & S. Bk. 7, Pg. 70 - J. A. Boyce
- P.M. Bk. 5, Pg. 78 - Womack, Lawry, Stark, # 3010
- M. & S. Bk. 12, Pg. 20 - Yolo Co. Housing Authority
- P.M. Bk. 8, Pg. 51 - Gene J. & Marion J. Caselli, # 3520
- M. & S. Bk. 12, Pg. 52 - Record of Survey
- P.M. Bk. 9, Pg. 84 - Parcel Map # 3649
- P.M. Bk. 11, Pg. 15 - 17 - R.M. Matz & Asso, Inc., # 4057
- M.B. 171/86 - 68 - Putah Creek Homlet # 1, # 4069



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99	1/11/95	REVISIONS
100	2/11/95	REVISIONS

CITY & VICINITY OF WINTERS  
Assessor's Map Bk. 38, Pg. 07  
County of Yolo, Calif.

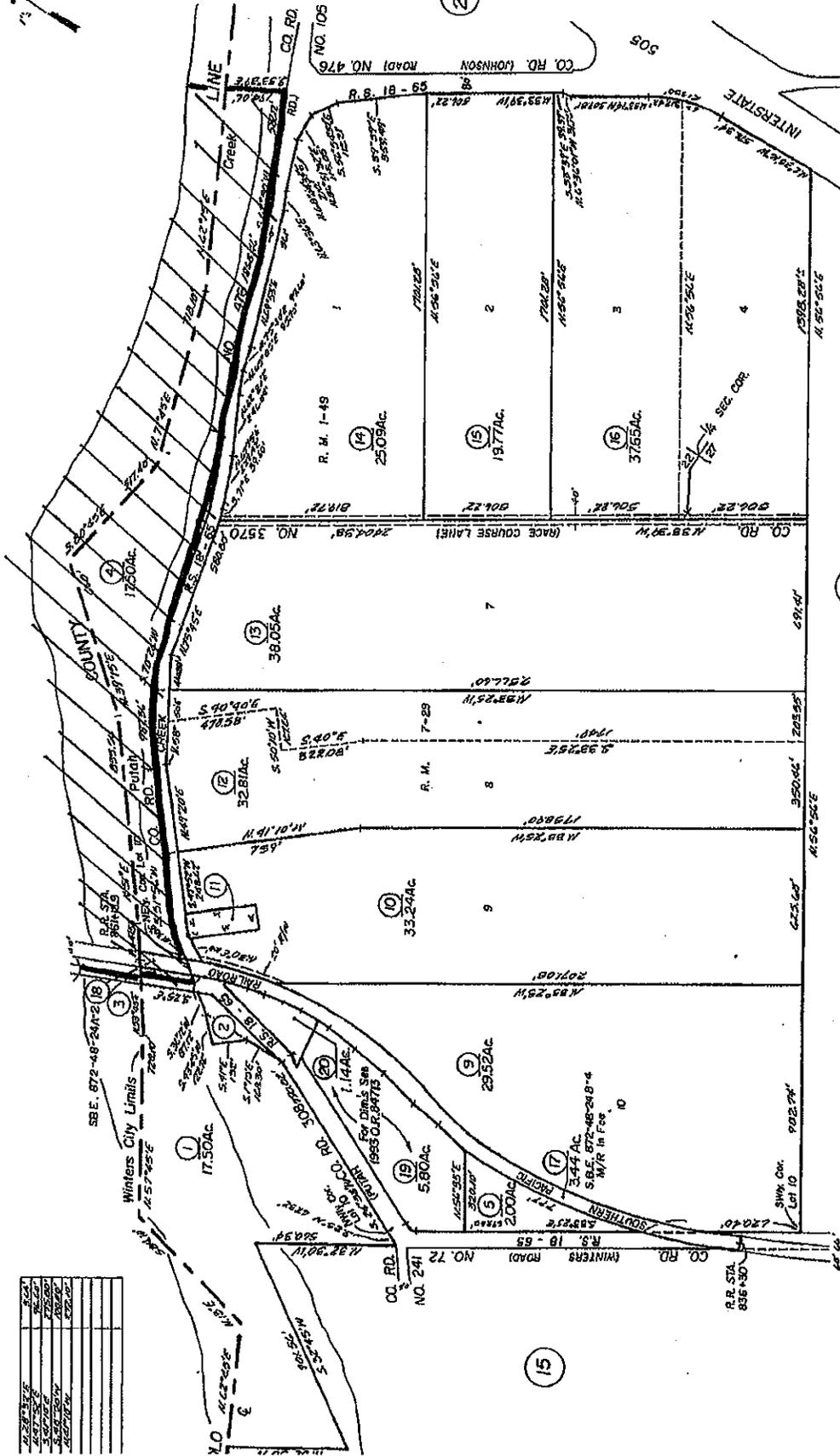
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(formerly por. 31 - 07)  
NOTE - Assessor's Block Number Shown in Ellipses.  
Assessor's Parcel Number Shown in Circles.

103-16

Tax Area Code  
77002

POR. LOT 37 RANCHO RIO DE LOS PUTOS  
POR. SEC'S 22, 27 & 28, T. 8 N., R. 1 W., M.D.B. & M. EXT.



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17	3.44	
18	17.50	

17

NO.	ACRES	DATE
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6	5.80	
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18	17.50	

Wm. Baker Tract, R. M. Bk. 1 Pg. 49  
County Road No. 476, R. M. Bk. 2 Pg. 71  
Heirs of M. J. Baker, R. M. Bk. 7 Pg. 29

Assessor's Map Bk. 103 Pg. 16  
County of Salano, Calif.

NOTE - Assessor's Block Numbers Shown in Ellipses  
Assessor's Parcel Numbers Shown in Circles

9495

7

## **Appendix C**

### **2007 Master Plan Graphics**



## PUTAH CREEK "FLATS"

THIS IS THE INDIEST PORTION OF THE CREEK BED, BY EXPANDING ON THE EXISTING CONDITIONS THIS 4 ACRE AREA IS LARGE ENOUGH FOR RECREATIONAL AND EDUCATIONAL. THOSE WHO WANT TO EXPERIENCE THE CREEK, FAMILIES, COMMUNITY EVENTS, SCHOOL TRIPS THE

## FAMILY RECREATION AREA

- NICE LOWER TERRACE
- PICNIC TABLES
- ACCESSIBLE TRAILS
- FISHING SPOTS
- ROCK CROSSINGS
- CRAYFISH
- OPEN VIEWING ACCESS TO THE WATER
- 40 PARKING SPACES
- SIGNAGE AND MAP
- DOGS POOP STATIONS
- TRASH CANS
- SMART-POTTY
- LIMITED PARKING ALONG PUTAH CREEK ROAD

## OUTDOOR CLASSROOM

- RESERVABLE ENTERTAINING AREA FOR OUTDOOR STUDIES
- ALL EDUCATION AREAS ARE ACCESSIBLE
- PICNIC TABLES
- RANGER STYLE SEATING AREA
- TRAILS
- SIGNAGE

## HISTORY AND LITERATURE

- CREEK HISTORY
- WINTERS HISTORY
- NATIVE AMERICAN
- EMIGRATION
- EMIGRANTS
- AGRICULTURE
- POETRY

## SCIENCE

- RIPARIAN HABITAT
- CREEK BIOGEOGEOLOGY
- PLANT VEGETATION
- FISH HABITAT
- CRITTERS
- SOIL

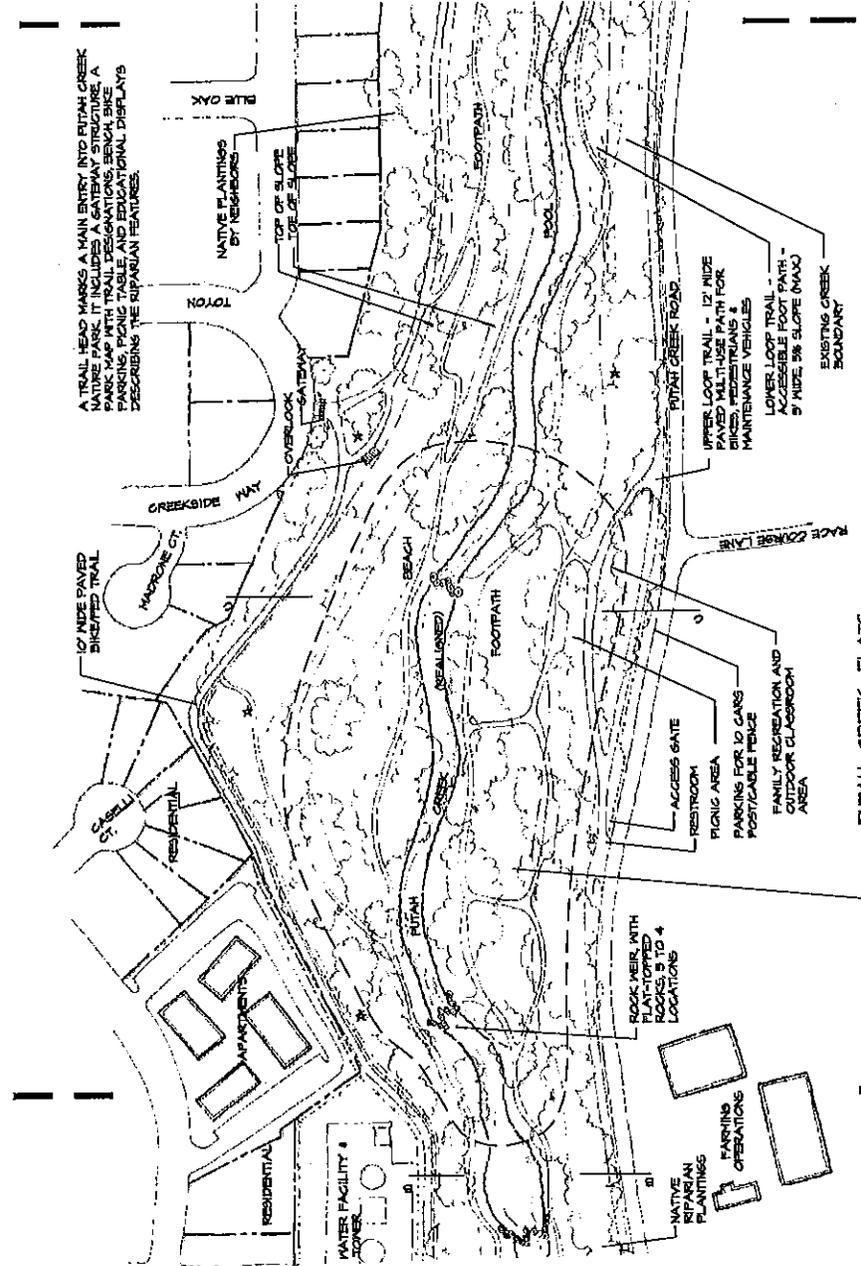
## ART

- NATURE NOTES
- LOCAL MATERIALS FROM THE CREEK
- COLORS AND DYES
- LANDSCAPES
- PATTERNS

MATCHLINE - SEE SHEET 3



SHEET 2 OF 3  
OCTOBER 2007



## PUTAH CREEK FLATS

THIS AREA PROVIDES THE BEST OPPORTUNITY FOR THE PUBLIC TO EXPERIENCE A RIPIARIAN NATURE PARK. IT INCLUDES ACCESSIBLE WALKING TRAILS, ACCESS TO THE WATER, CRAYFISH, AND FISHING SPOTS. THE TRAILS, WALKING, CRAYFISH, AND FISHING SPOTS ARE PLACED ACROSS THE CREEK TO AERATE THE WATER, GENERATE DEEPER POOLS AND PROVIDE SPOTS FOR FOOT CROSSINGS IN LOW WATER.

MATCHLINE - SEE SHEET 1

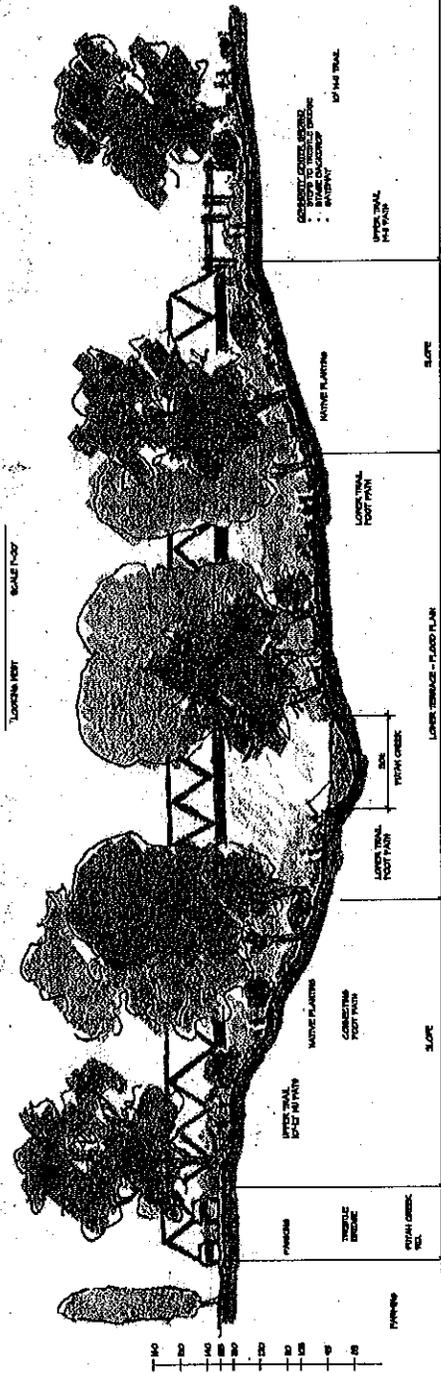
# PUTAH CREEK NATURE PARK - DRAFT MASTER PLAN

CITY OF WINTERS

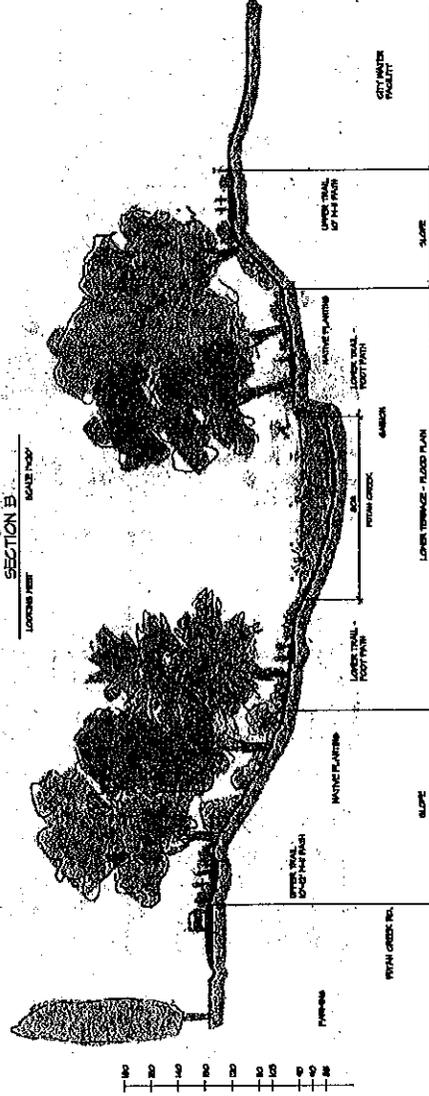




SECTION A



SECTION B



OCTOBER 2007

CITY OF WINTERS

PUTAH CREEK NATURE PARK MASTER PLAN

CROSS SECTIONS 'A' & 'B'

City of Winters, CA  
 2000 Putah Creek Blvd. W. Box 5000  
 Winters, CA 95986  
 530.838.5200 Fax: 530.838.5201





## **Appendix D**

### **Workshops**

**Putah Creek Nature Park Master Plan**  
**Workshop #1**  
Saturday, March 10, 2007

This is a summary list of the comments recorded during the 1<sup>st</sup> Workshop.

**GOALS:**

- Improve recreational value
- Improve access to the creek
- Improve safety
- Ecological sustainability
- Educational resource
- Contribute to economic vitality

**OPPORTUNITIES:**

- Rope swing/recreational value/beach area
- Modify to improve safety and family friendliness
- Reduce erosion
- Riparian corridor
- Create/maintain public access
- Create natural bridge
- Better access and flat areas
- Maintain current depth
- Improve water quality
- Keep stream in natural state
- Future benefits
- Skim the scum
- Improve fish and fishing (trout and salmon)
- Creekside parking/vehicular access
- Improve walking trails/connectivity
- Art walk
- Interpretive signs
- Restore native vegetation
- Neighborhood input/public participation
- Community-based decisions
- Modifications to flow/plan
- Pulse flows in winter
- Lifeguard staff
- Control off-road vehicle access
- Modify natural channel width
- Removal of invasive weeds
- Make information available on city website
- Dogs/facilities
- Gateway to creek
- Increase diversity of habitat
- Trash and recycling
- Public school access/use

- Removal of obstructions to gravel
- Police presence
- Public awareness with monthly newsletter (water bill)
- Identify safety concerns/issues

### **ISSUES/CONCERNS:**

- Cost
- Management plan
- Public access
- Water quality/spillage
- Beaver dams
- Rustic charm
- Impacts of privately owned sections
- Flooding
- Environmental impacts
- Sentimental value
- No vehicular access
- Police presence/patrolling
- Increase water flows
- Improve what we have
- Risk of unknown consequences
- Altering water flow
- Recreational value
- Restoration vs. recreation
- Focus on Winters
- Keep stream in natural state
- Keep dam and modify to improve safety and family friendliness
- Damage to existing vegetation/clear-cutting
- Tree removal
- Fishery analysis
- Spraying
- Canyon Creek Resort upstream effects
- Steep banks
- Adherence to CEQA process
- Liability concerns
- Hang-out place
- Scum
- Future impacts
- Swimming hole
- Percolation dam
- Inappropriate uses
- Coordinated efforts
- Lack of communication/understanding/ notification
- Maintenance plan
- Teenage input needs to be heard
- Native vs. non-native approach – look at specific plant

**Putah Creek Nature Park Master Plan**  
**Workshop #2**  
Saturday, May 24, 2007

The following is a summary of the park issue and elements the public recorded on large maps of the park. The comments have been organized under general topics.

**Creek Features**

Provide family picnic and beach areas for a balanced use  
Weirs to crossable by foot  
Use weir to create Lake Winters [again]  
Paddle boats  
Swimming in the creek  
Why change the creek bed?  
How is it being changed?  
Locate beaches away from 505 & pollution spills  
Add new percolation dam  
Eastern beach [near I-505] too remote, invites wild parties  
[www.littlerock.org](http://www.littlerock.org)

**Habitat**

Creek restoration to promote salmon and other fish habitat  
New plan to support fish and wildlife resources  
No further pollution in the creek [sewage spills]  
Clean the existing sand  
More native vegetation and screening [to replace lost vegetation]

**Safety**

Regular police patrol on bike and/or foot  
Docents on busy days for eyes/safety  
Solar powered lights on bike path  
No light pollution  
Non-invasive lights-out by 10 pm  
No lights

**Circulation**

Put pathways as far from houses and apartments as possible  
Have pathways less than 10 ft. wide  
Unpaved paths are okay  
Extend main path to county housing  
Hard and soft paths  
Safe bike route  
Put a path on intermediate terrace  
Use pervious surface for path [no asphalt]  
Connected loop trails – upper and lower  
Connect apartment complex to the trail

### **Putah Creek Road**

Parking needed

Post & chain fence to prevent parking on private property and on-ramp to 505 Vacaville

Expand Putah Creek Rd. for bikes and parking

### **Site Amenities**

Art Walk locations

Metal sculpture for Art Walk

Sculpture gardens (kids)

Play garden

Science Center

Picnic areas

Living fences instead of walls-prevent graffiti

Dog poop stations with biodegradable bags, replenished by the city

### **City Facilities and Maintenance**

Structures design style to be classic, rustic, natural look and materials-to blend with

Winters' small town character and ambiance

Phasing Plan needed

Phased construction possible with grants

Does City have money to keep parks clean and weeds mowed?

Prevent stormwater run-off from impervious surfaces into the creek

Remove cell tower

Relocate pumping plant and use area for restroom/community building, parking lot

## **Appendix E**

**2007 Cost Opinion**

**PUTAH CREEK NATURE PARK, WINTERS**

**LANDSCAPE ARCHITECT'S OPINION OF PROBABLE CONSTRUCTION COSTS**

Purpose: Project Budgeting

Based on the Draft Master Plan dated October 2007

Last Revised: October 10, 2007

**DRAFT**

The line items and associated unit costs are to be used for estimating costs for discrete portions for work. The unit cost may vary up or down, based on the project location and difficulty or restrictions in installation.

Item	Description	Qty	Units	Unit Cost	Total-Materials & Labor
<b>Site Preparation and Grading - Unit costs unknown, too many variables</b>					
1	Clearing and Grubbing				\$ -
2	Misc. Demolition and removals				\$ -
3	Clearing & Removals				\$ -
<b>Site Mobilization &amp; Demolition Sub-Total:</b>					<b>\$ -</b>
<b>Grading &amp; Drainage - Unit costs unknown, too many variables</b>					
4	Rough Grading				\$ -
5	Finish Grading				\$ -
6	Imported Soil				\$ -
7	Erosion Control				\$ -
8	Drainage				\$ -
<b>Grading &amp; Drainage Sub-Total:</b>					<b>\$ -</b>
<b>Creek Rechannelization: Costs dependent on grant application requirements - Unit cost unknown, too many variables</b>					
9	Demolition		LF		\$ -
10	Excavation		LS		\$ -
11	De-watering		LF		\$ -
12	Grading		LF		\$ -
13	Gabions		LF		\$ -
14	Revetments		LF		\$ -
15	Rock Weirs		LS		\$ -
16	Revegetation		LF		\$ -
<b>Creek Rechannelization Sub-Total:</b>					<b>\$ -</b>
<b>Site Utilities - Some unit costs unknown, too many variables</b>					
17	Sewer		LF		\$ -
18	Domestic Water Service w/ meter, backflow preventor at City Water well site		EA		\$ -
19	Domestic water line- 1"		LF		\$ -
20	Electrical connection		LS		\$ -
21	Pedestrian path lights, 120' on center, Community Center area only		EA	\$ 3,000	\$ -
<b>Site Utilities Sub-Total:</b>					<b>\$ -</b>
<b>Paving</b>					
22	AC paving - parking at City Wwater site	4,800	SF	\$ 6	\$ 27,800
23	AC paving - parking along Putah Creek Road	11,200	SF	\$ 6	\$ 67,200
24	Trails-Soil with resin binder - 10' wide (upper loop trail north)	62,500	SF	\$ 7	\$ 437,500
25	Trails-Soil with resin binder - 12' wide (upper loop trail south)	62,500	SF	\$ 7	\$ 437,500
26	Concrete paving (at Community Center)	1200	SF	\$ 7	\$ 8,400
27	Concrete steps and handrails at Trestle Bridge connection	1	LS	\$ 10,000	\$ 10,000
28	Accessible Trail Mat (removable)	1	EA	\$ 1,000	\$ 1,000
29	Bladed trails (first spring)	14000	LF	\$ 1	\$ 7,000
<b>Paving Sub-Total:</b>					<b>\$ 996,200</b>
All	Trails-Decomposed Granite (upper loop trail-north)		SF	\$ 2.50	\$ -
<b>Site Amenities</b>					
30	Seat Wall - at grassy area	300	SF	\$ 20	\$ 6,000
31	Accessible Drinking Fountain	1	EA	\$ 4,000	\$ 4,000
32	Picnic table	6	EA	\$ 1,200	\$ 7,200
33	Trash Receptacle	10	EA	\$ 800	\$ 8,000
34	Restroom Structure (Pre-fabricated)	1	EA	\$ 80,000	\$ 80,000
35	Restroom Enclosure for portable toilet	1	EA	\$ 30,000	\$ 30,000
36	Overlook	3	EA	\$ 5,000	\$ 15,000
37	Stage Arbor-Backdrop	1	LS	\$ 5,000	\$ 5,000
38	Kiosk / Informational Board	6	EA	\$ 800	\$ 4,800
39	Signage - map, wayfinding, educational	10	EA	\$ 500	\$ 5,000
40	Park Sign	4	EA	\$ 1,000	\$ 4,000
41	Boulders for seating (not part of rip-rap, weirs)	10	EA	\$ 150	\$ 1,500
42	Prefabricated bench	6	EA	\$ 1,200	\$ 7,200
43	Log bench	10	EA	\$ 300	\$ 3,000
44	Gateway	4	EA	\$ 5,000	\$ 20,000
45	Flagpole	1	EA	\$ 1,000	\$ 1,000
46	Fencing - post and cable	4300	LF	\$ 10	\$ 43,000
47	Retaining wall at City Wwater plant, Restroom	900	SF	\$ 40	\$ 36,000
48	New fencing at Apartments and City Wwater plant	720	LF	\$ 20	\$ 14,400
<b>Site Amenities Sub-Total:</b>					<b>\$ 280,700</b>



## **Appendix F**

### **WPCC Vegetation Management Plan**



**VEGETATION MANAGEMENT PLAN**

Prepared by:

**Winters Putah Creek Committee**

Adopted December 18, 2007

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## 1 Purpose of this Document

This plan describes general procedures to be used for managing vegetation on public lands bordering Putah Creek between the Railroad Avenue Bridge and Interstate 505, as shown in Figure 1<sup>1</sup>. This land area, referred to as the Winters Putah Creek Nature Park, totals about 40 acres, about 20 percent of which is open water.

In 2006, the Lower Putah Creek Coordinating Committee held a series of public meetings in Winters to review data collected for the Watershed Management Action Plan and identify priority sites for restoration. The community gave the Nature Park top priority for watershed restoration. This Vegetation Management Plan is part of a comprehensive effort to replace invasive weeds with native vegetation throughout 30 miles of Lower Putah Creek and tributaries. The plan will become a part of the updated Putah Creek Master Plan that is scheduled for adoption in 2007, and will be updated periodically as needed. A historical background of the formation of Winters Putah Creek Park and restoration activities is provided in Appendix A.



**Figure 1: Extent of Winters Putah Creek Nature Park**

With the removal of star thistle, the establishment of paths, and other improvements, the Putah Creek Nature Park has become a significant asset to the community that is enjoyed by many. This plan has the objective of facilitating continued improvements to enhance recreational uses and restore habitat, including replacement of invasive plants with native species and removal of plants that inhibit access to the creek. This plan also recognizes the importance of minimizing disruption of existing recreational uses during the restoration process, and the need to balance habitat restoration with recreational needs.

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<sup>1</sup> Some of the inscribed land in Figure 1 is under private ownership.

## 2 Current Plant Species

### 2.1 Natives<sup>2</sup>

The upper north bank is populated by native trees including, valley oak (*Quercus lobata*), and buckeye (*Aesculus californica*). Sycamore (*Platanus racemosa*), white alder (*Alnus rhombifolia*), cottonwood (*Populus fremontii*), Oregon Ash (*Fraxinus latifolia*), and willow (*Salix* sp.) grow within the creek channel. Many of these trees have reached a considerable height and host woodpeckers, hawks, egrets, herons, and other desirable birds.

Of perennial native shrubs not planted by volunteer efforts within the past ten years, elderberry (*Sambucus mexicana*) and wild rose (*Rosa californica*) are the most prevalent. Poison oak (*Rhus diversiloba*) is also present on the lower terraces, and California grape (*Vitis californica*) is common along the steeper creek banks.

Except for some naturally occurring annuals such as miner's lettuce (*Montia perfoliata*) and sparsely occurring lupines (*Lupinus* sp.), the population of annuals is dominated by non-native annual grasses and dicotyledonous weeds.

### 2.2 Invasives

Of the 32 acres of land between the Railroad Avenue bridge to the west and Interstate 505 to the east, approximately twenty-five percent is covered by one or more of 12 priority invasive weeds: arundo, black locust, catalpa, domestic almond, English ivy, eucalyptus, fig, Himalayan blackberry, pepper tree, tamarisk, tree-of-heaven and Virginia creeper. Throughout the riparian corridor of Lower Putah Creek there are 1,800 occurrences of 20 primary invasive weeds occupying approximately 10 percent of the land area. Winters Putah Creek Park has about the same number of weeds per acre as the average reach of Putah Creek and has the highest population of eucalyptus upstream of the Interstate 505 overpass. A complete listing of invasive weeds found in the creek channel and their distribution is provided in Chapter 7 of the *Lower Putah Creek Watershed Management Action Plan*.

### 2.3 Walnut (*Juglans Hindsii*)

Walnut trees may or may not be native and will be treated on a case by case basis.

## 3 Protection of Existing Vegetation

### 3.1 General Approach to Projects

To ensure the success of plant removal and restoration projects, work plans will be carefully reviewed at the time funding opportunities are evaluated. The committee will work closely with funding proponents and grant administrators to craft grant concepts or applications that are protective of native vegetation and compliant with this Vegetation Management Plan and the wishes of the community. Grant administrators and/or City Staff will provide annual work plans for committee review and approval.

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<sup>2</sup> Appendix D of the *Lower Putah Creek Watershed Management Action Plan* provides a complete inventory of native and non-native plants in the Lower Putah Creek watershed.

### **3.2 Protection of Native Trees**

All native trees should be protected from damage during the removal of non-native vegetation, tree cutting, spraying, grading, or other restoration activities, though channel reshaping may require removal of some natives.

Existing native trees provide shade and greenery and help dissipate noise from Putah Creek Road. Some of these trees, particularly native walnut, are diseased and infected with mistletoe. Diseased native trees may be removed if deemed a physical hazard to humans, wildlife or park infrastructure or become an impediment to approved future park renovation projects. Following removal, replacement plantings should be done so that there is no net loss to effective tree canopy area when trees are at maturity. A watering system should be installed to assist their initial establishment. Trees that do not survive should be replaced within one year.

### **3.3 Elderberry Protection**

Elderberry shrubs (*Sambucus* sp.), prevalent along Putah Creek in Winters, are the sole host plant for the federally threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). The Conservation Guidelines for the Valley Elderberry Longhorn Beetle (revised 1999) were developed by the U.S. Fish and Wildlife Service to "...assist Federal agencies and non-federal project applicants needing incidental take authorization through a Section 7 consultation or a Section 10(a)(1)(B) permit in developing measures to avoid and minimize adverse effects on the valley elderberry longhorn beetle." In conducting restoration work, including trail cutting to access non-native plants, spraying or mechanical removal of invasives and creek grading, measures to protect elderberry plants shall follow these guidelines to the maximum extent possible, including replacement of plants that are removed during grading.

For specific projects that may involve removal of plants 1 inch or greater, the responsible agency will obtain a permit from the U.S. Fish and Wildlife Service, which provides project-specific directions and requirements for removal and replacement.

### **3.4 Protection of Vegetation While Spraying**

During 2004 over-spray of herbicides targeting star thistle resulted in damage to ornamentals, fruit trees, and grapes planted on residential properties along Creekside Way. In the spring of 2007 spraying to control invasive weeds unintentionally damaged non-target plants including elderberry, miners lettuce, wild rose, oak, and almond. Dennis Chambers, Yolo County Deputy Agricultural Commissioner, completed an investigation of the 2007 incident and suggested measures to reduce the risk of damage to non-native species, including:

- Timing herbicide applications when desirable species are dormant
- Directing spraying away from and shielding desirable plants
- Use of hand held application equipment

Follow-up recommendations by Putah Creek Stream Keeper Rich Marovich, are provided in Appendix B. Marovich stated the "use of Milestone® Herbicide within 20 feet of elderberries is suspended pending further studies to determine if it can safely be used in proximity to elderberries in the dormant season." Appendix B also provides information on how to manage risks of damage to non-target vegetation resulting from application of Garlon 4 herbicide.

This plan adopts the following measures to protect plants from future spray damage:

1. No spraying shall be conducted while any native deciduous plants are emerging from dormancy.
2. To protect native annuals such as miner's lettuce and other sensitive plants as well as non-target ornamentals and fruit trees, spraying should be limited to hand-held equipment such as backpack or ATV-mounted tanks. Broadcast spraying will be reviewed in advance on a case-by-case basis by the WPCC.
3. No herbicides shall be used that may damage dormant native species.
4. Treatment of individual stumps with herbicide may be conducted at any time of year provided precautions are taken to protect nearby elderberry and other non-target species.

### **3.5 Mowing**

Grasses and other vegetation can become fire hazards when dry, and city ordinances call for mowing to reduce this fire danger. Mowing can damage desirable plants such as small native shrubs, trees and deergrass that have been planted as part of the restoration effort. All such plants should be staked prior to mowing, and mower blades should be set high enough to avoid damage to creeping wild rye grass or irrigation systems. The WPCC will coordinate the placement of stakes with Winters Public Works.

## **4 Removal of Invasive Species**

### **4.1 Goals and Justification**

Invasive weeds by definition rapidly spread and colonize ever-larger portions of the landscape unless they are actively controlled. Uncontrolled populations degrade downstream areas by spreading seeds, roots and stems that start new infestations. At Winters Putah Creek Park, invasive weeds, especially blackberry and arundo prevent access to the water in many areas and severely limit recreational opportunities. They also provide concealment for encampments by homeless persons and impede the discovery and removal of solid waste.

Removal of invasive weeds with currently available resources is an essential first step toward restoration of habitat and recreational value. Weeds currently obstruct access for engineering surveys for future improvements. Weed control demonstrates readiness for future grant-funded improvement projects. The most competitive proposals for public funding to manage vegetation will combine geomorphic restoration with vegetation management because the results will be more permanent and sustainable.

### **4.2 Strategies**

Efficient weed management entails selective treatment of weeds with herbicides preceded or followed by mechanical removal. Some weeds may be left to decompose in place where access for mechanical removal is limited. In addition, logs salvaged from vegetation removal activities may be recycled along the creek to help stabilize constructed flood terraces.

Equipment access is essential for economical weed spraying and removal. Many sites in Winters Putah Creek Park have limited visibility and access due to dense undergrowth especially by blackberry thickets. Pioneering trails through these thickets is an essential

first step to assess, treat and remove weeds. Measures to protect elderberry shrubs and nesting birds will be implemented before trails are constructed. Specific treatment methods for invasives are listed at the following web site:

<http://tncweeds.ucdavis.edu/esadocs.html>.

#### **4.3 Timing and Schedule**

The timing of vegetation removal will depend upon the availability of resources, manpower, accessibility, equipment, and other factors. The season for weed control is largely limited to the winter months when native vegetation is dormant. This improves visibility and therefore worker safety and it also takes advantage of the selectivity of Roundup (glyphosate) herbicide against blackberry, arundo and eucalyptus because Roundup does not affect dormant vegetation. When weeds are intertwined with native vegetation (often the case with blackberry) then winter is the only season when blackberries can be treated without damage to native plants.

Many herbicides are also most effective in winter months when weeds are not actively growing. Treatment of weeds in spring and summer is often ineffective because the weeds are growing so fast that they dilute the herbicide with growth or the herbicide kills the top of the plant and leaves the roots alive to resprout (e.g. arundo). Roundup in particular works best in the fall and winter because it is slowly absorbed and translocated throughout the plant. Weeds treated with Roundup in the fall and winter take in the herbicide more thoroughly than at other times and control is much greater from any given application.

The season for effective weed control is often extremely limited. High rainfall and sustained high flows in Putah Creek have curtailed most weed control operations in 2002-2003, 2004-2005 and 2005-2006. Weed control with equipment is also limited by the bird nesting season (March through July) and by terms of grants that fund weed removal.

Control of herbaceous weeds such as milk thistle, yellow star thistle, mustards, and riggut brome should be timed to coincide with native grass restoration when final grade is established. Native grasses in particular require aggressive herbaceous weed control in the first year but then provide weed resistant landscapes and diminishing requirements for weed control over time.

Figure 2 outlines a general schedule for phased removal of Eucalyptus trees and other non-natives. The east half of the Nature Park extends from the Interstate 505 bridge to the Creekside Way access point. The next quarter extends from the Creekside Way access point to the percolation dam. The fourth quarter extends from the percolation dam to the Railroad Avenue Bridge.

#### **4.4 Species to be Removed**

Invasive plant species targeted for removal are listed in Appendix C, and a map showing the location of invasives is provided in Appendix D. Woody and shrubby weeds such as eucalyptus, tamarisk, tree-of-heaven and Himalayan blackberry are the highest priority for control and removal because they compete most vigorously with native vegetation and impede surveys for other improvements.

#### **4.5 Permissions**

Some of the land inscribed in Figure 1 is under private ownership. This includes the McClish property adjacent to Interstate 505 and the apartments west of Caselli Court.

Ownership of these properties extends to the center of the creek, and the City must either obtain permission for work to be done or acquire this property.

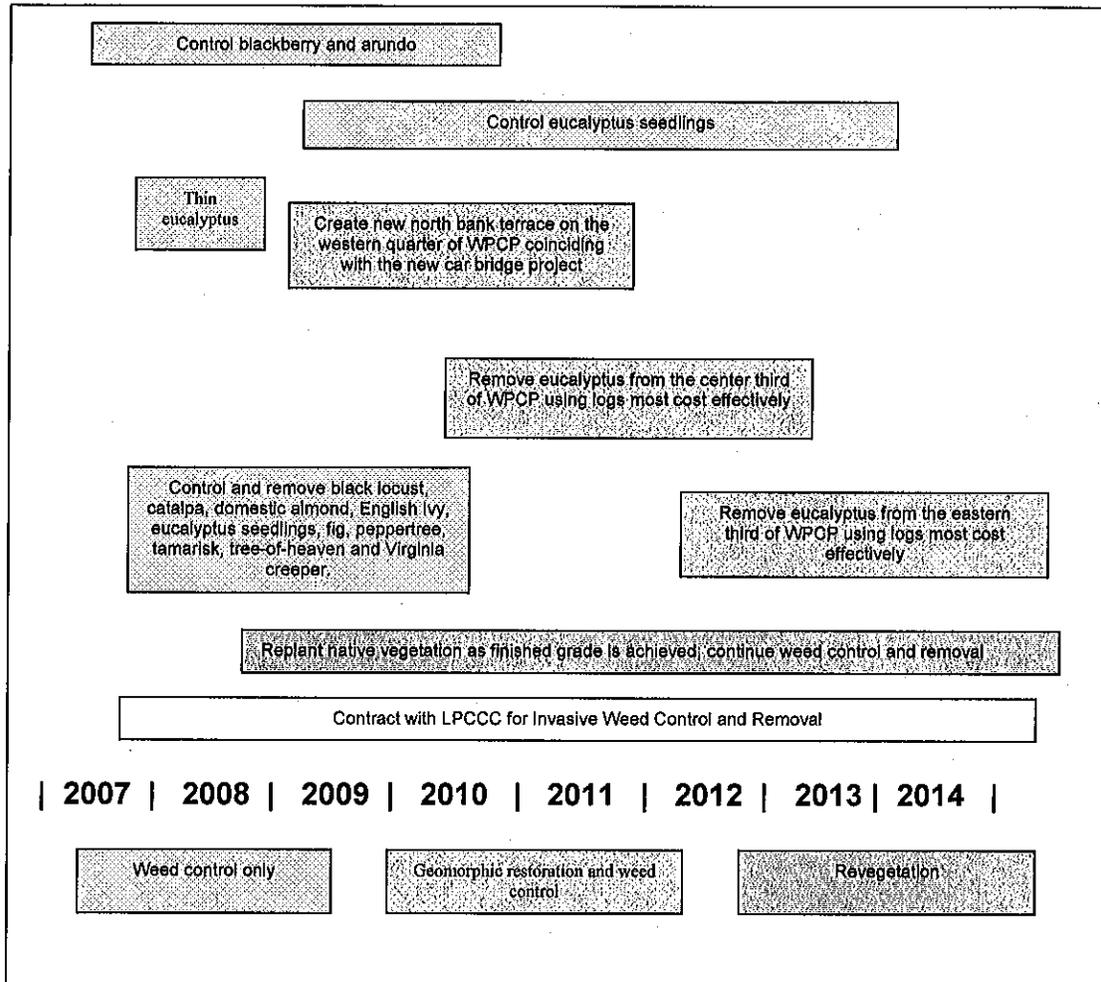


Figure 2: Proposed Schedule & Tasks for Vegetation Removal<sup>3</sup>

## 5 Re-Vegetation Plan

### 5.1 Goals

Re-planting with native plant species is needed to discourage the re-emergence of non-native plants and to create a sustainable natural environment that attracts wildlife populations and enhances enjoyment by Winters citizens and visitors. Re-vegetation should occur as soon as possible following removal of invasive species except for areas that may be disturbed by pending modifications to the creek channel.

<sup>3</sup> Pending approval for individual projects through all applicable state and federal regulations as described in Appendix E

At a neighborhood meeting of Winters citizens held on April 7, 2007, a commonly held concern was that removal of Eucalyptus trees and other vegetation would leave the area barren for many years. In some locations there are no native trees in the understory, and 20 years of growth or more will be required to establish trees that provide the amount of shade or habitat that Eucalyptus currently provide.

Vegetation removal proposals should include a schedule for replanting and a description of who will perform the work, how it will be maintained, and how it will be funded. A priority of the re-vegetation plan is to plant fast growing native trees immediately after removal of the Eucalyptus, and to nurture them with water and fertilizer to insure fast growth.

## **5.2 Strategy and Timing**

Sites that periodically flood will often passively restore to native vegetation when weeds are removed, especially where channel form and function has been restored. However, to insure that re-vegetation of desired species can occur soon after removal of invasives and other species, future grant applications should request balanced funding to provide for re-vegetation (including irrigation systems as needed) soon after removal. In locations that are several feet above the flow channel, irrigation systems should be provided at the time of replanting.

In areas that are below the median winter flows, cleared areas may be left to scour naturally down to functional elevations before replanting. Vegetation such as cottonwoods and willows that require access to groundwater should not be planted more than two or three feet above low flow channel elevation where they naturally occur on the creek.

Water is the most essential requirement of new plantings. Through at least the first season it is a matter of survival. Plants that are close to the low flow channel in distance and elevation may not require supplemental water, but all other plantings will require irrigation by drip, micro sprinkler, sprinkler or hand watering. If drip systems are used, they must be inspected regularly and repaired as necessary. Ten gallons per tree every ten days is sufficient on loam soils for newly planted small trees. More frequent watering may be needed on sandy or gravelly soils. In any case, the soil should be allowed to dry out somewhat between watering to encourage deep rooting, but not get so dry that new growth is interrupted.

Fertilizer is essential for rapid growth and high survival rates in most settings. Some soils are relatively fertile as evidenced by robust growth of weeds, while other sites are poor in nutrients. Soils should be tested before planting and fertilizers added according to test results. Fertilizers will increase growth of weeds as well as plantings, so weed control measures such as straw mulch will be implemented. The Creekside Way site was very low in phosphorous (2 ppm) and sulfur (1 ppm).

Because proposed geomorphic restoration (cut and fill operations) would disturb plantings, re-vegetation of areas that will be graded will not be undertaken until channel restoration work is completed. Grant proposals for geomorphic restoration will include sufficient funds for re-vegetation.

## **5.3 Species to be Re-Planted**

Species to be planted will be taken from lists gathered in nearby reference reaches. Some of the more common native plants include: alder, arroyo willow, black willow, boxelder,

California buckeye, buttonbush, cottonwood, coyote bush, creeping wild rye, elderberry, Goodings willow, miners lettuce, mugwort, mulefat, narrow-leaved milkweed, valley oak, Oregon ash, pipevine, sandbar willow, Santa Barbara sedge, showy milkweed, California sycamore, torrent sedge, toyon, yellow willow, western redbud and wild rose. Spacing depends on budget and size of the plant at maturity. Plants of the same species typically occur in clumps and plantings can mimic natural occurrences by placing plants in groupings of three or more of the same kind. Plants are grouped by zone according to elevation above the low flow channel where they naturally occur and according to natural associations and aspect. For example, Santa Barbara Sedge is almost always found on north facing slopes in the shade of oak trees. The area of each zone will be calculated and a percentage of each species will be estimated. Species composition may be adjusted based on availability.

## **6 Roles and Responsibilities**

### **6.1 City of Winters**

The City of Winters has served a key role in creek restoration by co-sponsoring grants, providing funds for trail improvements, coordinating with agencies, contracting for work, and facilitating the development of the Putah Creek Master Plan. City staff person Carol Scianna has played a valuable role in assisting the WPCC by distributing agendas, preparing minutes, scheduling meetings, and communicating information amongst the agencies involved in the management of the creek. As landowner, the City will be responsible for preparing CEQA documents for any major improvements that require them, such as removal of the percolation dam and modifications to the creek channel. The City will also be responsible for insuring compliance with state and federal regulations affecting restoration work (see Appendix E).

As landowner and Lead Agency, the City of Winters should be responsible for timely advanced public noticing of “destructive” activities on or near the Putah Creek Park. These activities would include at a minimum, mature tree removal, construction of access roads, channel modifications and herbicide spraying. A plan for communicating activities to Winters residents is provided in Appendix F.

### **6.2 Winters Putah Creek Committee**

The Winters Putah Creek Committee represents the voice of the Winters community on creek restoration and enhancement. The Committee is charged with developing this Vegetation Management Plan and will provide guidance and oversight for the implementation of the Plan. In addition, the committee is responsible for coordinating volunteer cleanups and plantings, assisting with public review of the Putah Creek Master Plan, and for advising the City Council on all other important matters pertaining to the management of the creek within Winters city limits, and the Nature Park.

As pointed out in the 1995 Putah Creek Master Plan, it is imperative that the community as a whole develop a strong sense of stewardship, and given limited resources and city manpower, volunteer participation will be necessary to insure the success and sustainability of restoration efforts. Diligent follow-up work is required to insure the survival of new plantings, and to prevent the return of undesirable plant species after their initial removal. The Committee will organize and coordinate volunteer groups to assist with plantings, installation and maintenance of irrigation systems, and weed control.

Committee volunteers can be trained and supervised in the use of herbicides to provide follow-through of restoration work by continuously controlling weeds.

### **6.3 Lower Putah Creek Coordinating Committee**

The LPCCC has proven to be very effective at winning grant funding and is encouraged to continue to apply for funding to carry out the goals of the Putah Creek Master Plan. The LPCCC may also manage restoration work, coordinate with the City to obtain necessary permits for work to be performed, and coordinate with other agencies as needed.

### **6.4 Putah Creek Council**

The Putah Creek Council can assist with fostering stewardship through educational and other programs such as Adopt-a-Flat, organizing community events such as cleanups and plantings, and providing input to the restoration process informed by their bio-monitoring activities, and coordinating with other groups such as the Putah Creek Discovery Corridor.

### **6.5 Public Participation**

The WPCC encourages public participation in decisions related to vegetation management and restoration, and welcomes comments for creek restoration project phases that will be reviewed at WPCC meetings. Opportunities for public input include monthly meetings of the WPCC, participation in public meetings that may be required under CEQA, and Winters City Council meetings. The LPCCC and other grant managers are encouraged to present plans for their work at WPCC meetings and/or at other public forums.

## **7 Restoration Resources and Project Management**

### **7.1 Status of Grants**

Appendix G provides a listing of the status of current and pending grants and proposed grant applications.

### **7.2 Proposal Review and Management of Grant Project Activities**

Grant proposals or proposal drafts shall be submitted to the Winters Putah Creek Committee for review prior to submission to the funding agencies, and the Committee will make recommendations to the City Council for approval (with or without modifications). The Committee will make every effort to avoid delay of proposal preparation so as to provide for timely submission. Grant project activities will be managed by the appropriate entity and monitored by the City of Winters with the assistance of the WPCC. A discussion of current and proposed grants is included in Appendix G.

## **8 Reference Documents**

In addition to appendices, the following documents may be referenced for further information:

- 1995 Conceptual Master Plan of the Winters Putah Creek Corridor

- Lower Putah Creek Watershed Management Action Plan
- Conservation Guidelines for the Valley Elderberry Longhorn Beetle (U.S. Fish and Wildlife Service)
- Putah Creek Terrestrial Wildlife Monitoring Program 2004 and 2005 Reports
- Integrated Regional Water Management Plan for the Sacramento Valley
- Minutes of Winters Putah Creek Committee meetings and documents submitted to the committee by citizens

## Appendix A: Historical Background

Systematic planning for removal of invasive weeds along Putah Creek began with a 1993 study by the U.S. Fish and Wildlife Service entitled: "Report to Congress: Reconnaissance Planning Report Fish and Wildlife Resource Management Options for Lower Putah Creek, California." The report included maps of eucalyptus, arundo, tamarisk and tree-of-heaven as the primary invasive weeds to control. The report also identified continuity of native vegetation as a limiting factor for wildlife migration. The U.S. Fish and Wildlife Service held public meetings in Winters as part of the study.

In 1994, the Winters Putah Creek Committee was formed as a subcommittee of "Team Winters", a group of citizens that assembled to develop a vision for revitalizing the downtown business area. The committee developed a Conceptual Master Plan for the creek, and after a series of public meetings, in 1995 the City of Winters adopted a master plan for the "Winters Putah Creek Nature Park" that addressed the need for community stewardship, removal of invasive weeds, and other issues<sup>4</sup>. In 1996 the Committee began removing debris, planting, and watering and the first grant money was secured. In 1998 committee chair Jessica Kilkenny turned over leadership to Jeanne Wirka, who obtained additional grant funds and organized several volunteer plantings, cleanups, and path building work parties.

With the assistance of Rich Marovich, who was hired in 2000 by the Lower Putah Creek Coordinating Committee as Streamkeeper, much was accomplished on the 100 foot easement between lots on Creekside Way and the top bank of Putah Creek. This easement was acquired by the City through a development agreement. Yellow star thistle and other weeds were replaced by creeping wild rye, coyote brush, oak, toyon, elderberry, and other native species. Replacement was supported by the installation of a drip irrigation system.

In 2001 and 2002, Solano County Department of Environmental Management held a series of public meetings in Winters that identified invasive weed control as a main objective for management of Lower Putah Creek. In 2002, the Lower Putah Creek Coordinating Committee commissioned a study by EDAW to update and expand the scope of invasive weed maps for a creek-wide Watershed Management Action Plan. The EDAW study found 113 occurrences of 12 primary invasive weeds at Winters Putah Creek Park.

By 2004 public access to the north side of the Putah Creek Nature Park was facilitated by a wide path built by community volunteers that extends from the Community Center to the sewage pumping station, and CDC crews directed by the City built access trails to the creek at points near Madrone Court and Wild Rose Lane. As a result of non-sponsored volunteer efforts and daily use, narrow paths on upper and lower terraces now extend all the way from the pumping station to the Wild Rose Lane access point. Improvements proposed by the Putah Creek Master Plan would make this path handicapped accessible.

With the departure of Wirka in 2005, restoration and improvement work came to a halt, save some voluntary plantings and maintenance by residents and vegetation removal by CDC crews. The Winters Putah Creek Committee was re-instituted by City Council Resolution 2006-46 in October 2006 to carry on the mission of enhancing the recreational and environmental value of City-owned lands along Putah Creek and Dry Creek.

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<sup>4</sup> Prepared by Cheryl Sullivan, this plan is currently under revision.

To improve access to the creek and clear paths for spraying invasives (particularly Himalayan blackberry and arundo), the City used CDC crews and LPCCC subcontractors to clear vegetation and cut smaller Eucalyptus trees on the north bank lower terrace of the Nature Park. Most of this work was completed in February and March of 2007.

In 2007 the LPCCC and Solano County Water Agency obtained California River Parkways (Prop. 50) and CalFed Watershed Program grants to remove the percolation dam and to conduct cleanup and restoration work on the south bank. Streamkeeper Rich Marovich has plans to apply for additional River Parkways funding for narrowing of the creek channel to create improved conditions for riparian plants and to improve the fishery.

## **APPENDIX B: Streamkeeper Recommendations for Herbicide Applications**

In April 2007, weed control operations with Milestone Herbicide (aminopyralid) caused unexpected damage to newly sprouted elderberry plants that are host plants for the federally listed Valley Elderberry Longhorn Beetle. Milestone Herbicide is highly effective for control of thistles and other broadleaved weeds and useful for establishment of native grasses; an essential component of weed resistant landscapes. Although the affected elderberries are expected to fully recover, use of Milestone Herbicide within 20 feet of elderberries is suspended pending further studies to determine if it can safely be used in proximity to elderberries in the dormant season. Beyond 20 feet and within 100 feet of elderberries, use of Milestone Herbicide is limited to directed sprays applied with diligence to avoid drift onto elderberry plants.

Roundup Herbicide (glyphosate) has been used safely in close proximity to elderberries in the season when elderberries are fully dormant to release elderberry plants and other dormant native vegetation from competition with Himalayan blackberries and is the preferred treatment in these circumstances. Roundup Herbicide is an effective and highly selective treatment for eucalyptus as a cut stump treatment in any season using diligence to avoid exposure to elderberries.

Garlon 4 Herbicide (triclopyr) is an effective and highly selective herbicide when applied as a basal bark (band of treatment around the base of the trunk) or cut stump treatment for woody weeds. Basal bark and cut stump treatments may be applied with a paint brush or hand-held sprayer under low pressure using directed sprays and diligence to avoid exposure to non-target vegetation. Use of Garlon 4 as a basal bark or foliar treatment is limited to days when high temperatures are not expected to exceed 90 degrees. This is to avoid injury to non-target vegetation from ethylene gas, a naturally occurring plant growth regulator that is produced in response to exposure to Garlon 4 Herbicide.

Ethylene gas causes the observed symptoms of herbicide effect (hooking, wilting, defoliation and die-back). High temperatures cause high release rates of ethylene gas from treated vegetation that can (and has) damaged non-target vegetation. High release rates of ethylene gas does not occur at lower temperatures. The most effective season for basal bark treatments is in late summer, fall and winter when weeds are not actively pushing top growth. Cut stump treatments may be made in any season.

All herbicide applications will be made under the supervision of a licensed pest control operator. The person responsible for supervision shall be aware of the conditions at the site of application and be available to direct and control the manner in which applications are made (per Section 6406 of Title 3, California Code of Regulations).

## APPENDIX C: Summary of Target Weeds

**Arundo** (*Arundo donax*): Arundo, also known as false bamboo was first introduced into the watershed in the 1960s in an effort to control bank erosion on the Pleasants Creek tributary and in the upper Putah Creek watershed. It has since spread throughout Lower Putah Creek. In WPCP there were 18 occurrences totaling just under half an acre in 2002. Some of these clumps have been treated with perhaps half of the original population remaining. Arundo is best controlled with full coverage sprays of Roundup in fall and winter months.

**Black Locust** (*Robinia pseudoacacia*): Black locust was introduced into the watershed by early settlers as barrier vegetation for its rapid spiny growth to 50 feet. It is widespread on Lower Putah Creek in clonal stands that sprout from root suckers and that also spread by seed. There are five occurrences in WPCP. Control is by basal bark treatment with 20 percent Garlon 4 (triclopyr) for stems under six inches or by "hack and squirt" treatment (injecting herbicide into frills cut with a machete or hatchet) in wood over six inches in diameter. There are five occurrences scattered throughout the park on both banks.

**Catalpa** (*Catalpa speciosa*): Catalpa is a short-lived coarse growing tree to 90 feet that has escaped from cultivation and spreads by seed. It has large leaves and is tolerant of heat. The infestation on Putah Creek is incipient with relatively few small trees that are widely scattered. There is one occurrence on the lower terrace of WPCP opposite the mid-point of the Creekside Way development.

**Domestic Almond** (*Prunus dulcis*): Domestic almond has escaped from commercial nut orchards and colonized lower Putah Creek especially at the top of the bank where its tolerance of summer drought has allowed it to compete with native vegetation, especially oaks and elderberry. It spreads by seed, aided by squirrels that hoard the seed in buried caches. The white blooms are conspicuous in February. There are 18 occurrence of domestic almond scattered throughout WPCP on the upper banks. It is controlled with Garlon by basal bark or frill treatment.

**English Ivy** (*Hedera helix*): English ivy is vine that has escaped from cultivation. It smothers the landscape with vines that climb up trees breaking down branches with the weight of the vines and eventually killing the host tree. It is a reservoir for the disease, bacterial leaf scorch (*Xylella fastidiosa*) that is harmful to oaks and other native vegetation. It is a notorious refuge for rats especially near creek channels. It is evergreen and can grow in deep shade. Birds eat and disperse the berries. There is one occurrence at WPCP below Madrone Court. Basal bark treatments with 20 percent Garlon Herbicide are effective. Repeat treatment is often required.

**Eucalyptus** (*Eucalyptus sp.*): Eucalyptus was introduced into California during the gold rush and probably arrived in Winters during that time. Eucalyptus was promoted for timber, fuel and windbreaks by early settlers. A 1911 postcard of WPCP has the unmistakable form of a mature eucalyptus tree in the background. The species that occurs most along Putah Creek is River Red Gum (*Eucalyptus camaldulensis*) and it is also the most widely distributed Eucalyptus in the United States and in its native Australia. Eucalyptus forms monoculture stands that are allelopathic (poisonous) to

other plants. At WPCP, beavers have attempted to use saplings even though they are not a preferred food source. This is a likely sign of starvation due to lack of other food sources. The Audubon Society considers Eucalyptus to be a sink for native birds, meaning that eucalyptus trees reduce native bird populations. In creek-wide surveys of birds by river mile, WPCP has the fewest species of birds of any reach from Putah Diversion Dam to Davis. Eucalyptus dominates the lower two-thirds of WPCP on the north bank and is the most upstream population of Eucalyptus on Lower Putah Creek, spreading seeds at high flows to all downstream sites. Eucalyptus grows very rapidly in creek channels where water is abundant and is known to grow up to 1.5 inches in diameter per year on Putah Creek. Due to its large size, it is the most costly weed to control on Putah Creek. Cost of removal is approximately \$1,000 per acre per inch of average trunk diameter up to 36 inches. Trees greater than 36 inches in diameter cost thousands of dollars each to remove. Equipment access also affects removal costs. Removal of logs is half the cost of the job, but it is often possible to find beneficial uses of the logs on site as revetments or fill. Due to the high cost of removal, eucalyptus work is best done in stages, creating access routes for equipment and removing the smaller trees so that equipment access routes are established and so that the larger trees can be surveyed and removal contractors can know exactly what the job entails. Seedlings up to three inches can be mowed. Saplings and branches up to twelve inches can be chipped. Larger wood can be used for restoration projects ideally on site or by hauling to other locations. Cut stumps and resprouts can be effectively treated with Roundup Herbicide, full strength as a cut stump treatment or as 5% solution sprayed onto the foliage. The south bank eucalyptus at WPCP was completely removed several years ago but a few seedlings apparently re-established since then. There are 17 occurrences of eucalyptus totaling 3.5 acres on the north bank of WPCP occurring mostly in monoculture stands.

**Fig (*Ficus carica*)** : Edible fig has escaped from cultivation and is rapidly spreading in the riparian corridor of Putah Creek, aided by fruit eating birds. On the Merced River fig has established large clonal populations from root suckers and is the most significant weed in that watershed. There are four occurrences of fig at WPCP, three on the north bank under the pedestrian crossing, the fourth on the north bank terrace below Creekside Way. There are hundreds of stems of fig on the north bank just upstream of WPCP.

**Foxtail barley (*Hordeum jubatum*)** is a native perennial grass that becomes weedy in neglected areas. It produces sharp awns (seeds) that lodge in the noses, ears, and feet of pets, and in shoes and socks. It is readily displaced by planting native grasses.

**Himalayan blackberry (*Rubus discolor*)** : Himalayan blackberry is an extremely invasive shrub that can dominate entire creek channels. It grows four to six feet high and is evergreen at our latitude. It is native to Eurasia. It spreads by underground stems, canes that touch ground or water and root, and by seeds, especially when eaten by birds. Himalayan blackberry impedes flood flows and traps sediment, elevating floodplains especially along the edge of the channel. Almost all of WPCP is lined with Himalayan blackberry along the edge of the channel. While Himalayan blackberry provides some food and shelter for birds, it also harbors rats that prey heavily on bird nests. Control of Himalayan blackberry requires high volumes of dilute (3%) Roundup Herbicide applied in winter months. This requires making trails through berry patches with an enclosed cab tractor. Himalayan blackberry will resprout in the trails because where tops are removed the plant does not absorb the herbicide. Dormant riparian vegetation is unaffected by

Roundup, even when the berries are mixed with dormant stems. Years with early and prolonged rainfall may greatly reduce or eliminate the season in which Himalayan blackberry can be selectively controlled. There are more than three acres of Himalayan blackberry at WPCP.

**Milk Thistle** (*Silybum marianum*.) is a winter annual herb native to the Mediterranean that grows to eight feet with white marbling along the veins of dark green leaves that are tipped with woody spines. Milk thistle is most prevalent along the top of banks in sunny areas. Heavy infestations limit the movement of people and wildlife and displace native vegetation. Dense stands produce up to 1.4 million viable seeds per acre. Milk thistle accumulates nitrate to levels that are toxic to grazing animals. Control is most effective in the seedling stage with herbicides that provide residual control of germinating seeds. Milestone (aminopyralid) is particularly effective. Thistle control should be coordinated with native grass restoration to establish weed resistant landscapes

**Pepper Tree** (*Schinus sp*): Pepper tree is an escaped ornamental that is extremely invasive in Florida and Hawaii and in local areas of California. It is so far uncommon on Putah Creek. There are eight occurrences in WPCP. It can be controlled in winter with basal bark or frill treatments with Garlon Herbicide.

**Ripgut brome** (*Bromus diandrus*): is a winter annual grass native to Europe that has spread throughout California occupying waste places and fields at low elevation. It is commonly associated with black walnut and apparently tolerates the natural herbicide (juglone) that suppresses most other undergrowth. Ripgut brome is injurious to pets and produces awns (seeds) that lodge in shoes and socks and are difficult to remove. Control of ripgut brome is best accomplished by displacement with native grasses, especially creeping wild rye after final grade is established. Creeping wild rye can also be established under black walnut. Control is established by seeding the area to native grasses and treating with Roundup Herbicide as a broadcast spray after the brome has germinated but before the native grass emerges.

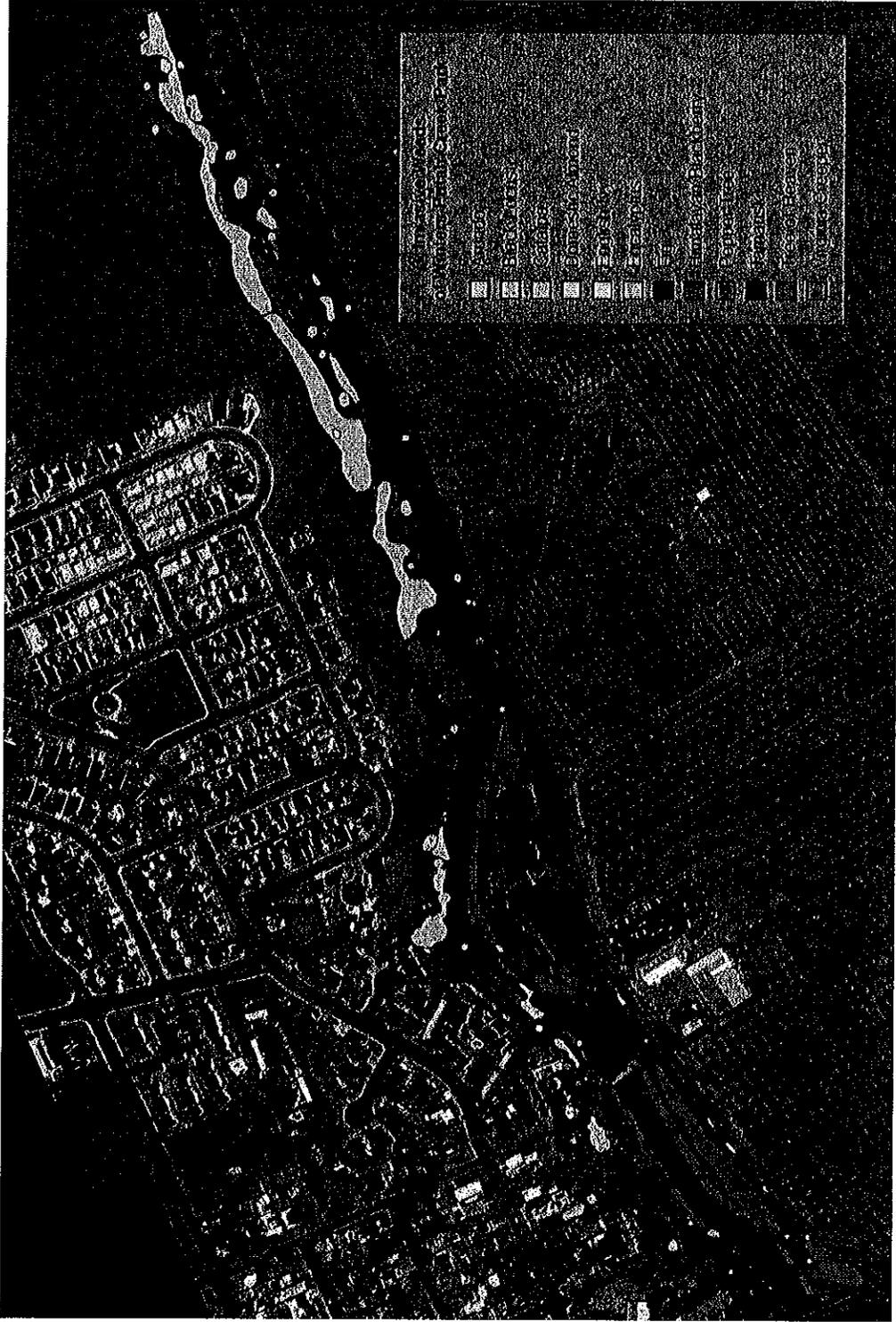
**Tamarisk** (*Tamarix sp.*): Tamarisk is a highly invasive coniferous shrub with magenta flowers in late March. Like arundo, it was introduced to control erosion but has taken over channels where it then induces erosion. It produces large quantities of small seeds and also spreads by root suckers. It extracts salts from the soil that inhibit other plants from growing in the vicinity. It can completely dominate creek channels. The infestation is noticeably increasing on Putah Creek. It also impedes flood flows, trapping sediment and forming mounds. There are six occurrences of Tamarisk in WPCP. It is controlled with basal bark or frill treatments with 20% Garlon 4 Herbicide or full coverage sprays of 2% Garlon 4 in fall and winter months. It can also be cut to the ground with an excavator-mounted mower and treated with 20% Garlon as a cut stump treatment.

**Tree-of-heaven** (*Ailanthus altissima*): Tree of Heaven was introduced by Chinese laborers at their camp sites. It is a tree to 40 feet that spreads by root suckers and seeds. It excludes all other vegetation and forms dense clumps. It grows mostly on the tops of banks and apparently does not tolerate flooding. There are 16 occurrences of Tree of Heaven totaling just under one-half acre in WPCP. Control is the same as for tamarisk.

**Virginia creeper (*Parthenocissus quinquefolia*):** Virginia creeper is an escaped ornamental deciduous vine that appears to have originated with a planting on Dry Creek that is rapidly spreading along Putah Creek in the Winters area. Birds spread the seed. There were two occurrences in 2002 in WPCP. Basal bark treatment with Garlon 4 Herbicide in the fall or winter is effective.

**Yellow star thistle (*Centaurea solstitialis*):** Native of Eurasia, yellow star thistle was introduced into California in the gold rush with the onset and spread of alfalfa production. It occurs in clearings with sunny exposures. Milestone Herbicide and Transline Herbicide (chlorypyralid) provide excellent control but resistance has been documented from repeat applications of Transline. Native grasses resist invasion by yellow star thistle once established and are the best strategy for long term control of yellow star thistle.

**APPENDIX D: Map of Existing Weeds**



## **APPENDIX E: Federal and State Laws Affecting Restoration Work**

### **FEDERAL ENDANGERED SPECIES ACT**

Pursuant to the federal ESA, the National Marine Fisheries Service (NMFS) has authority over projects that may result in take of federally listed anadromous fish species.

Similarly, the USFWS has authority over projects that may result in take of federally listed wildlife and plant species. Under the ESA, the definition of “take” is to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” USFWS has also interpreted the definition of “harm” to include significant habitat modification that could result in take. If a project has a likelihood that it would result in take of a federally listed species, either an incidental take permit, under Section 10(a) of the ESA, or a federal interagency consultation, under Section 7 of the ESA, is required.

### **CALIFORNIA ENDANGERED SPECIES ACT**

Pursuant to the California Endangered Species Act (CESA) and Section 2081 of the Fish and Game Code, a permit from DFG is required for projects that could result in the take of a statelisted Threatened or Endangered species. Under CESA, “take” is defined as an activity that would directly or indirectly kill an individual of a species, but the definition does not include “harm” or “harass,” as the federal act does. As a result, the threshold for a take under the CESA is higher than that under the ESA.

### **FEDERAL INVASIVE SPECIES LAWS AND REGULATIONS**

Executive Order 11312 – Invasive Species (February 3, 1999) directs all federal agencies to prevent and control introductions of invasive non-native species (i.e., pest plants, animals, or other organisms) in a cost-effective and environmentally sound manner to minimize their economic, ecological, and human health impacts. Executive Order 11312 established a national Invasive Species Council composed of federal agencies and departments and a supporting Invasive Species Advisory Committee made up of state, local, and private entities. The Invasive Species Council and Advisory Committee oversee and facilitate implementation of the Executive Order, including preparing a National Invasive Species Management Plan. A number of other federal laws pertain to noxious and invasive weeds, including the Non-indigenous Aquatic Nuisance Prevention and Control Act of 1990 as amended (16 U.S.C.

4701 et seq.); Lacey Act as amended (18 U.S.C. 42); Federal Plant Pest Act (7 U.S.C. 150aa et seq); Federal Noxious Weed Act of 1974 as amended by the Food, Agriculture, Conservation and Trade Act of 1990 (Section 1453 “Management of Undesirable Plants on Federal Lands;” U.S.C. 2801 et seq); and the Carlson-Fogey Act of 1968 (Public Law 90-583). The U.S. Department of Agriculture and other federal agencies maintain lists of pest plants of economic or ecological concern.

### **STATE INVASIVE SPECIES LAWS AND REGULATIONS**

A number of state laws and regulations pertain to preventing the spread of non-native invasive species (i.e., pest plants, animals, or other organisms). Section 403 of the California Food and Agricultural Code (FAC) directs the California Department of Agriculture (CDFA) to “prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds.”

FAC Section 5004 defines a noxious weed as follows: “Noxious weed means any species of plant that is, or is liable to be, troublesome, aggressive, intrusive, detrimental, or destructive to agriculture, silviculture, or important native species, and difficult to control or eradicate, which the director, by regulation, designates to be a noxious weed. In determining whether or not a species shall be designated a noxious weed for the purposes of protecting silviculture or important native plant species, the director shall not make that designation if the designation will be detrimental to agriculture.” The state-listed noxious weeds are indicated in Section 4500 of the CCR.

CDFA develops and enforces regulations created to protect California from the importation, cultivation, and spread of plant species that are deemed “noxious” by law. Plant species that have been designated as noxious weeds may be subject to various restrictions including the statutory provisions for weed-free areas, California Seed Law, and noxious weed management. Management or control activities taken against noxious weeds may both protect California’s agricultural industry and important native species.

### **CALIFORNIA PEST AND NOXIOUS WEED RATINGS**

State-listed pests, including noxious weeds, are rated A, B, C, D, or Q based on CDFA’s view of the statewide importance of the pest, the likelihood that eradication or control efforts would be successful, and the present distribution of the pest within the state. The ratings guide CDFA, county agricultural commissioners, and others regarding appropriate actions to take. “A” ranked pests are organisms of known economic importance and are subject to state enforced actions involving eradication, quarantine, containment, rejection, or other holding actions. “B” ranked pests are similar to “A” ranked pests, but actions taken to control them are at the discretion of the individual county agricultural commissioner. “B” ranked pests also includes organisms subject to state actions and eradication only when found in a nursery. “C” ranked pests include organisms subject to no state enforced action outside of nurseries except to retard spread. “C” ranked pests are controlled at the discretion of the county agricultural commissioners. “Q” ranked pests are organisms or disorders requiring temporary “A” action pending determination of a permanent rating. The organism is suspected to be of economic importance but its status is uncertain because of incomplete identification or inadequate information. “D” ranked organisms include parasites, predators, and organisms of little or no economic importance that require no action.

Eleven invasive weed species were recently determined by CDFA to present a serious threat and are in the process of being added to the list of noxious weed species. They include the following species located within the lower Putah Creek watershed: *Ailanthus altissima* (tree of heaven); *Arundo donax* (giant reed); *Cortaderia jubata* (jubata grass); and *Tamarisk chinensis*, *T. gallica*, *T. parviflora*, and *T. ramosissima* (salt cedar). Additional invasive weeds within the watershed are already designated as state noxious weeds. The status of invasive weeds within the watershed is provided in the Invasive Weeds section in Chapter 7, “Invasive Weeds.”

### **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

The California Environmental Quality Act (CEQA), encoded in Sections 21000 et seq of the Public Resources Code (PRC) with Guidelines for implementation codified in the California Code of Regulations (CCR), Title 14, Chapter 3, Sections 15000 et seq.,

requires state and local public agencies to identify the environmental impacts of proposed discretionary activities or projects, determine if the impacts will be significant, and identify alternatives and mitigation measures that will substantially reduce or eliminate significant impacts to the environment. State owned properties are subject to the provisions of Public Resources Code Section 5024 and 5024.5

Historical resources are considered part of the environment and a project that may cause a substantial adverse effect on the significance of a historical resource is a project that may have a significant effect on the environment. The definition of "historical resources" is contained in Section 15064.5 of the CEQA Guidelines.

This list is not meant to be a comprehensive and complete list of applicable environmental regulations.

## **APPENDIX F: Communication Plan**

### *Purpose of this Plan*

This plan is intended to:

- Keep Winters citizens apprised of restoration plans and progress
- Notify affected property owners of pending spraying, tree cutting, vegetation removal, and other large projects such as creek bed restructuring
- Notify citizens of planned cleanups, plantings, and other opportunities for volunteer activities

### *Responsibilities and Mechanisms*

To announce plans for restoration, proposed and successful grant applications, and other news of general interest:

- The LPCCC should update the City and the WPCC,
- The City and the WPCC should coordinate preparation of press releases

When there are major restoration efforts planned such as: tree or vegetation removal, and spraying:

- The City should coordinate schedules with LPCCC and notify both the WPCC and affected property owners.
- The City should provide press releases to the Express and City Newsletter (if possible) for activities that are scheduled more than four weeks in advance.

For shorter-schedule work such as spraying and minor vegetation removal the City will distribute handbills and use phone trees and email lists to inform affected property owners at least 48 hours in advance of work. Signs to be posted in affected areas along trails and at access points will be coordinated with applicator and public works staff.

For cleanups, plantings, and similar activities the WPCC will coordinate with the Putah Creek Council and issue press releases in the Express, City Newsletter, phone trees and to email lists one or more weeks in advance.

### *Development and Maintenance of Contact Information*

Contact information including emails will be solicited from all interested citizens attending WPCC meetings, cleanups and other sources. This contact information will include participant's preference for receiving information and notices and be used to distribute appropriate Putah Creek Nature Park project information to interested or affected parties. The WPCC will be responsible for maintaining the lists and conveying updates to the City. The LPCCC may be available to assist with these tasks.

## **APPENDIX G: Grant Opportunities**

### **Current Grants**

The City has grant funds remaining in the amount of \$19,900 to build trails, install signage, and construct a kiosk.

A \$1.2 million grant from the Wildlife Conservation Board that has been used for restoration work over the entire watershed expires in August 2007. Almost all of the weed removal on Putah Creek has been funded by this grant.

A California River Parkways grant in the amount of \$452,000 has been received that will fund removal of the percolation dam.

The Department of Water Resources (DWR) Urban Streams Restoration Program funded a grant in the amount of \$345,440 to restore the south bank of Putah Creek below the confluence with Dry Creek and other improvements on Dry Creek below Highway 128. An extension of this grant through May 2008 has been requested to allow installation of rock weirs and other bank-protection measures.

A proposal submitted under the Department of Water Resources CALFED Watershed program to follow-up on weed removal and other projects in the Dry Creek and Nature Park areas was approved in August 2007. The \$536,490 grant will enhance the continuity of wildlife migration corridors, deter unauthorized vehicle access, stabilize eroding banks, reduce sediment loading, deter illegal dumping and beautify the most visible reaches of Putah Creek and contiguous portions of the Dry Creek tributary by installing a 15-foot wide native vegetation hedgerow (removing weeds and infilling existing native vegetation) along three miles of south bank of Lower Putah Creek on the southern boundary of the City of Winters; and extend bank re-vegetation of Dry Creek on the southwestern boundary of Winters. The project will feature rock vanes installed by a geomorphologist, native vegetation hedgerow and oak woodland plantings on both banks.

### **Planned Grant Applications**

One more round of funding will be available through the California River Parkways program under Proposition 50. The LPCCC intends to submit a proposal for geomorphic restoration (re-design of the creek channel) under this program. A total statewide appropriation of \$20.5 million has been proposed for 2007-8.

If the DWR Urban Streams grant is not extended, a follow up grant application could be submitted in the fall of 2007.

The California Parks Department Off-Highway Vehicle (OHV) Program funds projects to prevent damage by unauthorized use of OHVs including a past grant for vehicle barriers and restoration of areas damaged by OHVs beneath Highway 505. A new grant request for approximately \$50,000 is proposed to extend existing vehicle barriers along Putah Creek Road and to provide for more robust vehicle barrier gates where needed.

The Cal/EPA Integrated Waste Management Board Farm and Ranch Cleanup Program has provided grants for removal of solid wastes from agricultural lands along Putah Creek. The City of Winters and LPCCC are proposing a new grant for cleanup of

agricultural lands on Dry Creek below Highway 128. IWMB is also interested in sponsoring spring creek cleanup grants much like the California Coastal Commission sponsors Coastal Cleanup Day each fall.

Solano County Water Agency has budgeted \$2 million for capital improvement projects throughout Lower Putah Creek in accordance with the Lower Putah Creek Watershed Management Action Plan.



**INITIAL STUDY  
and  
MITIGATED NEGATIVE DECLARATION**

**for  
Winters Putah Creek Nature Park /  
Floodplain Restoration and Recreational Access Project**

Prepared For and Independently Reviewed By:

**LEAD AGENCY:  
City of Winters  
318 First Street  
Winters, CA 95694**

Preparation Assistance By:

**Wallace-Kuhl & Associates, Inc.  
3251 Beacon Boulevard, Suite 300  
West Sacramento, CA 95691**

Lead Agency Contact:  
Ms. Kate Kelly  
Planning Manager  
City of Winters  
318 First Street  
Winters, California 95694

*Initial Study and Mitigated Negative Declaration*  
**WINTERS PUTAH CREEK NATURE PARK FLOODPLAIN RESTORATION  
AND RECREATIONAL ACCESS PROJECT**  
Winters, Yolo County, California

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Winters Putah Creek Park Percolation Dam Removal and Floodplain  
Restoration Project



## **ABBREVIATIONS AND ACRONYMS**

AAQS- ambient air quality standards  
AST- above ground storage tank  
BMP- best management practice  
CARB- California Air Resources Board  
CDC- California Department of Conservation  
CEQA- California Environmental Quality Act  
cfs- cubic feet per second  
CNDDDB- California Natural Diversity Data Base  
CNEL- community noise equivalent level  
CNPS- California Native Plant Society  
CRA- California Resources Agency  
CRHR- California Register of Historic Resources  
CVRWQCB- Central Valley Regional Water Quality Control Board  
dBA- A-weighted decibels  
CDFG- California Department of Fish and Game  
Diesel PM- Particulate exhaust emissions from diesel-fueled engines  
DTSC- Division of Toxic Substances Control  
EIR- Environmental Impact Report  
CAEPA- California Environmental Protection Agency  
LIM- Land Inventory and Monitoring  
LPCCC- Lower Putah Creek Coordinating Committee  
NMFS- National Marine Fisheries Service  
NPL- National Priorities List  
NOAA- National Oceanic and Atmospheric Administration  
NO<sub>x</sub>- oxides of nitrogen  
NPDES- National Pollution Discharge Elimination System  
NRCS- Natural Resources Conservation Service  
PM<sub>10</sub>- particulate matter under 10 microns  
PM<sub>2.5</sub>- particulate matter of 2.5 micrometers or less  
RWQCB- California Regional Water Quality Control Board  
SMARA- Surface Mining and Reclamation Act of 1975  
SVAB- Sacramento Valley Air Basin  
SVOC- semi-volatile organic compound  
SCWA- Solano County Water Agency  
SWPPP- Stormwater Pollution Prevention Plan  
SWRCB- State Water Resources Control Board  
USACE- United States Army Corps of Engineers  
USEPA- United States Environmental Protection Agency

USFWS- United States Fish and Wildlife Service

UST- underground storage tank

VdB- vibration decibels

WEAP- Worker Environmental Awareness Program

YSAQMD- Yolo-Solano Air Quality Management District

## PROJECT INFORMATION

1. **Project title:** Winters Putah Creek Nature Park /  
Floodplain Restoration and Recreational Access Project
2. **Lead agency name and address:** City of Winters  
318 First Street  
Winters, CA 95694
3. **Contact person and phone number:** Kate Kelly, Planning Manager (530) 795-4910 x113
4. **Project location:** Putah Creek, south of the City of Winters between the Winters Car Bridge and Highway 505.
5. **Project sponsor's name and address:** Solano County Water Agency  
P.O. Box 349  
Elmira, CA 95625-0349
6. **General plan designation:** Open Space (Solano County; City of Winters)
7. **Zoning:** Open Space (Solano County; City of Winters)
8. **Description of project** (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.):  

The proposal is divided into two phases, based on the sequencing needed to accomplish the project efficiently. Phase I includes the establishment of a monitoring program; percolation dam removal; stream recontouring; and, in-channel structural improvements including weir construction, bank stabilization, and habitat enhancement. Phase II includes the development of recreational amenities.
9. **Surrounding land uses and setting** (Briefly describe the project's surroundings):  
Surrounding land use includes suburban and rural residential, orchard production, and other agricultural uses.
10. **Other public agencies whose approval is required** (e.g., permits, financing approval, or participation agreement.): Consultation may be required with Solano County and the City of Winters. A California Department of Fish and Game 1601 Lake and Streambed Alteration Agreement, State Water Resources Control Board Water Quality 401 Certification, and Army Corps of Engineers 404(d) permit will also be required. Informal consultation with U.S Fish and Wildlife Service and National Oceanic and Atmospheric Administration National Marine Fisheries Service for impact to federally listed species has already been initiated.

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is "Potentially Significant Impact" as indicated by the checklist on the following pages.

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Aesthetics                    | <input type="checkbox"/> Agricultural Resources             | <input type="checkbox"/> Air Quality  |
| <input type="checkbox"/> Biological Resources          | <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Geology/Soils  |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality            | <input type="checkbox"/> Land Use/Planning                                      |
| <input type="checkbox"/> Mineral Resources             | <input type="checkbox"/> Noise                              | <input type="checkbox"/> Population/Housing                                     |
| <input type="checkbox"/> Public Services               | <input type="checkbox"/> Recreation                         | <input type="checkbox"/> Transportation/Traffic                                 |
| <input type="checkbox"/> Utilities/Service Systems     | <input type="checkbox"/> Mandatory Findings of Significance | <input checked="" type="checkbox"/> None, with mitigation measures incorporated |

**DETERMINATION** (to be completed by lead agency):

On the basis of this initial evaluation, the following finding is made:

- The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- The proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION,

including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



For Kate Kelly

\_\_\_\_\_  
Signature (prepared by): Kate Kelly, Planning Manager  
City of Winters

April 3, 2008  
Date

**Mitigation Measure Compliance Review Agreement**

I, being the applicant for the described project, agree to the full implementation of the mitigation measure(s) outlined in this environmental document as Conditions of Approval of the project.

I understand that by agreeing to the mitigation measure(s) outlined in this document, all foreseeable "significant effects on the environment" should be reduced to a less-than-significant level as required by the California Environmental Quality Act and Guidelines (CEQA), thereby permitting the City of Winters to publicly notice and circulate the environmental document for my project.



\_\_\_\_\_  
Rich Marovich, Project Proponent  
(LPCC Streamkeeper)

April 3, 2008  
Date

## EVALUATION OF ENVIRONMENTAL IMPACTS

- 1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- 4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
  - a) Earlier Analysis Used. Identify and state where they are available for review.
  - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
  - c) Mitigation Measures. For effects that are "Less than Significant with Mitigation

Measures Incorporated," describe the mitigation measures, which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
  - a) the significance criteria or threshold, if any, used to evaluate each question and
  - b) the mitigation measure identified, if any, to reduce the impact to less than significance

## **BACKGROUND AND INTRODUCTION**

This Initial Study provides an environmental analysis pursuant to the California Environmental Quality Act (CEQA) of 1970, as amended, for the proposed update to the Winters Putah Creek Nature Park Master Plan and floodplain restoration and recreational access project (project or park).

The proposed project is intended to restore the Winters park along both side of Putah Creek to a more natural condition, one that is self-maintaining and supports native plant and animal species. A unique element of this restoration is that the restoration would allow better access to the park, and integrates the park in a community trail system. The Watershed Management Action Plan (EDAW, 2007a) ranks the park as “highest priority” for restoration throughout the creek.

The project approach is divided into two phases, based on the sequencing needed to accomplish the project efficiently. Phase I includes the percolation dam removal; stream recontouring and in-channel structural improvements including natural stone weir construction, bank stabilization; and, habitat enhancement including a vegetation management plan. Phase II includes the development of recreational amenities. Individual elements from within each phase may be implemented ahead or behind the overall phase to meet site-specific requirements, such as permitting.

The mitigation measures prescribed for environmental effects described in this Initial Study will be implemented in conjunction with the project, as required by CEQA. The mitigation measures will be incorporated into the project through project conditions of approval.

## **SITE DESCRIPTION**

The project encompasses Putah Creek and its riparian zone, starting at the car bridge on Railroad Avenue extending to the I-505 crossing to the east. It is bordered by rural Putah Creek Road to the south and urbanized town center to the north (Figure 1).

## **GENERAL HABITAT CHARACTERISTICS**

Vegetation communities were classified using Cheatham and Haller’s (1975) California vegetation and classification system and California Natural Diversity Database (CNDDDB)/Holland (1986), the recent revision of Cheatham and Haller by the CNDDDB.

Habitat identified onsite essentially fits each of the three topographic positions: Riverine (RIV), Valley Foothill Riparian (VRI), and Valley Oak Woodland (VOW). The Riverine habitat, as classified by Cheatham and Haller, is predominantly Streams (10.2). There is no classification by CNDDDB for Aquatic Habitats. The Valley Foothill Riparian habitat, as classified by Cheatham and Haller, is predominantly Central Valley Bottomland Woodland Forest (6.11) and as classified by CNDDDB, it is predominantly Great Valley Riparian Forest (61400). The Valley Oak Woodland, as classified by Cheatham and Haller, is predominantly Central Valley Bottomland Woodland (6.11) and as classified by CNDDDB, it is predominantly Great Valley-Valley Oak Riparian Forest (61430).

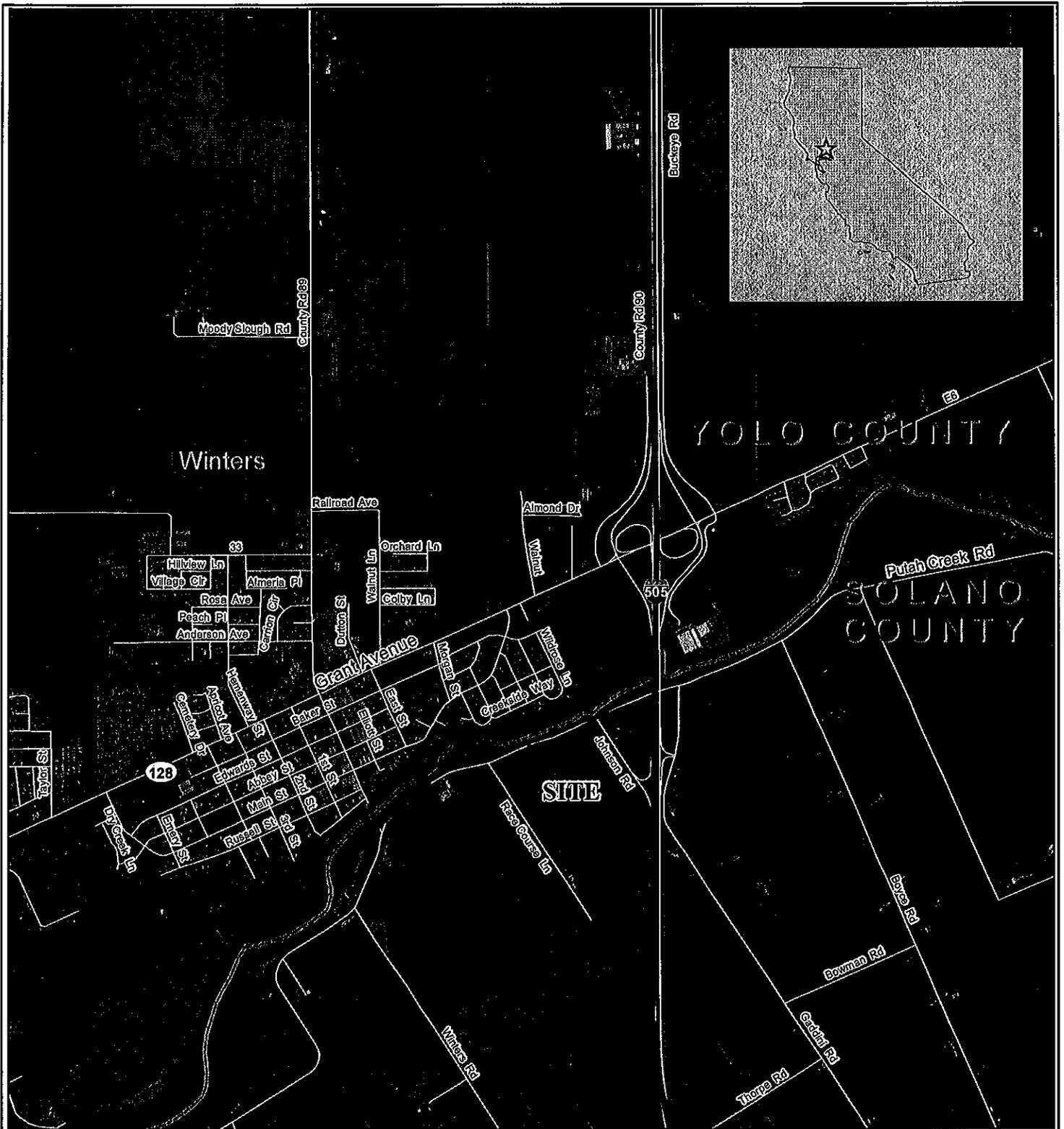
There are no specific restrictions or protection policies on the removal of or construction near oak trees in Solano county (Department of Environmental Management, 2003). The City of Winters General Plan Policy VI.C. 9-10 states that large, older and historically significant trees should not be removed unless they are diseased or represent an unavoidable obstacle to development. Development should be designed and constructed to avoid adverse impacts on such trees and the City shall encourage and support development projects and programs that enhance public appreciation and awareness of the natural environment (City of Winters, 1992). The Solano County Department of Environmental Management General Plan Resource Conservation Element states that development on slopes greater than 6% should avoid a loss of natural vegetation.

The project does not intend to develop the site in the traditional planning sense, and no long-term impact to native vegetation is expected. Care will be taken during this project to prevent disruption or loss of native vegetation.

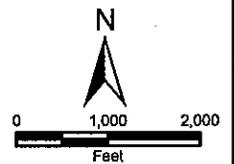
#### *Natural Communities*

The most common plant community in the lower Putah Creek riparian corridor is mixed riparian forest. The width and complexity of mixed riparian forest varies and is characterized by one or more well-developed canopy layers.

When present, the highest canopy layer is generally open and dominated by tall Fremont cottonwood (*Populus fremontii*) or *Eucalyptus* spp. trees. The next canopy layer, frequently the uppermost, is typically moderately dense and composed of tree species such as valley oak (*Quercus lobata*), Oregon ash (*Fraxinus latifolia*), Goodding's willow (*Salix gooddingii*), and box elder (*Acer negundo* var. *californica*).



Aerial photograph and street data provided By ESRI, 2007  
 Projection: California State Plane, Zone II



**VICINITY MAP**  
**WINTERS PUTAH CREEK NATURE PARK FLOODPLAIN RESTORATION AND RECREATIONAL ACCESS PROJECT**  
 Winters, California

<b>FIGURE 1</b>	
DRAWN BY	JG
CHECKED BY	LT
PROJECT MGR	ER
DATE	3/08
<b>WKA NO. 7607.01</b>	

In some areas of the creek, a sub-canopy layer consists of dense riparian scrub dominated by willow species including arroyo willow (*Salix lasiolepis*) and sandbar willow (*S. exigua*). A discontinuous shrub layer is generally present within the mixed riparian forest including species such as blue elderberry (*Sambucus mexicana*), buttonbush (*Cephalanthus occidentalis*), Himalayan blackberry (*Rubus discolor*), wild rose (*Rosa californica*), poison oak (*Toxicodendron diversilobum*), and wild grape (*Vitis californica*).

A ground layer, when present, ranges from sparse to densely vegetated and consists of grasses such as creeping wild rye (*Leymus triticoides*) and forbs such as mugwort (*Artemisia douglasiana*). Seedlings of some of the more shade-tolerant of the tree species mentioned above can also be found in the understory. One of the intents of this project is to improve the composition of native species.

#### *Wetlands and Other Waters*

The project lays predominately within the historic 100-year floodplain of Putah Creek (Figure 2).

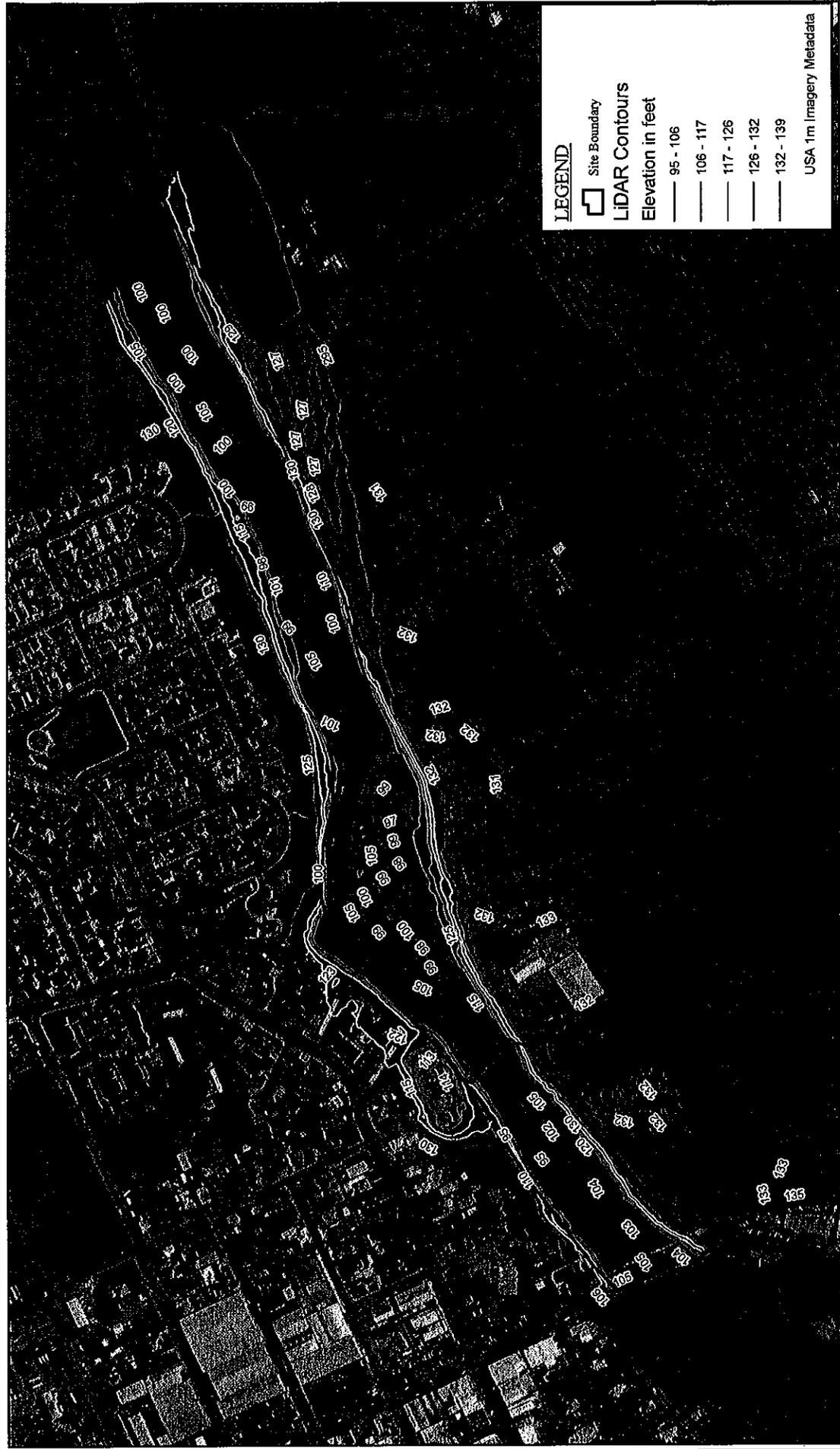
The site consists of riparian (riverine or river influenced) wetlands and open water. The riparian wetland includes seasonal and perennial wetlands along the creek channel and lower bank, instream wetlands that have formed on sand or gravel bars, and patches of emergent freshwater marsh. Riparian wetlands are dynamic, plant communities that are influenced by frequent flooding, scour, and creek water level fluctuations that occur on a seasonal and annual basis. Open water habitat includes the creek channel, and its associated side-channel ponds.

Putah Creek is considered to be waters of the United States and California, as it is a direct tributary to the Sacramento River. Approximately 14 acres of Putah Creek, or 1.45 river miles, will be restored and maintained as part of the proposed project.

Waters of the United States are defined as a navigable body of water, or tributary, however small (including adjacent wetlands), that is regulated by Section 404 of the Federal Clean Water Act or Section 10 of the Rivers and Harbors Act. Any project that involves working in navigable waters of the United States, including the discharge of dredged or fill material, must first obtain authorization from the United States Army Corps of Engineers (USACE), under Section 404 of the Clean Water Act.

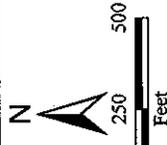
A State of California Water Quality Certification (Clean Water Act Section 401 permit) may be required by the Regional Water Quality Control Board (RWQCB) before other permits are issued, and will involve implementation of a stormwater pollution prevention plan. If a proposed

project will result in the alteration of streams or of other waters of California, the California Department of Fish and Game (CDFG) requires notification prior to commencement, and may require a Lake or Streambed Alteration Agreement (CDFG Code § 1600-1603, 5650F).



**LEGEND**

- Site Boundary
- LIDAR Contours
- Elevation in feet
  - 95 - 106
  - 106 - 117
  - 117 - 126
  - 126 - 132
  - 132 - 139
- USA 1m Imagery Metadata



LIDAR by Solano County Water Agency, 2007  
 June 2006 aerial photograph provided by ESRI, ArcGIS Online  
 Projection: NAD 83, California State Plane, Zone II

**EXISTING CHANNEL LOCATION AND ELEVATIONS**  
**WINTERS PUTAH CREEK NATURE PARK FLOODPLAIN**  
**RESTORATION AND RECREATIONAL ACCESS PROJECT**

Winters, California



<b>FIGURE</b>	<b>2</b>
DRAWN BY	JG
CHECKED BY	LT
PROJECT MGR	ER
DATE	3/08
<b>WKA NO. 7607.01</b>	

## PROJECT DESCRIPTION

The proposed project is divided into two phases, based on the sequencing needed to accomplish the project efficiently. Phase I includes the percolation dam removal; stream recontouring and in-channel structural improvements, including weir construction and bank stabilization; and, habitat enhancement based on a vegetation management plan. Phase II includes the development of recreational amenities. The planning process for Lower Putah Creek has been the result of many years of collaboration and the hard work of many individuals and organizations. One of the very first planning documents was the 1993 Reconnaissance Planning Report Fish and Wildlife Resource Management Options for Lower Putah Creek, California, which recommended the creation of a Putah Creek management plan. The Watershed Management Action Plan (EDAW, 2005) is the context for the Winters Putah Creek Nature Park Accepted Conceptual Master Plan. There have been two master planning efforts to date, the City of Winters 1995 Putah Creek Master Plan and the 2008 Winters Putah Creek Nature Park Accepted Conceptual Master Plan, which is a proposed update to the 1995 document.

## GEOMORPHOLOGY

Through the project site, Putah Creek flows west to east along the bottom of a deeply incised corridor. Water surface elevations are typically 28 to 32 feet below the terrace elevations. Some of the former riparian vegetation belt has re-established along the banks at the lower elevation. With the deeply incised channel and regulated flood flows after the Solano project, all peak flows have been contained within the confines of the upper terrace elevations (Poore, 2003).

The completion of the Solano Project that put the Monticello Dam and Solano Diversion dam in place in 1957 has altered the hydrologic regime of the creek, and buffered the effects of the frequent historic flood flows (USGS Station 11454000). Peak flows have attenuated from an estimated average of approximately 18,000 cfs to 8,000 cfs, with the document pre-dam peak of over 50,000 cfs to the post-dam peak of approximately 18,000 (USGS, 2008). Once the capacity of Lake Berryessa's reservoir pool is exceeded and the glory hole begins to spill, flood events are similar to the natural annual peak discharges (prior to the dam construction). A release of over 14,000 cubic feet per second (cfs) was recorded in March of 1983. Solano County Water agency records indicate that inflow to Lake Berryessa during the recent December 2002 flood may have been in excess of 90,000 cfs (per. comm., Solano County Water Agency). While the lake buffered the full effect of this flood, flows through the proposed project still likely reached several thousand cfs due to input from tributaries below the dam.

Even though flood levels still occur during large storms, lesser events that define channel morphology and riparian condition under the current restricted hydrograph are re-equilibrating within the historic channel morphology. The result of this change in flow regime, and the resulting hydrograph, has profoundly influenced the tributaries. Dry Creek and Pleasants Creek are both undergoing destabilization, apparently as a result of the change in base elevation and the flood elevation of Putah Creek (EDAW, 2005).

By controlling most peak runoff events at the Monticello Dam, the flow regime that defines channel dimensions, pattern, and slope has been altered and the channel responds accordingly to the new circumstances. This new channel morphology and hydrology appears to be slowly re-establishing its new equilibrium (Poore, 2003). However, the channel downstream of the dams has been significantly disturbed through: historic gravel mining and in-channel modifications; a full-width percolation dam; and, invasive species, such as giant reed (*Arundo donax*) and Himalayan blackberry (*Rubus armeniacus*) creating flow restrictions and bank reflections.

None of these disturbances are by themselves unusual in riverine systems, but in this case they significantly magnify the negative impacts on the channel. For example, several of the creek reaches through the park are continuous deep pools with no low terrace, and limited structural complexity. It appears, from comparative pictures from the 1950s at the percolation dam, that the stream substrate size class has diminished significantly from coarse gravel to silt. The riparian forest has essentially no seedling or sapling cohort, forecasting a significant problem when the existing mature forest dies.

The process of the natural channel reaching a new equilibrium, such as recreating and maintaining a natural pool sequence and a natural sinuosity ratio, is slowed by a reduced sediment supply, which has been interrupted by the Solano Project impoundments at Lake Berryessa and Lake Solano.

Nevertheless, this natural process is readily apparent along portions of the downstream reaches. In these areas, the primary channel has become significantly narrower, with a well-defined floodplain across the bottom of the creek. This low terrace ranges from 150 to 200 feet in width with a functional channel width of 28 to 32 feet. For comparison, a downstream restoration project near Davis, completed by the USACE, that used the same relative channel dimensions has been exceptionally stable and has maintained these dimensions after significant flow events.

## **PERCOLATION DAM**

The dominating feature of the park is the base of a 1930's era percolation dam near the Winters Community Center. Since the original purpose of the dam, which was to increase local groundwater elevations, never materialized, and after it was flanked by flood flows in 1955 and essentially abandoned in place, the percolation dam has become a liability for the City of Winters (herein referred to as City), with significant negative environmental and aesthetic aspects:

- The structure may pose fish passage restrictions during certain flow levels;
- The structure limits the creek's ability to seek a new form by creating a channel scour feature setting a grade control, and maintaining a full floodplain-width spill surface;
- The structure is failing from undercutting at its base, and poses a potential liability; and,
- If an accident or injury occurs at the structure there is no emergency access.

The project plan also includes the placement of 4 cross-vane structures to establish grade, maintain the pool depth, and provide stream habitat structure complexity. These features will be designed to allow fish passage under all expected flows. Location of any such structure-habitat placements should coincide with available machinery access in over-widened reaches (Poore, 2003).

The removal of the percolation dam is proposed to begin as soon as permitting is completed in 2008. Project phases will be developed depending on mitigation requirements and water levels and are expected to continue through 2010.

## **VEGETATION MANAGEMENT PLAN**

The WPCC has prepared a draft Vegetative Management Plan for the Park, included in Appendix A. This Plan outlines the general procedures for managing vegetation, both non-native and native, within the 40-acre park. The park plantings will only include native plantings, with species taken from nearby reaches when available. Some of the more common native plants include alder, arroyo willow, black willow, box elder, California buckeye, buttonbush, cottonwood, coyote bush, creeping wild rye, elderberry, Gooding's willow, miner's lettuce, mugwort, Santa Barbara sedge, California sycamore, torrent sedge, toyon, yellow willow, western redbud and wild rose. It will be important to keep the surrounding neighbors informed of the process, removal and replanting schedule, and coordinate volunteer replanting efforts. The large-scale removal of the exotics will take place in 2007 through 2012, and as the Plan states, replanting will occur as soon after the removal as possible. A program to eradicate invasive species from the floodplain is underway and will help insure the long-term function of the creek.

## RECREATIONAL OPPORTUNITIES

The 1995 (adopted) and draft 2008 (conceptual) master plans were produced for development of recreational opportunities. Parts of the 1995 plan have been implemented, specifically the Nature Trail access that lies along the former detention ponds on the south side of the channel. Winters City Council accepted the draft 2008 Winters Putah Creek Nature Park Conceptual Master Plan (herein referred to as plan) and directed staff to commence CEQA review on March 18<sup>th</sup>, 2008. The document can be found in Appendix B.

The plan also called for the utilization of the railroad bridge for pedestrian and bicycle access to a trail system connecting the two sides of the stream. A 3 m (10 ft) wide trail will be created to the north of Putah Creek. This trail will be wide enough to accommodate bikers and pedestrians, as well as allow access for emergency and city service vehicles. A 3.6 m (12 ft) wide paved trail will be created to the south of Putah Creek on the upper terrace, parallel to the road. The current car bridge has no access lane for pedestrians and is dangerous to cross. Figure 3 describes a detailed drawing of the project.

Part of such a trail system is intact on the north bank of the stream, but no connecting trails exist on the south side of the channel. The project includes a plan to connect the entire park with pedestrian and bicycle trails. A proposed spiral ramp leading from the south end of the railroad bridge would provide access to the south floodplain trail network, and a footbridge across the full floodplain of the Creek, near the I-505 bridge right of way, would provide crossing downstream. There are two standing proposals for the bridge design: a freestanding bridge with piers aligned with the I-505 bridge piers, spanning the full-width of the upper terrace; and a similar structure upstream, approximately 200 m (660 ft), from the I-505 bridge. Access by heavy machinery to streambank locations may disrupt access temporarily. The construction of public use areas, trails and bridge access should follow, once equipment access is no longer needed. Seasonal access by light machinery for maintenance work may be necessary to remove debris or perform repair work.



## ENVIRONMENTAL CHECKLIST

This initial study is prepared in compliance with the California Environmental Quality Act (CEQA) Guidelines. This format of the study is presented as follows. The project is evaluated based upon its effect on seventeen (17) major categories of environmental factors. Each factor is reviewed by responding to a series of questions regarding the impact of the project on each element of the overall factor. The Initial Study Checklist provides a formatted analysis that provides a determination of the effect of the project on the factor and its elements. The effect of the project is categorized into one of the following four categories of possible determinations:

Substantiation is then provided to justify each determination. One of the four following conclusions is then provided as a summary of the analysis for each of the major environmental factors.

- **Potentially Significant Impact:** An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.
- **Potentially Significant Unless Mitigation Incorporated:** An impact that requires mitigation to reduce the impact to a less-than-significant level.
- **Less-Than-Significant Impact:** An impact that would not be considered significant under CEQA relative to existing standards.
- **No Impact:** The project would not have any impact.

**ENVIRONMENTAL ISSUES**

<b>I. AESTHETICS</b>		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
<b>Would the project:</b>					
a)	Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
b)	Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>	<input type="checkbox"/>
d)	Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>	<input type="checkbox"/>

**DISCUSSION**

a) **No impact.** There is no designated scenic vista at the location, and the project area is substantially below the line of sight from the surrounding area.

b) **No impact.** There are no designated or generally accepted scenic resources in the corridor, outside of its existing riparian corridor and associated oak woodland, neither of which will be significantly impacted by this project. According to the State of California, there are no designated or eligible state scenic highways in the area.

c) **Less than significant impact.** Removal of the percolation dam is intended to have a no impact to the aesthetics of the area. Removal of the dam will restore the area to its historic natural state. The pedestrian bridge would be located adjacent to or near the existing I-505 bridge and is designed to blend in to the surrounding landscape. Short-term visual impacts associated with the invasive plant species removal and the revegetation program will be apparent during the construction phases. The riparian restoration work will promote fast-growing native species, which will return the site to better than the current visual condition within two to three years. Project phasing will ensure that only limited areas will be affected at one time.

d) **Less than significant impact.** Pedestrian lighting will be limited to those areas near the Community Center. Additional pathway lighting is not proposed at this time. The residents felt that additional pathway lighting would encourage people to linger in remote spaces after dark, and interfere with the natural experience.

**II. AGRICULTURAL RESOURCES**

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>

**DISCUSSION**

a) **No impact.** The site is classified as “Urban and Built-up Land” according to the California Resources Agency (CRA). No farmland will be affected.

b) **No impact.** There is no conflict with either agricultural zoning or Williamson Act properties.

c) **No impact.** No part of the site is in use as farmland, and it would be marginal potential farmland regardless.

**III. AIR QUALITY**

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<b>X</b>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>	<input type="checkbox"/>
d) Result in significant construction-related air quality impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>	<input type="checkbox"/>
e) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
f) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>

**DISCUSSION**

The project is located within the Sacramento Valley Air Basin (SVAB), under the jurisdiction of the Yolo-Solano Air Quality Management District (YSAQMD). The Sacramento Federal Nonattainment Area (including all of Yolo and part of Solano county) is currently in non-attainment for both the national (8-hour) and state (1-hour) ozone standards (EDAW, 2007c). The area is also currently designated as a non-attainment area for the state PM<sub>10</sub> ambient air quality standard.

a) **No impact.** The overall project would have no negative impact on existing air quality plans, and has the potential of nominally reducing air emissions from vehicle use by promoting local walking and bike use. There is expected to be regional use of this park, however, the park would not likely be a sole destination that could promote additional air concerns from increased driving. The proposed project would not conflict with or obstruct implementation of air quality plans.



b) **Less than significant with mitigation incorporated.** Potential short-term impacts may occur during site clearing and grading from equipment exhaust emissions and dust. Vehicle emissions of ozone, ozone precursors, and PM<sub>10</sub> will not contribute significantly to local violations of regulatory standards. The following mitigation measures will reduce potential impacts to less than significant.

Mitigation Measure AQ-1:

- *To the extent that equipment and technology is available, the contractor shall use State of California (CARB) certified catalyst and filtration technologies.*
- *All construction diesel engines, which have a rating of 50 hp or more, shall meet the Tier-2 California Emission Standards for off-road compression-ignition engines, unless otherwise certified by the Air District's Air Quality Construction Mitigation Monitor (AQCM). In the event that a Tier II engine is not available, Tier I compliant or 1996 or newer engines will be used preferentially. Older engines will only be used if the AQCM certifies that compliance is not feasible.*
- *Project sequencing is specifically designed to reduce air impacts from the operation of the heavy equipment. Wait times for dump trucks and idle time shall be minimized to 5 minutes or less.*
- *All disturbed areas, which are not being actively utilized for construction purposes, shall manage dust emissions using water, vegetative ground cover or other acceptable dust management practices.*
- *All bare ground will have ground cover replaced as soon as practicable.*
- *Heavy-duty diesel equipment will be maintained in optimum running condition.*

c) **Less than significant impact.** Taken in conjunction with other projects in the region, temporary construction emissions may contribute to levels that exceed AAQS on a cumulative basis, contributing to existing nonattainment conditions. By implementing the above-identified Mitigation Measure AQ-1, construction related emissions for the proposed project that would have had a potentially significant impact would be reduced to less-than-significant levels. Since, the proposed project would not exceed the YSAQMD's thresholds, the project would not result in a cumulatively considerable net increase of any criteria pollutant.

d) **Less than significant impact.** Certain residents, such as the very young, the elderly, and those suffering from certain illnesses or disabilities, are particularly sensitive to air pollution and are considered “sensitive receptors” (Yolo-Solano Air Quality Management District Online). The park is a recreational area that could attract sensitive receptors, such as young children, elderly, and people with respiratory conditions. Additionally, sensitive receptors may be located within nearby residential areas.

Since the use of mobilized equipment would be temporary, intermittent in combination with the dispersive properties of diesel PM, construction activities would not expose sensitive receptors to substantial pollutant concentrations. Areas near the construction equipment would also be temporarily restricted, further reducing potential exposure.

e) **No impact.** The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

f) **No impact.** The YSAQMD has established Rule 2.5 – Nuisance to addresses such issues. This rule prohibits air pollutant emissions that “cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons” (Yolo-Solano Air Quality Management District Online). The project will not result in the creation of objectionable odors.

IV. BIOLOGICAL RESOURCES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
<b>Would the project:</b>				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<b>X</b>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<b>X</b>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<b>X</b>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>

**DISCUSSION**

The project area is typical of the Putah Creek Watershed for plant species composition. Scattered willows (*Salix* sp.) dominate near the creeks edge, and on the remnant channel banks. There are occasional cottonwoods (*Populus* sp.) and alders (*Alnus* sp.) in the more mature part of this riparian vegetation. Blue elderberry (*Sambucus mexicanus*), coyote brush (*Baccharis pilularis*), and Himalayan blackberry (*Rubus discolor*) are typical in the understory. Valley (*Quercus lobata*) and live oaks (*Quercus agrifolia*), figs (*Ficus* sp.), and walnuts (*Juglans* sp.)

are dominant in the upper terraces. For more information on the plant species found in the Putah Creek Watershed please refer to the Lower Putah Creek Watershed Management Action Plan (EDAW, 2005).

Species common to the riparian plant community include wetland plants such as smartweed (*Polygonum* spp.), umbrella sedge (*Cyperus eragrostis*), sedges (*Carex* spp.), common rush (*Juncus effusus*), mugwort, cocklebur (*Xanthium strumarium*), rice cutgrass (*Leersia oryzoides*), canarygrass (*Phalaris* spp.), field mint (*Mentha arvensis*), and western goldenrod (*Euthamia occidentalis*), as well as large emergent perennials such as cattails (*Typha angustifolia*) and tule (*Scirpus acutus*). Invasive weeds, including giant reed and tamarisk occur on sand or gravel bars in the creek (EDAW, 2005).

Species associated with open water include common floating plant species such as water milfoil (*Myriophyllum* sp.), floating water-primrose (*Ludwigia peploides*), waterweed (*Elodea* sp.), and curly pondweed (*Potamogeton crispus*). The character of the aquatic plant community varies from season to season and year to year, depending on the flow and flooding pattern, temperature, and availability of propagules. For instance in some years, invasive weeds such as water hyacinth (*Eichhornia crassipes*) may dominate, while in other years, such as during the sampling, weeds such as water milfoil may dominate (EDAW, 2005).

Animals observed at the project site include red-tailed hawks (*Buteo jamaicensis*), mourning doves (*Zenaidura macroura*), common crows (*Corvus brachyrhynchos*), great blue herons (*Ardea herodias*), and chinook salmon (*Oncorhynchus tshawytscha*). For more information on the animal species found in the Putah Creek Watershed please refer to the Lower Putah Creek Watershed Management Action Plan (EDAW, 2005). Bird species have also been extensively studied on Putah Creek (Lindgren et al., 2006). There have been no Swainson's hawk nests observed or identified in the CNDDDB within a 0.8 km (½ mi) radius of the project site. If a nest is identified a breeding bird survey will be conducted prior to construction activities following the appropriate protocols.

a) **Less than significant with mitigation incorporated.** Special-status species are generally defined as species that are assigned a status designation indicating possible risk to the species. These designations are assigned by state and federal resource agencies (e.g., California Department of Fish and Game, U.S. Fish and Wildlife Service) or by private research or conservation groups (e.g., National Audubon Society, California Native Plant Society). Assignment to a special status designation is usually done on the basis of a declining or potentially declining population, locally, regionally, or nationally. The extent that a species or population is at risk usually determines the status designation. The factors that determine risk to

a species or population generally fall into one of several categories, such as habitat loss or modification affecting the distribution and abundance of a species; environmental contaminants affecting the reproductive potential of a species; or, a variety of mortality factors such as hunting or fishing, interference with man-made objects (e.g., collision, electrocution, etc.), invasive species, or toxins.

A search of the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDDB) was conducted to obtain a list of recorded sightings of special-status species found within Yolo County (CDFG, 2007b). Information from this database was used to identify special-status species that have been previously documented in the greater project vicinity or have the potential to occur based on the presence of suitable habitat, soils, and geographical distribution. There was no need to look at multiple quads due to the unique riparian nature of the site. The following species have the potential to occur within or adjacent to the project:

Table 1. CNDDDB Winters Quadrangle Query Results.

Scientific Name	Common Name	Federal Status	CA Status	CDFG	CNPS
<i>Actinemys marmorata marmorata</i>	northwestern pond turtle	None	None	SC	
<i>Athene cucularia</i>	burrowing owl	None	None	SC	
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	Threatened	None		
<i>Buteo swainsoni</i>	Swainson's hawk	None	Threatened		
<i>California macrophyllum</i>	round-leaved filaree	None	None		1B.1
<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	Threatened	None		
<i>Navarretia leucocephala ssp. bakeri</i>	Baker's navarretia	None	None		1B.1

CDFG, 2007. CNPS 1B.1-seriously endangered in California. \*CA Status is CESA, and project-related impacts to species on the "threatened and endangered species" list could be considered significant and require mitigation.

Table 2. CNDDDB Site Specific Query Results

Scientific Name	Common Name	Federal Status	CA Status	CDFG	Distance
<i>Actinemys marmorata marmorata</i>	northwestern pond turtle	None	None	SC	within site
<i>Athene cucularia</i>	burrowing owl	None	None	SC	1.09
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	Threatened	None		0.56
<i>Buteo swainsoni</i>	Swainson's hawk	None	Threatened		1.82
<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	Threatened	None		1.042

CDFG, 2007. \*Distance is in miles and is taken from the site boundary to the closest edge of species radius (e.g., the center of the burrowing owl was 302 feet further away than the radius).

The following is a discussion of each of the species identified above as having a potential to occur, together with certain additional species that have been included for review.



The **northwestern pond turtle** (*Actinemys marmorata marmorata*) listed as a Species of Special Concern by the CDFG. This species is an aquatic turtle that usually leaves the aquatic site to reproduce, to aestivate, and to overwinter. Recent fieldwork has demonstrated that northwestern pond turtles may overwinter on land or in water, or may remain active in water during the winter season; this pattern may vary considerably with latitude and habitat type and remains poorly understood (CDFG, 1994a). Suitable habitat is available for the northwestern pond turtle throughout the project site, and therefore it is likely to occupy the site.

Mitigation Measure BR-1:

*The pond turtle will be protected from site staging and operations areas through the use of fencing, a Worker Environmental Awareness Program (WEAP), and daily monitoring by a qualified biologist. The site will be inspected daily for the presence of turtles and netting or other barriers will be used when necessary to trap the turtles and move them to an area outside of the construction activity.*

The **burrowing owl** (*Athene cunicularia*) listed as a Species of Special Concern by the CDFG and is protected by the Migratory Bird Treaty Act. The owl usually nests in an old burrow of a ground squirrel, badger or other small mammal, although they may dig their own burrow in soft soil. Where burrows are scarce, owls have been found to utilize pipes, culverts, and nest boxes (CDFG, 2007a). The actual nest chamber is lined with excrement, pellets, grass, feathers, and other debris (CDFG, 2007a). The burrowing owl is considered to be nocturnal although they can be found perched, during daylight hours, at or near the entrance to their burrow or on a nearby low post (CDFG, 2007a). They are thought to be semi-colonial and during the period when they have nestlings or recently fledged young, one or both owls are usually perched on guard near the entrance to the nest burrow (CDFG, 2007a). It is unlikely that this species will be present in or adjacent to the project site. Suitable habitat is not present for this species at the site.

**Vernal pool fairy shrimp** (*Brachinecta lynchi*) were listed as a federally Threatened Species on September 19, 1994 (59 FR 48153). They inhabit vernal pools and vernal swales. Vernal pools are generally small, ephemeral (seasonal) wetlands that form in shallow depressions underlain by a hardpan (*i.e.*, a layer near the ground surface that restricts the percolation of water) (Eriksen and Belk, 1999). These depressions fill with rainwater and runoff from adjacent areas during the winter and may remain inundated during the spring to early summer. Vernal pools are found in areas of level, or gently undulating topography in the lowlands of California, especially in the grasslands of the Central Valley (Collie and Lathrop, 1976; USFWS, 1994; Holland, 1988). It is unlikely that this species will be present in or adjacent to the project site. Suitable habitat is not present for this species. There are no identified vernal pools or swales within 0.56 miles of the

project site (CDFG, 2007b). The site is commonly inundated and scoured, and lacks appropriate soil types and conditions to support the species.

The **Swainson's hawk** (*Buteo swainsoni*) is listed as a State Threatened species. Nests are built on trees or utility poles at 4-100 feet from the ground (CDFG, 2000). Nest materials consist of sticks and plant parts of sagebrush, Russian thistle, and other weeds (Fitzner, 1980). Swainson's hawks forage over open habitats and often hunt from perches such as power poles and fence posts. During the breeding season, Swainson's hawks are known to travel long distances (up to 29 kilometers) in search of habitats with abundant prey (Estep, 1989; Woodbridge, 1991). In agricultural habitats, foraging activity is closely associated with harvest or cultivation activities that expose prey to predation (Estep, 1989; Woodbridge, 1991). No known occupied nests are within a 0.8 km (0.5 mi) radius of the project location, however ample habitat is available for new pairs to move in and nest (CDFG, 2007b). The closest observed nest is approximately 1.9 km (1.2 mi) to the northeast of the project site (CDFG, 2007b).

Mitigation Measure BR-2:

*If construction occurs during the breeding season (March-September 15), the project applicant shall conduct pre-construction surveys no more than 14 days and no less than 7 days prior to initiating construction. A qualified biologist shall conduct the surveys and the surveys shall be submitted to the City for review. The survey area shall include all potential nesting sites located within 0.8 km (½ mi) of the project site. If no active nests are found during the surveys, no further mitigation shall be required except with regard to foraging habitat.*

*If an active nest used by a Swainson's hawk is found sufficiently close to the construction area, a qualified biologist shall notify the CDFG. No intensive new disturbances (e.g. heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities) or other project related activities which may cause nest abandonment or forced fledging, should be initiated within 0.4 km (¼ mi) (buffer zone) of an active nest between March 1- September 15 or until August 15 if a Management Authorization or Biological Opinion is obtained for the project. If construction or other project related activities, which may cause nest abandonment or forced fledging, are necessary within the buffer zone, monitoring of the nest site by a qualified biologist should be required. Routine disturbances such as agricultural activities, commuter traffic, and routine facility maintenance activities within 0.4 km (¼ mi) of an active nest should not be prohibited (CDFG, 1994b).*

The **valley elderberry longhorn beetle** (*Desmocerus californicus dimorphus*) was listed as a federally Threatened Species on August 8, 1980 (45 FR 52803). The life history of valley elderberry longhorn beetles (VELB) is not well known. Adult beetles are active from March to

June, which is their assumed breeding season (USFWS, 1984). VELB are known to lay eggs in the crevices of bark of elderberry trees (Craighead, 1923) and are closely associated with blue elderberry (*Sambucus mexicana* or *S. velutina*), which is an obligate host for the beetle larvae. Adult valley elderberry longhorn beetles are usually found upon or flying between elderberry plants. Critical habitat was designated for the VELB on August 8, 1980 (45 FR 52803 52807). The USFWS designated two critical habitat areas along the American River in the Sacramento area. According to the Recovery Plan for the species (USFWS, 1984), an area along Putah Creek in Solano County and an area west of the Nimbus Dam along the American River Parkway in Sacramento County are considered essential habitat. U.C. Davis researcher, Dr. Theresa Talley, has been conducting surveys for VELB along Putah Creek. While Dr. Talley has not found any beetles near the project site, there are numerous elderberry shrubs within the project area but not on any proposed trails or access routes. Care will be taken to avoid all shrubs within the project area.

Mitigation Measure BR-3:

*Prior to land disturbance activities, the observed elderberry shrubs shall be identified, mapped, flagged, and be protected by orange temporary fencing for the duration of the project earthmoving activities. Complete avoidance (i.e., no adverse effects) may be assumed when a 30 m (100 ft) (or wider) buffer is established and maintained around elderberry plants containing stems 2.5 cm (1.0 in) or greater in diameter at ground level. In the event that work must proceed in areas where encroachment on the 30 m (100 ft) buffer has been approved by the USFWS, a minimum setback of at least 6 m (20ft) from the dripline of each elderberry plant shall be provided. Signs will be erected every 15 m (50 ft) along the edge of the avoidance area with the following information: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." (USFWS, 1999).*

The **round-leaved filaree (*Erodium macrophyllum*)** is listed as seriously endangered in California (1B.1) by the California Native Plant Society (CNPS). Round-leaved filaree can be found from southern Oregon through California into northern Mexico in grasslands on friable clay as well as in nonnative grasslands on clay soils with relatively low cover of annual grasses (Jones and Stokes, 2006). It most often occurs in foothill locations at elevations between 200 and 2000 feet (Jones and Stokes, 2006). It is unlikely that this species will be present in or adjacent to the project site. Suitable habitat is not present for this species.

The **Pacific lamprey** (*Lampetra tridentata*), with the exception of landlocked populations, spends the predatory phase of their life cycle in the ocean, where they attack a wide variety of various salmon and flatfishes. Landlocked forms spend the predatory phase (of unknown duration) in lakes or reservoirs, feeding on suckers and other large fishes. Adults usually move up into spawning streams between early March and late June. However, upstream movements in January and February have also been observed, and movements into July have been observed in northern streams (Moyle, 2002). As the majority project site is a long deep pool, with fine sediment, it is unlikely that this species would occupy the site and be consequently affected by the project.

The **Baker's navarretia** (*Navarretia leucocephala ssp. bakeri*) is listed as seriously endangered in California (1B.1) by the CNPS. Baker's navarretia is found in the Yellow Pine Forest, Northern Oak Woodland, Foothill Woodland, Valley Grassland, and Freshwater Wetlands plant communities (Calflora, 2007). Within these communities it can be found in meadows, vernal-pools and wetlands at elevations between 0 and 5500 feet (Calflora, 2007). While this species has not been observed on or adjacent to the site, there is the potential for these species to be present. Suitable wetland habitat is available for this species.

Mitigation Measure BR-4:

*A pre-construction survey will be completed to ensure that this species is identified and if it does occur, it will be marked and avoided, and if necessary removed, with CDFG permission.*

The **Central Valley steelhead** (*Oncorhynchus mykiss*) Evolutionarily Significant Unit (ESU) was listed as a threatened species on March 19, 1998 (63 FR 13347). An ESU is a distinctive group of Pacific salmon, steelhead, or sea-run cutthroat trout (National Marine Fisheries Service [NMFS], 2002). This ESU includes all naturally spawned populations of steelhead (and their progeny) in the Sacramento and San Joaquin Rivers and their tributaries. Steelhead inhabit riparian, emergent, palustrine habitat (Leidy, 2000). Spawning and rearing habitat is usually characterized by perennial streams with clear, cool to cold, fast flowing water with a high dissolved oxygen content and abundant gravels and riffles. Critical habitat for the Central Valley steelhead ESU was designated on February 16, 2000. Currently, the Central Valley steelhead ESU includes steelhead in all river reaches accessible to the Sacramento and San Joaquin Rivers and their tributaries in California (USFWS, 2000a). Also included are river reaches and estuarine areas of the Sacramento-San Joaquin Delta, all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Strait, all waters of San Pablo Bay westward of the Carquinez Bridge, and all waters of San Francisco Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge. Based on Red Bluff Diversion Dam counts, hatchery counts, and prior natural spawning

escapement estimates from the early 1990s, McEwan and Jackson (1996) roughly estimated the total annual run size (hatchery and wild) for the entire system at no greater than 10,000 adult fish. The Lower Putah Creek Fish Sampling database, which has data from August of 1991 to October of 2005, shows no records of steelhead being observed in Putah Creek (accessed on 08/10/07). The project timing is outside of any potential steelhead run, and the creek is isolated from the Bay Delta by agricultural dams during this period as well.

The chinook salmon (*Oncorhynchus tshawytscha*) is the largest and least abundant species of Pacific salmon (Behnke, 2002). Chinook salmon, along with other salmonids, are anadromous (a migratory fish that is born in fresh water and spends a portion of its life in the sea before returning to fresh water to spawn). Unlike steelhead, chinook salmon are semelparous (*i.e.*, they die following a single spawning event). Three chinook salmon ESUs may overlap within the project area: 1) Central Valley spring-run ESU; 2) Central Valley winter-run ESU; and 3) Central Valley fall and late fall-run ESU. The Central Valley spring-run chinook salmon ESU was listed as a threatened species on September 16, 1999 (NMFS, 1999). This ESU includes all naturally spawned populations of spring-run chinook salmon in the Sacramento River and its tributaries in California (NOAA Fisheries 1999). The Central Valley winter run chinook salmon ESU was listed as an endangered species on January 4, 1994 (NMFS, 1994). The Central Valley winter-run chinook salmon ESU includes populations of winter-run chinook salmon in the Sacramento River and its tributaries in California (NMFS, 1994). The Central Valley fall and late fall-run chinook salmon ESU was designated as a candidate for listing on September 16, 1999 (NMFS, 1999). This ESU includes all naturally spawned populations of fall-run chinook salmon in the Sacramento and San Joaquin River Basins and their tributaries, east of the Carquinez Strait, California (NMFS, 1999). This species was observed and recorded in the Lower Putah Creek Watershed Management Plan (EDAW, 2005). The timing of the project activities are designed to eliminate potential impacts to this species, and the Creek is isolated from the Bay Delta by agricultural dams during this period as well. It is unlikely that the project will affect this ESU.

Of the potential sensitive species that may be present in the project area, the following have the greatest potential to be significantly affected by the project: northwestern pond turtle (*Actinemys marmorata marmorata*), Swainson's hawk (*Buteo swainsoni*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), Baker's navarretia (*Navarretia leucocephala ssp. bakeri*) and Fall-run chinook salmon (*Oncorhynchus tshawytscha*).

Each of the listed species with potential to use the site will be identified in a Worker Environmental Awareness Program (WEAP) that includes large color photographs, species description, and regulatory requirements in English and Spanish. All workers will be trained and

checked off as a part of the WEAP. Qualified staff will be available for each major project phase to clear the site and address any site-specific issues that arise.

These potential impacts will be mitigated through a series of standard biological mitigation efforts. The mitigation efforts are tailored to the needs of the individual species with the potential to be affected.

Mitigation Measure BR-5:

*Implementation of the following mitigation measure would reduce the potential impacts related to biological resources to a less than significant impact.*

*Prior to any grading activities onsite, the project proponent shall:*

*1.) Submit the Initiation Package to the USACE, USEPA, USFWS and CDFG review team for consideration on the 404(d) Permit application process, for a Section 7 consultation and possible Take Permit.*

*All native fish species will be protected either by timing the in-stream activities outside of the movement and breeding seasons, or through displacement and temporary dewatering. The final mitigation elements will be developed in consultation with the USFWS and CDFG. The potential for indirect impacts will be mitigated for by sediment control activities under the SWPPP.*

**b) Less than significant with mitigation incorporated.** The project has the potential to effect riparian habitat. Equipment will be operated within the riparian zone. The riparian zone is in very poor ecological condition and is strongly influenced by rip-rap, altered channel morphology, gravel loss, and a significant structure, as well as non-native invasive species displacing the growing space available to native vegetation. The project intent is to increase the quality and extent of riparian cover. The impacts of the re-establishment of channel profile, and the elimination of non-native vegetation will be significant over the short-term, until new native vegetation establishes itself. This short-term impact will be negligible and is less than the current stream bank failures and loss of native riparian habitat due to invasive species. The resulting restored banks and channel will have significantly positive long-term benefits to native plants, animals, and fish.

Mitigation Measure BR-6:

*Implementation of the following mitigation measure would reduce the potential impacts to a less than significant impact.*

*Prior to the commencement of grading or construction activities onsite, the applicant shall comply with all of the following:*

*1.) Obtain and comply with a California Department of Fish & Game, Streambed Alteration Agreement in accordance with Sections 1600-1616 of the California Fish & Game Code, as required.*

*2.) Obtain and comply with the provisions of a SWPPP permit from the California Regional Water Quality Control Board. Construction cannot be started until the SWPPP is issued.*

*3.) Establish native grass and accelerate riparian transplanting for cover.*

**c) Less than significant with mitigation incorporated.** Adjacent seasonal wetlands within the floodplain have the potential to be impacted by this project. These wetlands will be protected by identifying, avoiding and mitigating for them as part of the 404(d) permitting process.

*Mitigation Measure BR-7:*

*Implementation of the following mitigation measures would reduce the potential impacts related to alteration of seasonal wetlands within the floodplain to a less than significant impact.*

*Prior to the commencement of grading or construction activities onsite, the applicant shall comply with all of the following:*

*1.) Obtain a USACE 404(d) permit.*

*2.) Implement a mitigation plan for replacement (creation, restoration, and preservation) of impacted seasonal wetlands within the floodplain, subject to USACE approval.*

**d) Less than significant impact.** There is the potential for some incidental and temporary resident fish movement restriction during the removal of the percolation dam. That restriction would be assessed by CDFG under the 1600 series permitting process. Specific mitigation measures may be required and would be implemented for that portion of the project. Salmonid migration timing would be avoided.

**e) No impact.** The project does not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

**f) No impact.** No Habitat Conservation Plan, Natural Community Conservation Plan, or other approved regional, or State habitat conservation plan has been adopted for the project site, or the

surrounding area. Yolo County is in the process of developing such a document, but it is not complete. The City also has a Habitat Mitigation Program (Appendix C) however, there are no apparent conflicts with this program or any of the proposed plans, and the project would support the restoration of riparian habitat.

V. CULTURAL RESOURCES		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
<b>Would the project:</b>					
a)	Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
d)	Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>

**DISCUSSION**

For the purposes of CEQA, a historical resource is a resource listed in, or determined eligible for listing in, the California Register of Historic Resources (CRHR). When a project would affect an archaeological site, a determination must be made whether the site is a historical resource. This is defined (EDAW, 2007c) as any site that:

- (A) Is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California; and,
- (B) Meets any of the following criteria:
  - a. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
  - b. Is associated with the lives of persons important in our past;
  - c. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
  - d. Has yielded, or may be likely to yield, information important in prehistory or history.

a-d) **No impact.** EDAW (2007b) undertook a cultural resource investigation of the park area in conjunction with the project. This report is included in Appendix D. Additionally, Jones & Stokes performed a cultural resource study for substantial parts of the project area. This is



included in three reports presented in a publicly available document, submitted by the Solano County Department of Resource Management to the City (Jones and Stokes, 2008).

Two historic-era bridges, Bridge 23C0243 and Railroad Bridge, located within the project area appear to be eligible for listing on the CRHR at the local level, for their association with the early development of Winters; however, neither of these two bridges would be affected by project activities (EDAW, 2007b; Jones & Stokes, 2008). A historic gas station, Lemos Service Station, was also identified as a historical resource for the purposes of CEQA (Jones & Stokes, 2008). The location of this resource is approximately 100 m (300ft) from the project site and would not be affected by project activities.

The percolation dam, although old enough to meet general age criteria for historic structures, does not function as designed due to significant damage to the superstructure and has shifted on its foundation. Flood flows cut around the dam in 1955 and operation of the flash boards ceased that year (pers. comm., Newton Wallace, Winters Express). No documents associated with the methods of construction, plans, or architects or designers have been discovered. After a thorough search of the City records by staff, the following conclusions have been made. The percolation dam is not historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

The percolation dam is not associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; or associated with the lives of persons important in California's past; it does not embody the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or, yielded, or may be likely to yield, information important in prehistory or history.

Mitigation Measure CR-1:

*Even though the location of the project site is not expected to contain cultural or historic resources, ground-disrupting activities could inadvertently expose and significantly impact previously unrecorded human remains. Should previously undisclosed archaeological resources be found, the following procedures would be applied. Any locally darkened sediments, concentrations of chipped stone especially obsidian and flint, any shaped stone, circular pits in bedrock, and/or concentrations of bone or shell are found, all work in the immediate vicinity of the find(s) shall cease until a qualified archaeologist can be retained to evaluate the find(s) and make recommendations as necessary.*

*There are no known resources have been reported in this vicinity, and although project geology and geomorphology suggests that such resources are unlikely within the Study Area, they nevertheless could occur. If any of the above listed items are found below the surface, the same procedures indicated above shall be followed. If human remains or bones of any type are found, the stipulations set forth in Section 15064.5 of the CEQA Guidelines (formerly included in Appendix K of the CEQA Guidelines) shall be followed. Work shall cease in the area of the find(s) until qualified individuals (County Coroner by law, in practice a qualified archaeologist or forensic anthropologist working with the local Indian community) have determined that the bone is human and archaeological in nature. If the bone is human and archaeological, the project proponent shall follow the procedures indicated in the California Public Resources Code as they relate to the discovery of human remains. The above noted procedures shall be included within the project plan and shall be employed during project construction, thereby incorporated as part of the project description.*

<b>VI. GEOLOGY AND SOILS</b>		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
<b>Would the project:</b>					
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b)	Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**DISCUSSION**

The site is located at the edge of the Great Valley geomorphic province of California, a large, elongate, northwest-trending structural trough, generally constrained to the west by the Coast Ranges and to the east by the foothills of the Sierra Nevada (Norris and Webb, 1990). The Great Valley consists of two valleys lying end-to-end, with the Sacramento Valley to the north and the

San Joaquin Valley to the south.

The Sacramento and San Joaquin Valleys have been filled to their present elevations with thick sequences of sediment derived from both marine and continental sources. The sedimentary deposits range in thickness from relatively thin deposits along the eastern valley edge to more than 25,000 feet in the south central portion of the Great Valley (Norris and Webb, 1990). The sedimentary geologic formations of the Great Valley province vary in age from Jurassic to Quaternary, with the older deposits being primarily marine in origin. Younger sediments are continentally derived and were typically deposited in lacustrine, fluvial, and alluvial environments, with their main source being the Sierra Nevada.

a i-iii) **No impact.** The project site is located within Seismic Zone 3 and does not lie within or adjacent to an Alquist-Priolo Earthquake Fault Zone (California Department of Conservation [CDC], 1994 and 2008). The nearest mapped active faults are the Green Valley Fault located approximately 15 miles to the southwest, the Dunnigan Hills Fault located approximately 18 miles to the northeast, and the Hunting Creek Fault located approximately 27 miles to the northwest (CDC, 1994).

a iv) **Less than significant impact.** There is a potential for landslides due to relatively steep slopes along the northern and southern banks of Putah Creek under existing conditions. However, with the stabilization of the toe of the creek, establishment of vegetation, and regrading slopes for trails and access, the potential for landslides will be unlikely.

b) **Less than significant impact.** Site grading and heavy equipment operation associated with the project could result in some soil erosion, however as a condition of approval of any grading permit, the contractor is required to control dust and wind erosion through a combination of watering and erosion control practices (refer to Mitigation Measure AQ-1).

During grading, steps will be taken to ensure that dust and soil erosion does not affect either the adjacent creek or residences in the area (refer to mitigation in the Air Quality section). In compliance with the 402 permit, the project is required to implement best management practices (BMPs) during construction to ensure that all soil erosion and deposition is contained within the construction site. Such practices may include covering the graded area with straw or straw matting and using water for dust control (refer to Mitigation Measure AQ-1). Therefore the project would not be expected to result in substantial soil erosion, siltation, or loss of topsoil.

The project intends to follow the City's General Plan Policies VI.D.6-7 to further ensure that soil erosion, siltation, or loss of topsoil does not occur. These policies state that the City shall seek

state grant funding for revegetation, habitat preservation, and erosion control in the Putah Creek and Dry Creek corridors. The City shall work with Yolo County, Solano County, the Putah Creek Council, the CDFG, and the USACE in establishing guidelines for erosion control measures along Putah Creek and Dry Creek. Such guidelines should implement the following principles:

- Slope stabilization projects should emphasize revegetation.
- Stabilization projects that involve the use of cribs, gabions, rock and wire mattresses, or wire mesh over stone should be screened from public view with vegetation to assure a naturalistic appearance.

Brush clearing, mowing of natural vegetation, fire breaks, or similar activities along Putah Creek and Dry Creek shall be prohibited unless a demonstrated need exists to protect the public health, safety, or welfare, as determined by the Fire Protection District or other public agency with legal jurisdiction (General Plan Policy VI.D.8 in City of Winters, 1992)

c) **No impact.** The project site is not located in an area consistent with unstable soils or geologic units (National Resource Conservation Service [NRCS], 2008a,b).

d) **Less than significant impact.** Expansive soils are those that greatly increase in volume when they absorb water and shrink when they dry out. These soils are typically characterized by large amounts of finer grained materials such as silts and clays within the soil matrix. Expansion is measured by shrink-swell potential, which is the relative volume change in a soil with a gain in moisture (City of Davis, 2004).

The site soils consist of Yolo loam and Yolo silt loam (NRCS, 2008a,b). These soils have the potential to be expansive with the addition of a large volume of water. However, no dwelling structures are intended to be constructed as a result of this project and where permanent structures are proposed, geotechnical engineering analysis will provide for appropriate foundations or footings.

e) **Less than significant impact.** The project does not intend to use septic tanks or alternative wastewater disposal systems. It has been proposed to use a portable restroom, which will be located along Putah Creek Road near the main entry into Putah Creek Flats, which is on the upper bank of the south side of the creek (Figure 3).

<b>VII. HAZARDS AND HAZARDOUS MATERIALS</b>		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
<b>Would the project:</b>					
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>	<input type="checkbox"/>
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>	<input type="checkbox"/>
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>X</b>
h)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<b>X</b>	<input type="checkbox"/>	<input type="checkbox"/>