



**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:

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Lead Agency Contact:
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Planning Manager
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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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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_x- oxides of nitrogen
NPDES- National Pollution Discharge Elimination System
NRCS- Natural Resources Conservation Service
PM₁₀- particulate matter under 10 microns
PM_{2.5}- 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 (CNDDB)/Holland (1986), the recent revision of Cheatham and Haller by the CNDDB.

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).

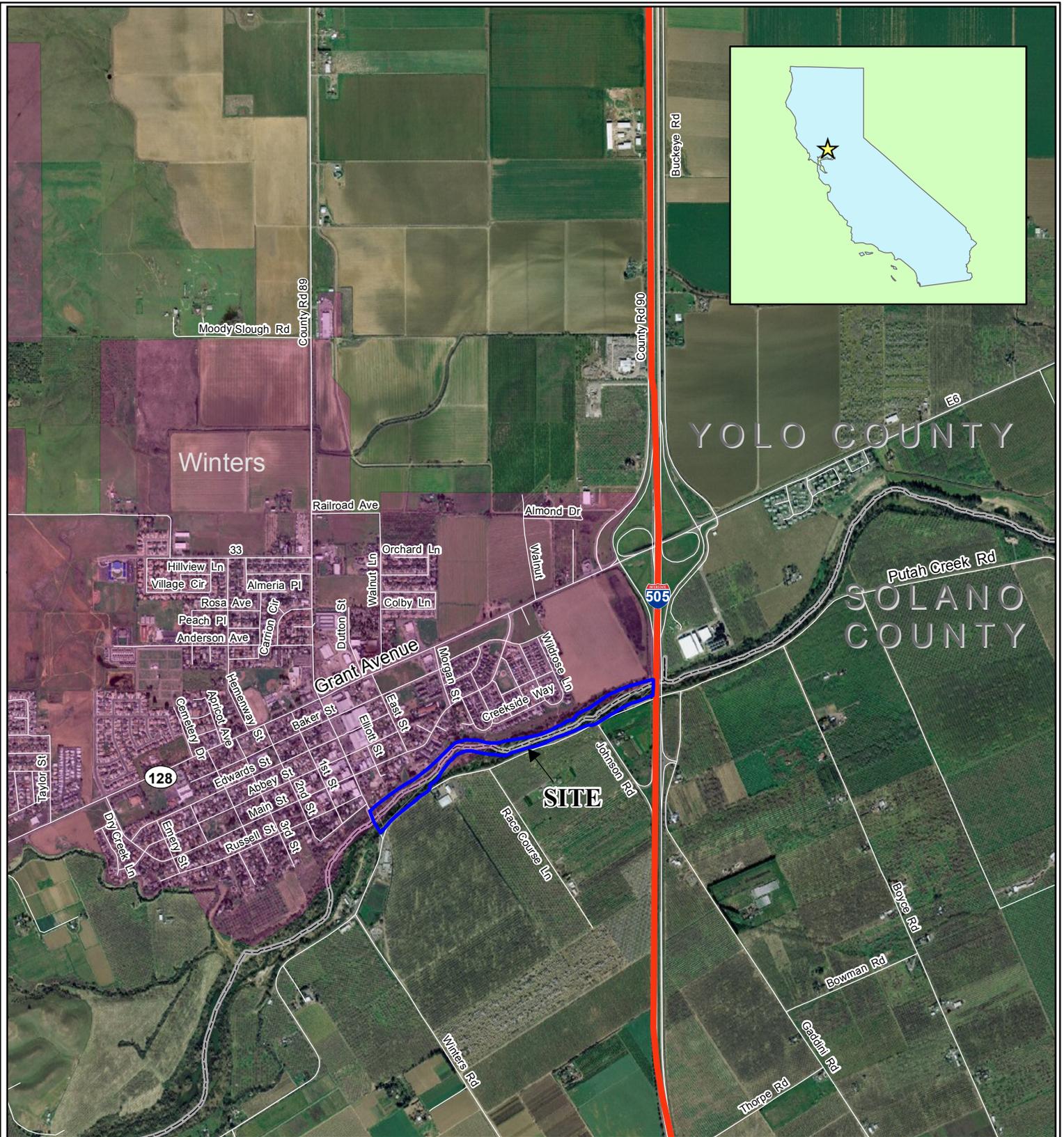
There are no specific restrictions or protection policies on the removal of or construction near oak trees in Solano county (Department of Environmental Management, 2003). The City of Winters General Plan Policy VI.C. 9-10 states that large, older and historically significant trees should not be removed 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.

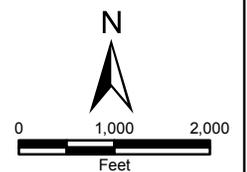
Natural Communities

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

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

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).

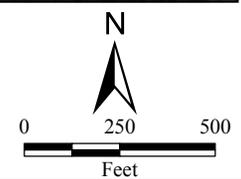


LEGEND

- 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

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

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

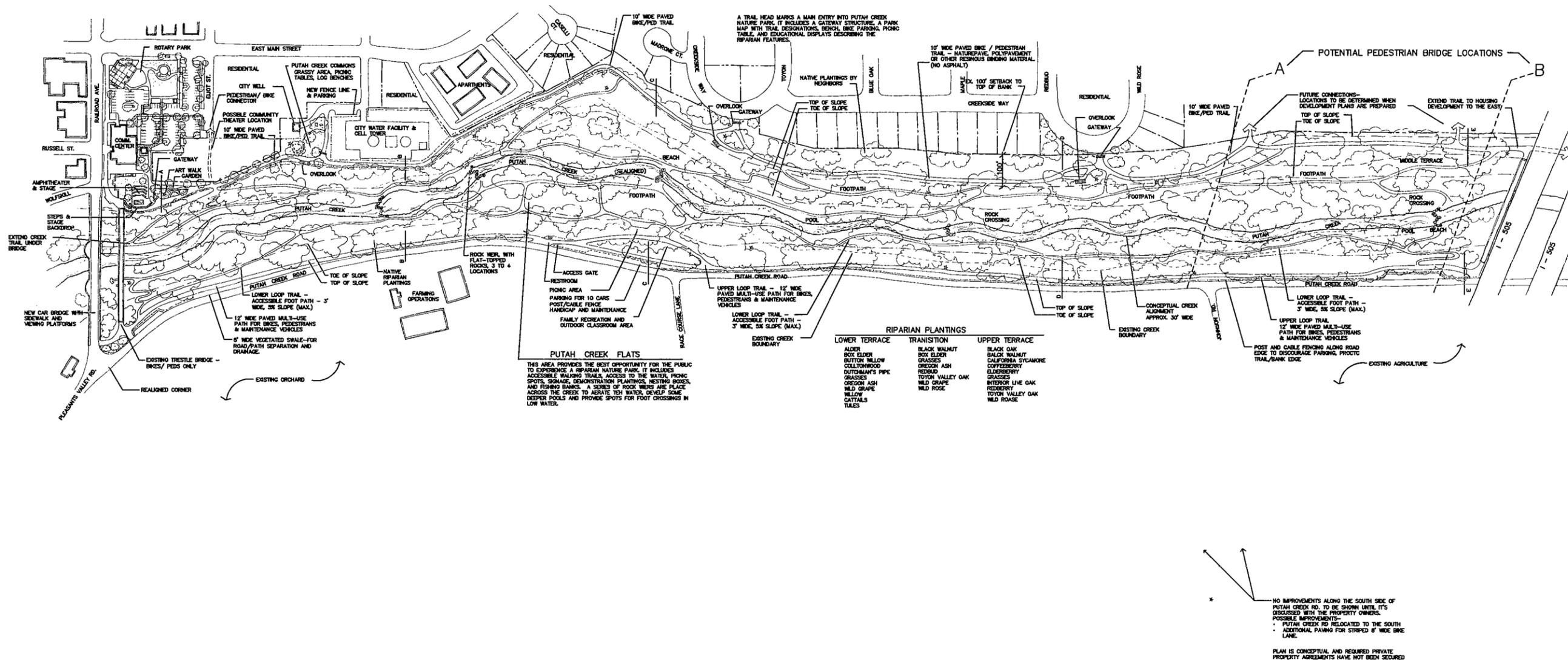
The WPCC has prepared a draft Vegetative Management Plan for the Park, included in Appendix A. This Plan outlines the general procedures for managing vegetation, both non-native and native, within the 40-acre park. The park plantings will only include native plantings, with species taken from nearby 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 18th, 2008. The document can be found in Appendix B.

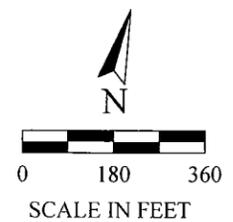
The plan also called for the utilization of the railroad bridge for pedestrian and bicycle access to a trail system connecting the two sides of the stream. A 3 m (10 ft) wide trail will be created to the north of Putah Creek. This trail will be wide enough to accommodate bikers and pedestrians, as well 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.



Note:
 Adapted from a Master Plan prepared by
 Cunningham Engineering, dated October, 2007.

* NO IMPROVEMENTS ALONG THE SOUTH SIDE OF PUTAH CREEK RD. TO BE SHOWN UNTIL IT'S DISCUSSED WITH THE PROPERTY OWNERS.
 POSSIBLE IMPROVEMENTS:
 - PUTAH CREEK RD. RELOCATED TO THE SOUTH
 - ADDITIONAL PAVING FOR STRIPPED 8' WIDE BIKE LANE.
 PLAN IS CONCEPTUAL AND REQUIRED PRIVATE PROPERTY AGREEMENTS HAVE NOT BEEN SECURED



SITE PLAN
 WINTERS PUTAH CREEK NATURE PARK FLOODPLAIN
 RESTORATION AND RECREATIONAL ACCESS PROJECT
 Winters, California

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

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

I. AESTHETICS		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
Would the project:					
a)	Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
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"/>	X
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	X	<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"/>	X	<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"/>	X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
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"/>	X

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"/>	X
b)	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	X	<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"/>	X	<input type="checkbox"/>
d)	Result in significant construction-related air quality impacts?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
e)	Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f)	Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

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 PM₁₀ 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 PM₁₀ 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 address 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
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	X	<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"/>	X	<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"/>	X	<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"/>	X	<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"/>	X
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"/>	X

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 Himilayan 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 (*Euthamnia 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.

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal Status</u>	<u>CA Status*</u>	<u>CDFG</u>	<u>CNPS</u>
<i>Actinemys marmorata marmorata</i>	northwestern pond turtle	None	None	SC	
<i>Athene cunicularia</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

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal Status</u>	<u>CA Status</u>	<u>CDFG</u>	<u>Distance*</u>
<i>Actinemys marmorata marmorata</i>	northwestern pond turtle	None	None	SC	within site
<i>Athene cunicularia</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
Would the project:					
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"/>	X
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"/>	X
c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d)	Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

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.

VI. GEOLOGY AND SOILS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
Would the project:				
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"/>	X
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	X	<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"/>	X
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"/>	X	<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"/>	X	<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).

VII. HAZARDS AND HAZARDOUS MATERIALS		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
Would the project:					
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"/>	X	<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"/>	X
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"/>	X	<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"/>	X
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"/>	X
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"/>	X
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"/>	X
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"/>	X	<input type="checkbox"/>	<input type="checkbox"/>

DISCUSSION

a) **Less than significant impact.** The proposed project would contain no hazardous materials. However, during routine maintenance and for short periods associated with construction, certain potentially hazardous materials (such as pesticides, herbicides, fertilizers, gasoline, and solvents) may be transported to, and used on the site. If not properly used and stored, such materials could potentially create health hazards for park users and neighboring residents. However, the possibility of accidental release in a manner harmful to humans or the environment would be minimal as the chemicals used for normal maintenance are not typically of sufficient amount or concentration to pose hazards to the public.

Hazardous materials and waste regulations are implemented by a number of government agencies including, but not limited to, the following:

- U.S. Environmental Protection Agency (U.S. EPA),
- California Environmental Protection Agency (EPA) – Division of Toxic Substances Control (DTSC),
- Regional Water Quality Control Board (RWQCB),
- California Highway Patrol, and
- Local police and fire departments.

Each of the mentioned agencies has established regulations regarding the proper transportation, handling, management, use, storage, and disposal of hazardous materials for specific operations and activities.

b) **No impact.** The site is not known or expected to contain any underground storage tanks (USTs), aboveground storage tanks (ASTs), gas lines, or any other item that may 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.

c) **Less than significant impact.** The project site is located near one school (Winters Community Christian School, located approximately 0.21 km (0.13 mi) to the northwest). However, as discussed in Item VII(a,b), above, and in the Air Quality section of this Initial Study, construction of the proposed project is not expected to handle or emit significant quantities of hazardous or acutely hazardous materials, substances, or waste.

d) **No impact.** According to the hazardous materials site list compiled by the California DTSC, Winters does not contain any properties considered federal superfund sites (NPL), state response sites, voluntary cleanup sites, or school cleanup sites (DTSC, 2008).

e) **No impact.** The project site is not within two miles of a public airport (USGS, 1970).

f) **No impact.** No private airstrip is located in proximity to the project site (USGS, 1970).

g) **No impact.** The proposed project would have no effect on any emergency plan. The project does not propose alteration of the existing street system, and construction of the project and use of the site would not place any permanent or temporary physical barriers on any existing public streets. Furthermore, the project site is not utilized by any emergency response agencies, and no emergency response facilities exist in the project vicinity.

h) **Less than significant with mitigation incorporated.** The project is designed to be a nature park with significant vegetation established. The vegetation that will be planted as a result of this project is not typically a fire hazard, however transients and children have been known to start fires in the project area. Since the project is located near residences there is the possibility of loss, injury or death involving wildland fires due to arson. Heavy equipment used during project development can become hot during operation, which could potentially start a fire. The removal of non-native invasive species should reduce the potential of wildland fires by reducing fire fuels and fire sustaining eucalyptus litter.

Mitigation Measure HHM-1

- *During construction, operation, and maintenance of the project, all equipment operating with an internal combustion engine shall be equipped with federally approved spark arresters. Spark arresters are not required on trucks, buses, and passenger vehicles (excluding motorcycles) that are equipped with an unaltered muffler or on diesel engines equipped with a turbocharger.*
- *Operating or using any internal combustion engine, on any timber, brush, or grass covered land, including trails and roads traversing such land, without a spark arrester, maintained in effective working order, meeting either (I) Department of Agriculture, Forest Service standard 5100, "SPARK ARRESTERS FOR INTERNAL COMBUSTION ENGINES," (current edition); or (II) the Society of Automotive Engineers (SAE) recommended Practices J335, "MULTIPOSITION SMALL ENGINE EXHAUST SYSTEM FIRE IGNITION SUPPRESSION," (current revision) and J350, 36 CFR 261.52(j), is prohibited.*

- *Passenger carrying vehicles, pickups, and medium and large highway trucks (80,000 Gross Vehicle Weight) will be equipped with a factory designed muffler system that is specified for the make and model of the respective vehicle/truck or with a muffler system that is equivalent to or exceeds factory specifications.*
- *Exhaust systems shall be properly installed and continually maintained in serviceable condition.*
- *While in use, each internal combustion engine including tractors, trucks, yarders, loaders, welders, generators, stationary engines, or comparable powered equipment will be provided with at least the following:*
 - *One fire extinguisher, at least 5#ABC with an Underwriters Laboratory (UL) rating of 3A 40BC, or greater.*
 - *One shovel, sharp, size O or larger, roundpointed with an overall length of at least 48 inches.*
 - *One axe, sharp, double bit 3 1/2#, or one sharp pulaski.*
 - *Extinguishers, shovels, axes, and pulaskis shall be mounted so as to be readily available from the ground. All tools shall be maintained in a serviceable condition.*

VIII. HYDROLOGY AND WATER QUALITY		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
Would the project:					
a)	Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
e)	Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f)	Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
h)	Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>

VIII. HYDROLOGY AND WATER QUALITY		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
Would the project:					
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
j)	Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>

DISCUSSION

a) **Less than significant impact.** Compliance with all applicable regulatory requirements, stated below, which are designed to maintain and improve water quality from development activities will be enforced throughout the duration of the project.

Section 1600 of the California Fish and Game Code requires that any person, governmental agency, or public utility proposing any activity that will divert or obstruct the natural flow of or change the bed, channel or bank of any river, stream, or lake, or proposing to use any material from a streambed, to first notify CDFG of such proposed activity.

The City is within the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRWQCB). According to the CVRWQCB, construction activities disturbing one or more acres are required to obtain a National Pollution Discharge Elimination System (NPDES) General Activity Stormwater Permit. This permit controls construction and operation activities, and ensures that the project would not exceed the limitations of receiving waters, and thus would not exceed water quality standards. The general permit requires the permittee to employ BMPs before, during, and after construction. The primary objective of BMPs is to reduce non-point source pollution into waterways.

To comply with Section 402 of the Clean Water Act, the project proponent would be required to develop a Stormwater Pollution Prevention Plan (SWPPP) that describes the site, runoff, erosion and sediment controls, means of waste disposal, implementation of approved local plans, control of post-construction sediment and erosion control measures and maintenance responsibilities, and non-stormwater management controls. BMPs would be determined in the SWPPP and would act to reduce water quality impacts, including erosion and siltation, to the extent practicable.

To comply with Section 404(d) of the Federal Clean Water Act, authorization from the Secretary of the Army, acting through the Corps of Engineers, is required for the discharge of dredged or fill material into all waters of the United States. Waters of the United States include traditionally navigable waters, interstate waters, their tributaries, and adjacent wetlands. These categories include most wetlands, intermittent and ephemeral streams where there is an established ordinary high water mark, and areas subject to the ebb and flow of the tide. An initiation package is being completed as part of the permitting for the site. The purpose of the initiation package is to review the proposed project in sufficient detail to determine to what extent the proposed action may affect any of the threatened, endangered, proposed, or sensitive species and designated or proposed critical habitats. The initiation package will be prepared in accordance with legal requirements set forth under regulations implementing Section 7 of the Endangered Species Act (50 CFR 402; 16 U.S.C. 1536 (c)) (USFWS, 2007).

Pursuant to Section 401 of the Clean Water Act, projects that require a Corps permit for discharge of dredge or fill material must obtain a water quality certification or a waiver that confirms a project complies with state water quality standards before the Corps permit is valid. State water quality is regulated/administered by the State Water Resources Control Board and its nine Regional Water Quality Control Boards (RWQCB). The state also maintains independent regulatory authority over the placement of waste, including fill, into waters of the State under the Porter-Cologne Act.

Refer to the Mitigation Measures in the Biological Resources section for information on obtaining the required permits.

b) Less than significant impact. All water required for project construction activities (i.e., dust control during site grading) and landscape irrigation will be obtained from the City water system, which uses groundwater for municipal water supply. The project would not include large subsurface features or wells and would consequently not likely affect the direction or rate of flow of groundwater. Groundwater levels have been fairly stable in Winters, even with the highest historic pumping levels. Short-term revegetation irrigation would constitute the largest use of water on the site (City of Winters, 2005).

Groundwater will not be significantly impacted during construction, because only minimal surface grading will be required to construct the park, and impervious surfaces will be relatively small in size and therefore, would not substantially affect groundwater recharge.

c-d) Less than significant impact. As mentioned in Section VIII(b) above, only minimal surface grading will be required to construct the park. The only impervious surfaces are

associated with possible special needs accessible parking areas and will be relatively small in size and will not substantially affect drainage patterns.

The greatest potential impacts to water quality will be the removal of the percolation dam, realignment of the stream channel and implementing channel stability measures (e.g., constructing weirs). The proposed creek realignment will narrow most of the creek to approximately 10 m (30 ft) wide, with meanders and pools ranging from 40 to 73 m (130 to 240 ft) apart. For the most part, the new creek bed will be shallower than what it is now. Wide flood plains, or terraces, will fan out from the creek banks for 10 to 30 m (30 to 100 ft) on both sides of the creek. Where feasible, the creek banks will be extended, making the slopes less steep. These changes will return the creek to a dimension that reflects a more natural width and meander, similar to the creek above and below this stretch, and set up conditions that can be naturally sustaining. The wide flood plain will allow the creek to move within its banks, make it possible to restore the native vegetation, and open the park to the community.

The removal of the percolation dam foundation will allow for the lateral, and to a lesser degree, vertical movement of the channel. The current streambed gradient will be maintained through a series of w-weirs. These gradient controls should eliminate any potential of undermining upstream structures, such as the railroad bridge, without causing flood cross-section restriction. The existing w-weirs on Putah Creek, and its tributary Dry Creek, have had significantly positive effects, such as creating stream structure, improving dissolved oxygen and maintaining grade.

By moving the portions of the new, narrower creek channel to the center of the banks, there will be physical room for the creek to develop its own meander, especially in the widest section, where the old aeration ponds are now. This proposed floodplain terrace is approximately 100 m (300 ft) wide. Based on future water flows and revegetation, the creek would then be able to change its own course.

These impacts however, will be temporary because the overall goal of the project is to restore the quality and availability of habitat along the creek, remove invasive weed species, and make available suitable spawning sized gravel for salmon. The revegetation program is designed to protect the soils from substantial erosion and siltation. In essence, the project itself is mitigating the temporary impacts to the water quality by enhancing and contributing to the long-term health of the watershed.

The project also tends to follow the City's General Plan Policy Document (1994), specifically implementing General Plan Policies VI.D.5. This policy states that modifications to the creek or creek channels and other wetland features (e.g., bridge crossing, flood control improvements, or

culverting) shall be designed to minimize disturbance to areas of dense riparian and marshlands cover. Any proposed channel modifications shall be coordinated with representatives of the CDFG and USACE to ensure that the concerns and requirements of both agencies can be easily incorporated into specific development plans during the initial phase of project design.

e) **No impact.** Refer to discussion items c and d.

f) **No impact.** Refer to discussion items a and c.

g) **No impact.** According to the FEMA Flood Insurance Rate Map for the city of Winters, Yolo County, the area located within the Putah Creek channel is designated as Flood Zone A, within the 100-year floodplain. The residential area is well above the creek channel and is shown as Zone X, outside of the 100-year floodplain.

h) **Less than significant impact.** The project does not intend to place structures that would impede or redirect flood flows within the 100-year flood hazard area. If temporary diversion dams are used, they will be removed before anadromous fish migration or the probability of floods. Any footings or other potential flow restrictions will be placed above the 100-year flood elevation.

i) **Less than significant impact.** The project site is located approximately 16 km (10 mi) east of the Monticello Dam on Lake Berryessa. Failure or overtopping of the dam could result in severe flooding of the Winters area and loss of life. However, this occurrence, which is addressed in the Yolo County Emergency Plan, is not considered a likely substantial risk, and the risk is not modified by this project.

j) **Less than significant impact.** No water bodies are nearby that could cause flooding by seiche or tsunami. There is the potential for minimal mudflow, after a significant rainfall event (a substantial amount of rain would have to fall in a very short amount of time) due to the relatively steep slopes along the creek channel. Implementation of the revegetation program will help stabilize banks (refer to Mitigation Measure AQ-1 and BR-6).

IX. LAND USE AND PLANNING	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

DISCUSSION

a) **No impact.** The majority of the project site is located in an undeveloped area. The proposed project is also consistent with the general plan land use designation for the project site.

b) **No impact.** The project does not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.

The City’s policies (General Plan Policy V.A.1, 11 and 13) are to require seven acres of developed parkland per 1000 residents, encourage the development of recreational facilities along Putah Creek near the Community Center, and emphasize the use of drought-tolerant and drought-resistant landscaping in the development of City parks. In planning recreation programs, the City shall promote the active involvement of all affected residents, including those with special needs, such as the physically disabled and the elderly (General Plan Policy V.C.1). The project will support these policies by developing parkland including recreational use of Putah Creek, planting drought-tolerant vegetation and creating special needs accessible recreational areas.

The project intends to support and follow the City’s policies for natural resources:

The City shall condition development approvals to minimize the discharge of sediment from grading into Putah Creek and Dry Creek. To this end, grading should be carried out during the dry months, when possible. Areas not being graded should be disturbed as little as possible and

construction and grading areas, as well as soil stockpiles should be covered or temporarily revegetated when left for long periods. Revegetation of slopes should be carried out immediately upon completion of grading. Also, temporary drainage structures and sedimentation basins must be installed to prevent sediment from entering and thereby degrading the quality of downstream surface waters, particularly Putah Creek (General Plan Policy VI.A.6).

The City shall promote the use of drought-tolerant and native plants, especially valley oaks, for landscaping roadsides, parks, schools, and private properties; and parks, drainage-detention areas, and golf course development shall incorporate areas of native vegetation and wildlife habitat. 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 (General Plan Policy VI.C. 7-10).

The City's General Plan Policy (VI.D.2-3) states that except for recreational trails and recreational uses developed along Putah Creek in the downtown area, the Putah Creek and Dry Creek corridors should be preserved as much as possible in their natural state. Public access and recreational facilities, such as trails, picnic areas, and other recreational developments, shall be sited to minimize on sensitive wildlife habitat or riparian vegetation. The City shall develop a program for habitat management within the Putah Creek and Dry Creek corridors consistent with the following principles:

- Trees and shrubs planted within the creek corridors shall be selected from a list of native plants approved by the City.
- Non-native trees and shrubs shall be removed from the creek corridors according to a long-term program approved by the City.
- New irrigation and planting within the dripline of existing native oaks shall be prohibited. Irrigated turf areas shall be placed only in areas where there are no mature native trees that could be damaged by changes in the environment, such as summer watering.

The project intends to only grade where necessary for the stream restoration phase and will implement a revegetation program immediately upon completion of grading. The project supports the restoration of riparian habitat and the enhancement of a nature park for recreational uses.

c) **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. The

County and Cities are in the process of developing such a document, but it is not complete. The City does have a Habitat Mitigation Program (Appendix C) however, there are no apparent conflicts with this program, and the project would support the restoration of riparian habitat.

X. MINERAL RESOURCES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

DISCUSSION

The California Division of Mines and Geology (now California Geologic Survey) and the State Mining and Geology Board are responsible for administering the mineral lands inventory process under the Surface Mining and Reclamation Act of 1975 (SMARA) (California Department of Conservation, 2008). Areas are classified on the basis of geologic factors, without regard to existing land use and land ownership. The areas are categorized into four Mineral Resource Zones (MRZs), and lands classified as MRZ-2 are of the greatest importance. Demonstrated mineral resources underlie such areas where geologic data indicate the presence of significant measured resources. The Mining and Geology Board designate MRZ-2 areas as “regionally significant” (CDC, 2008).

According to the City’s General Plan Background Report, sand and gravel extraction operations are occurring along Cache Creek approximately 10 miles to the north, and other places in Yolo County, however no mining or quarrying operations currently exist in the Winters area. Most of the area is classified as MRZ-1 by the California Division of Mines, which means that no significant mineral deposits are present. Land classified as MRZ-1 is not affected by state policies pertaining to the maintenance of access to regionally significant mineral deposits under the California Surface Mining and Reclamation Act of 1975.

a-b) **No impact.** As mentioned above, no mining or quarrying operations currently exist in the Winters area and no mineral resource zone or locally important mineral recovery site would be impacted by the proposed project. Furthermore, according to the Division of Oil, Gas, and Geothermal Resources, Map 616, no oil, gas, or geothermal resources are located on the project site or in the project vicinity. The proposed project would not result in the loss of any known mineral resources. The project site is not designated as a mineral resource zone or locally

important mineral recovery site. The proposed project would not result in the loss of any known mineral resources.

XI. NOISE	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
Would the project:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
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 expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

DISCUSSION

The project site is an undeveloped riparian area, and the existing noise setting is characterized as relatively quiet. The only consistent noise source is distant roadway traffic noise emanating from I-505 and State Route 128. Intermittent noise from traffic on local county roads, in addition to noise from outdoor activities at nearby land uses (e.g., Creekside Bar, operation of landscaping and agricultural equipment, and aircraft overflight) also contribute, to a lesser extent, to the existing noise environment.

The nearest existing noise-sensitive uses is a residential neighborhood, which is located adjacent to the northern site boundary. The majority of the rest of the area surrounding the project site consists of agricultural farmland and orchards.

According to the City's General Plan, a noise level of 60 A-weighted decibels (dBA) community noise equivalent level (CNEL) is considered normally acceptable for Outdoor Public Facilities, such as is proposed by the project (City of Winters, 1992). In addition, the General Plan has established exterior noise level limits of 50 dBA between 7:00 a.m. and 10:00 p.m. for parks and recreation facilities, residential, and rural uses, wherein this noise level is not to be exceeded continuously during any five-minute period. If the noise level varies above and below the limit, the limit shall not be exceeded more than one time interval in any five-minute period. Exterior noise levels higher than the applicable limit plus 15 dBA are prohibited at all times. The applicable exterior nighttime (10:00 p.m. to 7:00 a.m.) noise performance standard for recreational and residential uses is 45 dBA, while that for rural land uses is 40 dBA (City of Winters, 1992).

The interior noise limit for residential structures is 45 dBA (City of Winters, 1992). The City's Zoning Code contains a provision, which limits noise levels from construction activities to 90 dB, as measured at 50 feet from a single piece of equipment, provided that activities are limited to the hours of 7:00 a.m. to 7:00 p.m. on weekdays. Activities on weekends and holidays are subject to the applicable standards at the receiving land use. The City Code also prohibits vibration levels above the threshold of perception for an individual at or beyond the property boundary of the source if on private property, or at 150 feet from the source if on a public space or public right-of-way (City of Winters, 2001). According to the Federal Transportation Administration (FTA), the normal vibration threshold with respect to human response is 80 vibration decibels [(VdB) referenced to 1 microinch per second ($\mu\text{in}/\text{sec}$) and based on the root mean square (RMS) velocity amplitude] (FTA, 2006).

a) **Less than significant with mitigation incorporated.** The project will result in the generation of short-term noise impacts associated with construction and maintenance. These impacts are discussed below, and mitigation measures are recommended, as necessary, to reduce the degree of potential impacts.

The proposed project would include the demolition of the percolation dam and construction of the trail system. Construction activities would include site grading, clearing, vegetation removal, excavation, blasting and jack hammering associated with the site preparation phase and percolation dam removal; in addition to other miscellaneous activities.

According to the U.S. EPA, the noise levels of primary concern are typically associated with the site preparation phase because of the on-site equipment used for clearing, grading, excavation, and demolition (U.S. EPA, 1971). Depending on the operations conducted, individual equipment noise levels can range from 79 to 91 dBA at 50 feet, as indicated in Table 3.

The exact number and type of on-site equipment required for the construction activities is not known at this time, but would be anticipated to include dozers, trucks, loaders, blasting equipment, excavators, and graders. The simultaneous operation of such on-site construction equipment could potentially result in worst-case noise levels of approximately 91 dBA at 50 feet from the project site, without feasible noise control (e.g., mufflers) in place.

Based on these equipment noise levels and assuming a noise attenuation rate of 6 dBA per doubling of distance from the source to receptor, exterior noise levels at nearby proposed sensitive receptors located at a nominal 30 m (100 ft) from the project construction areas could potentially exceed 85 dBA without noise control. Consequently, the temporary construction noise associated with on-site equipment could potentially expose sensitive receptors to noise levels in excess of the applicable City noise standards, and/or result in a noticeable increase (5 dBA) in ambient noise levels.

Table 3. Typical Equipment Noise Levels.

Type of Equipment	Noise Level in dBA at 50 feet	
	Without Feasible Noise Control	With Feasible Noise Control ¹
Loader	79	75
Dozer or tractor	80	75
Crane	83	75
Scraper	88	80
Excavator	88	75
Compactor	82	75
Backhoe	85	75
Grader	85	75
Generator	78	75
Truck	91	75

¹U.S. EPA, 1971. Feasible noise control includes the use of intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturers' specifications.

Implementation of the following mitigation measure would reduce potential impacts from construction noise to a less-than-significant level. Implementation of the required mitigation measure would not only avoid noise generation during the noise-sensitive nighttime hours, but also achieve consistency with the noise ordinance construction exemption criteria.

Mitigation Measure NOISE-1:

All construction activities shall be limited to the daytime hours between 7:00 a.m. and 7:00 p.m. on weekdays, and all construction equipment shall be properly fitted with mufflers and maintained in good working order.

Successful implementation of mitigation measure NOISE-1 would reduce noise levels at the nearest existing sensitive receptors (residential site approximately 100 feet to the north) to a maximum of 69 dBA. Limitation of construction operations to the less noise-sensitive hours of the day/week would prevent potential sleep disruption, and would be consistent with the provisions of the noise ordinance.

Mitigation Measure NOISE-2:

Park hours of operation, and landscaping and maintenance activities, shall be limited to the daytime hours between 7:00 a.m. and 10:00 p.m.

b) **Less than significant impact.** Construction activities have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and operations involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Table 4 displays vibration levels for typical construction equipment.

As discussed above, specific on-site construction equipment required for park construction is not known at this time, but would be expected to include dozers, trucks, loaders, blasting equipment, excavators, and graders. According to FTA and as shown in Table 4, vibration levels associated with the use of large bulldozers are 0.089 in/sec peak particle velocity (PPV) and 87 VdB (referenced to 1 μ in/sec and based on the RMS velocity amplitude) at 25 feet. Using FTA's recommended procedure for applying a propagation adjustment to these reference levels, predicted worst-case vibration levels of approximately 0.01 in/sec PPV and 75 VdB at the closest proposed noise-sensitive receptor to construction operations (approximately 100 feet away) could occur from use of large dozers. These vibration levels would not exceed Caltrans' recommended standard of 0.2 in/sec PPV (Caltrans 2002) with respect to the prevention of structural damage for normal buildings or FTA's vibration standard of 80 VdB (FTA, 2006) with respect to human annoyance for residential uses. The closest existing sensitive use is approximately 100 feet from the edge of the project site, and would be even less affected by any vibration. Finally, the long-term operation of the proposed project (i.e., use and maintenance of the proposed park facilities) would not include any substantial vibration sources.

Table 4. Typical Construction-Equipment Vibration Levels.

Equipment	PPV at 25 feet (in/sec) ¹	Approximate Lv at 25 feet ²
Large bulldozer	0.089	87
Trucks	0.076	76
Jackhammer	0.035	79
Small bulldozer	0.003	58

FTA, 2006. ¹ in/sec = inches per second; PPV = peak particle velocity. ² Lv = velocity level in decibels (VdB) referenced to 1 microinch per second (μ in/sec) and based on the root mean square (RMS) velocity amplitude.

Thus, implementation of the project would not result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

- c) **Less than significant with mitigation incorporated.** Refer to discussion in item a above.
- d) **Less than significant with mitigation incorporated.** Refer to discussion in item a above.
- e) **No impact.** The project site is not located within an airport land use plan, and is located over 2 miles from the nearest airport. The closest airport to the project site is the Yolo County Airport (FAA Site 01488), which is roughly 7 miles from the project site.

In addition there are no residences proposed as part of the project. Therefore, the project would not expose sensitive receptors to excessive air traffic noise.

- f) **No impact.** The project site is not located within two miles of a private airstrip. In addition there are no residences proposed as part of the project. Therefore, the project would not expose sensitive receptors to excessive air traffic noise.

XII. POPULATION AND HOUSING	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

DISCUSSION

a) **No impact.** The project does not intend to propose or develop new homes and business, or extend roads or other infrastructure.

b) **No impact.** No housing exists on-site. The project would not involve any displacement of housing or of people.

c) **No impact.** No housing exists on-site. The project would not involve any displacement of housing or of people.

XIII. PUBLIC SERVICES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
Would the project:				
Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

DISCUSSION

a) **Less than significant with mitigation incorporated.** The City of Winters Fire Department provides primary fire protection service to the project site. This increase is expected to be negligible especially since visitors to the park are already served by emergency response.

From a technical standpoint, the proposed project will not have a significant effect on the provision of service, since it is not increasing the population served by the department. However, the recreational development of the site will have an incremental effect on fire protection services by adding structural improvements. It is imperative that fire fighting equipment and personnel have access to all areas on the site. Accordingly, the following mitigation measure is required:

Mitigation Measure PUB-1:

Emergency vehicle access, and fire flow, shall be in accordance with requirements of the City of Winters Fire Department.

b) **Less than significant impact.** The City of Winters Police Department provides primary police protection service. Since the park will not add to the resident population served by the

Police Department, the project will not significantly increase demand for police services. The eventual construction of park displays, the bridge, and other improvements will likely contain features that may be subject to vandalism or theft. These factors may result in a minor incremental increase in the Police Department's workload. Conversely, the project will improve the ability of police and sheriff observation of the area and access to the site, and increase use, which is typically associated with a reduction in crime.

c) **No impact.** The project site does not contain any residential services; therefore, it is not likely to contribute to the student population.

d) **No impact.** The project will not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities. It will not result in the need for new or physically altered governmental facilities.

e) **No impact.** The project does not involve any activity that would have a direct, or reasonably foreseeable indirect impact on libraries, museums, or other services not explicitly reviewed in this document.

XIV. RECREATION	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
Would the project:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>

DISCUSSION

a) **No impact.** Primary recreational uses of the site include kayak/canoe trips, fishing, nature walks, birding, and swimming. The proposed project will improve access and safety for those uses, as well as enhance the area for use by park visitors.

b) **Less than significant impact.** The project does intend to expand the recreational facilities of the site by constructing a series of trails. However, the addition of trails in this area would benefit the environment by allowing access to establish native vegetation in the floodplain and through the removal of non-native invasive weeds.

XV. TRANSPORTATION/TRAFFIC		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
Would the project:					
a)	Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b)	Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d)	Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e)	Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f)	Result in inadequate parking capacity?	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
g)	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

DISCUSSION

a) **Less than significant impact.** The project is not intended to increase traffic. The site is considered a local feature and there will be no significant additional parking created.

b) **No impact.** The project will not exceed a level of service standard established by the City or Solano County for designated roads or highways.

c) **No impact.** The project site is not located near an airport and it does not include any improvements to airports or change in air traffic patterns.

d) **No impact.** Streets in the vicinity have been designed to safely and efficiently accommodate all proposed local land uses, including the existing park. Future developments beginning

construction in proximity to the project site have included mitigation measures that will alleviate potential impacts caused by their associated increased trips in the area. There are no incompatible uses in the vicinity that would cause additional traffic hazards.

e) **No impact.** Currently there is limited access for emergency vehicles into the park area. The planned roadway connections and extensions in the project vicinity would have beneficial effects for emergency access.

f) **Less than significant with mitigation incorporated.** The draft Plan has identified three possible trailheads on Putah Creek Road. The first is at the trestle bridge. When the new car bridge is built, a portion of Putah Creek Road will be realigned, and it appears that with this realignment is it possible to provide limited vehicle parking up to (five vehicles) near this bike trail. The second location, and the most problematic, is the proposed main southern trailhead entry into the Putah Creek Flats section. Currently, there is a widened area that can accommodate up to 11 parallel parking spaces along the road edge. This would also be the likely area where school buses for field trips would unload, but not park. The third location for parking is at the east end of the park, adjacent to I-505. There is also a long, wide area that can accommodate up to eight vehicles. This is also a possible location for the future pedestrian bridge. Given the limited space, it is critical that the Putah Creek Road width be resolved before this access route and parking are developed. If additional land is acquired as part of relocating Putah Creek Road, then parking locations and numbers can be better arranged to meet specific needs.

Mitigation Measure TT-1:

Roadway width and ingress-egress standards for access must be developed and implemented with Solano Transportation Authority before these routes can be developed.

g) **No impact.** The project would not conflict with adopted policies, plans, or programs supporting alternative transportation. The park will be accessible via pedestrian and bicycle route connections.

XVI. UTILITIES AND SERVICE SYSTEMS		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
Would the project:					
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
e)	Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

DISCUSSION

a) **Less than significant impact.** The proposed project restroom will generate minimal amounts of wastewater in need of treatment that can be accommodated by existing facilities. The restroom design would most likely involve either permanent installation on the upper bank or a temporary, seasonal installation on the higher terrace. The park use is not expected to result in unusual wastewater exceeding wastewater treatment requirements of CVRWQCB.

b) **No impact.** The project does not propose to require or intend to result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities.

c) **No impact.** The project does not propose to require or intend to result in the construction of new storm water drainage facilities or the expansion of existing facilities.

d) **Less than significant impact.** The project does not require any water supplies, other than for short-term vegetation irrigation and that which is necessary for any proposed restrooms and drinking fountains.

e) **Less than significant impact.** No wastewater treatment is required as a result of this project. Wastewater produced from any restrooms is likely to be pumped or vacuumed and transported off-site to the Yolo County Central Landfill.

f) **Less than significant impact.** The project would potentially generate limited amounts of solid waste from visitors. Solid waste from the project site would be collected by the City and disposed of at the Yolo County Central Landfill, a 722-acre facility. The landfill has a capacity of 11 million tons with capacity for planned growth through 2025.

g) **No impact.** The California Integrated Solid Waste Act of 1989 (Assembly Bill 939) mandates requirements regarding solid waste management, reduction, and recycling. The City is required to comply with these mandates. Therefore, the proposed project would comply with all relevant federal, state, and local statutes and regulations related to solid waste.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

NOTE: If there are significant environmental impacts which cannot be mitigated and no feasible project alternatives are available, then complete the mandatory findings of significance and attach to this initial study as an appendix.

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

DISCUSSION

a) **Less than significant impact.** The proposed project, as mitigated, will have temporary effects on the riparian forest. There may be temporary displacement of some animal species, but no take of any special status species or habitat will occur. The project will remove the Winters percolation dam, allowing a free-flowing creek, and improving movement of aquatic organisms. The floodplain will be revegetated with native species and will actually increase the amount of available habitat for terrestrial species and eliminate the potential as a fish passage barrier, thereby reversing any temporary construction effects of the project (refer to all Mitigation Measures in the Biological Resources section).

b) **No impact.** The Lower Putah Creek Coordinating Committee has several planned projects for 2008 and continuous ongoing creek maintenance activities. The I-505 Project proposes to repair damage to native vegetation caused by off-road vehicles and also add gravel to the creek. The

proposed project integrates those activities to ensure more effective implementation and the reduction of potential direct and indirect impacts.

c) **No impact.** The project does not have environmental effects that will cause substantial adverse effects on humans, either directly or indirectly. All potentially significant environmental effects have been mitigated.

**WINTERS PUTAH CREEK NATURE PARK / FLOODPLAIN RESTORATION AND
RECREATIONAL ACCESS PROJECT
MITIGATION, REPORTING AND MONITORING PLAN**

The California Environmental Quality Act requires public agencies to report on and monitor measures adopted as part of the environmental review process (Section 21081.6, Public Resources Code [PRC]; Section 15097 of the CEQA Guidelines). This Mitigation Monitoring Plan (MMP) is designed to ensure that the measures identified in the Mitigated Negative Declaration are fully implemented. The MMP describes the actions that must take place as a part of each measure, the timing of these actions, the entity responsible for implementation, and the agency responsible for enforcing each action.

The City has the ultimate responsibility to oversee implementation of this Plan. The Community Development Director serves as the Project Monitor responsible for assigning monitoring actions to responsible agencies. As required by Section 21081.6 of the PRC, the Winters Community Development Department is the “custodian of documents and other material” which constitute the “record of proceedings” upon which a decision to approve the proposed project was based. Inquiries should be directed to:

Community Development Director
City of Winters
530-795-4910 x 112

The location of this information is:

Winters City Hall
Community Development Department
318 First Street
Winters, California 95694

In order to assist implementation of the mitigation measures, the MMP includes the following information:

Mitigation Measure: The mitigation measures are taken verbatim from the Negative Declaration.

Timing/Milestone: This section specifies the point by which the measure must be completed. Each action must take place during or prior to some part of the project development or approval.

Responsibility for Oversight: The City has responsibility for implementation of most mitigation measures. This section indicates which entity will oversee implementation of the measure, conduct the actual monitoring and reporting, and take corrective actions when a measure has not been properly implemented.

Implementation of Mitigation Measure: This section identifies how actions will be implemented and verified.

Responsibility for Implementation: This section identifies the entity that will undertake the required action.

Check off Date/Initials: This verifies that each mitigation measure has been implemented.

Pursuant to Section 18.04.090 of the Winters Municipal Code related to the required CEQA Mitigation Monitoring Plan, sign-off on the completion of each mitigation measure in the adopted Mitigation Monitoring Plan (MMP) shall constitute the required "Program Completion Certificate".

The Mitigation Monitoring Plan shall be adopted pursuant to the requirements of Section 18.04.060.A and implemented pursuant to Section 18.04.070.A - E, of the Winters Municipal Code.

The applicant shall fund the costs of implementing the MMP including the payment of fees specified in Section 18.04.100.A – D of the Winters Municipal Code.

Pursuant to Section 18.04.050 of the Winters Municipal Code related to the required CEQA Mitigation Monitoring Plan (MMP), the following items shall apply:

- The adopted MMP shall run with the real property that is the subject of the project and successive owners, heirs, and assigns of this real property are bound to comply with all of the requirements of the adopted Plan.
- Prior to any lease, sale, transfer, or conveyance of any portion of the real property that is the subject of the project, the applicant shall provide a copy of the adopted Plan to the prospective lessee, buyer, transferee, or one to whom the conveyance is made.
- The responsibilities of the applicant and of the City, and whether any professional expertise is required for completion or evaluation of any part of the Plan, shall be as specified in the Plan and as determined by the Community Development Director or designated Project Monitor in the course of administering the MMP.
- Cost estimates for the implementation of this Plan and satisfaction of each measure are not known or available, but shall be developed by the applicant in the course of implementing each mitigation measure.
- Civil remedies and criminal penalties for noncompliance with the adopted MMP are as specified in Sections 18.04.110 and 18.04.120 of the Winters Municipal Code.

MITIGATION, REPORTING, AND MONITORING PROGRAM

Mitigation Measure	Summary of Measure	Timing/Milestone	Responsibility for Oversight	Implementation of Mitigation Measure	Responsibility for Implementation	Checkoff Date/Initials
Mitigation Measure AQ-1	<p>i. <i>To the extent that equipment and technology is available, the contractor shall use State of California (CARB) certified catalyst and filtration technologies.</i></p> <p>ii. <i>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 (AQCMM). 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 AQCMM certifies that compliance is not feasible.</i></p> <p>iii. <i>Project sequencing is specifically designed to reduce air impacts from the operation of the heavy equipment. Wait times for</i></p>	Prior to and during grading, and during appropriate period of construction.	Yolo-Solano Air Quality Management District	The Project Proponent shall satisfy the terms of the measure. Evidence of this shall be provided to the City.	Project Proponent	

Mitigation Measure	Summary of Measure	Timing/Milestone	Responsibility for Oversight	Implementation of Mitigation Measure	Responsibility for Implementation	Checkoff Date/Initials
Mitigation Measure AQ-1 (cont'd)	<i>dump trucks and idle time shall be minimized to 5 minutes or less.</i>					
	<p><i>iv. 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.</i></p> <p><i>v. All bare ground will have ground cover replaced as soon as practicable.</i></p> <p><i>vi. Heavy-duty diesel equipment will be maintained in optimum running condition.</i></p>					
Mitigation Measure BR-1	<i>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</i>	Not more than 30 days prior to commencement of grading or any physical modification of undeveloped portions of the site.	City of Winters	The Project Proponent shall coordinate with the appropriate agency(s) to satisfy the terms of the measure. Evidence of this shall be provided to the City. The survey shall	Project Proponent	

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Mitigation Measure BR-1 (cont'd)	<i>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.</i>			be performed by a qualified biologist in accordance with accepted protocols.		
Mitigation Measure BR-2	<i>If construction occurs during the breeding season (March-September 15), the Project Proponent 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.</i> <i>If an active nest used by a</i>	Not more than 30 days prior to commencement of grading or any physical modification of the site.	City of Winters	The Project Proponent shall coordinate with the appropriate agency(s) to satisfy the terms of the measure. Evidence of this shall be provided to the City. The survey shall be performed by a qualified biologist in accordance with accepted protocols.	Project Proponent	

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Mitigation Measure BR-2 (cont'd)	<p><i>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 (1/4 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</i></p>					

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Mitigation Measure BR-2 (cont'd)	<i>facility maintenance activities within 0.4 km (¼ mi) of an active nest should not be prohibited (CDFG, 1994b).</i>					
Mitigation Measure BR-3	<i>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</i>	Not more than 30 days prior to commencement of grading or any physical modification of the site.	City of Winters	The Project Proponent shall coordinate with the appropriate agency(s) to satisfy the terms of the measure. Evidence of this shall be provided to the City. The survey shall be performed by a qualified botanist in accordance with accepted protocols.	Project Proponent	

Mitigation Measure	Summary of Measure	Timing/Milestone	Responsibility for Oversight	Implementation of Mitigation Measure	Responsibility for Implementation	Checkoff Date/Initials
Mitigation Measure BR-3 (cont'd)	<i>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).</i>					
Mitigation Measure BR-4	<i>A pre-construction survey will be completed to ensure that Baker's navarretia is identified and if it does occur, it will be marked and avoided, and if necessary removed, with CDFG permission.</i>	Not more than 30 days prior to commencement of grading or any physical modification of the site.	City of Winters	The Project Proponent shall coordinate with the appropriate agency(s) to satisfy the terms of the measure. Evidence of this shall be provided to the City. The survey shall be performed by a qualified botanist in accordance with accepted protocols.	Project Proponent	
Mitigation Measure BR-5	<i>Prior to any grading activities onsite, the project proponent shall:</i>	Prior to commencement of grading or any physical	City of Winters	The Project Proponent shall coordinate with the appropriate agency(s) to satisfy the	Project Proponent	

Mitigation Measure	Summary of Measure	Timing/Milestone	Responsibility for Oversight	Implementation of Mitigation Measure	Responsibility for Implementation	Checkoff Date/Initials
Mitigation Measure BR-5 (cont'd)	<p><i>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.</i></p> <p><i>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.</i></p>	modification of the site.		terms of the measure. Evidence of this shall be provided to the City. The survey and monitoring shall be performed by a qualified biologist in accordance with accepted protocols.		
Mitigation Measure BR-6	<p><i>Prior to the commencement of grading or construction activities onsite, the Project Proponent shall comply with all of the following:</i></p> <p><i>1.) Obtain and comply with a California Department of</i></p>	Prior to commencement of grading or any physical modification of the site.	City of Winters	The Project Proponent shall coordinate with the appropriate agency(s) to satisfy the terms of the measure. Evidence of this shall be provided to the City.	Project Proponent	

Mitigation Measure	Summary of Measure	Timing/Milestone	Responsibility for Oversight	Implementation of Mitigation Measure	Responsibility for Implementation	Checkoff Date/Initials
Mitigation Measure BR-6 (cont'd)	<p><i>Fish & Game, Streambed Alteration Agreement in accordance with Sections 1600-1616 of the California Fish & Game Code, as required.</i></p> <p><i>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.</i></p> <p><i>3.) Establish native grass and accelerate riparian transplanting for cover.</i></p>					
Mitigation Measure BR-7	<p><i>Prior to the commencement of grading or construction activities onsite, the Project Proponent shall comply with all of the following:</i></p> <p><i>1). Obtain an Individual USACE 404(d) permit.</i></p> <p><i>2). Implement a mitigation plan for replacement (creation, restoration, and</i></p>	<p>Prior to commencement of grading or any physical modification of the site.</p>	<p>City of Winters</p>	<p>The Project Proponent shall coordinate with the appropriate agency(s) to satisfy the terms of the measure. Evidence of this shall be provided to the City.</p>	<p>Project Proponent</p>	

Mitigation Measure	Summary of Measure	Timing/Milestone	Responsibility for Oversight	Implementation of Mitigation Measure	Responsibility for Implementation	Checkoff Date/Initials
Mitigation Measure BR-7 (cont'd)	<i>preservation) of impacted seasonal wetlands within the floodplain, subject to USACE approval.</i>					
Mitigation Measure CR-1	<i>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. 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.</i>	During site development	City of Winters; Yolo County Coroner; State Native American Heritage	If human remains are found, all grading and activity in the immediate area shall cease, the find shall be left in place, and the Project Proponent shall immediately notify the Yolo County Coroner at (530) 666-8282, the Community Development Department at (530) 795-4910 x 114, to assess the find and determine how to proceed. If the remains are found to be of Native American descent, the Native American Heritage Commission shall also be notified at (916) 653-4082, pursuant to the terms of the measure.	Project Proponent	

Mitigation Measure	Summary of Measure	Timing/Milestone	Responsibility for Oversight	Implementation of Mitigation Measure	Responsibility for Implementation	Checkoff Date/Initials
Mitigation Measure CR-1 (cont'd)	<p><i>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.</i></p>					

Mitigation Measure	Summary of Measure	Timing/Milestone	Responsibility for Oversight	Implementation of Mitigation Measure	Responsibility for Implementation	Checkoff Date/Initials
Mitigation Measure HHM-1	<p>i. During construction, operation, and maintenance of the project, all equipment operating with an internal combustion engine shall be equipped with federally approved spark arresters. Spark arresters are not required on trucks, buses, and passenger vehicles (excluding motorcycles) that are equipped with an unaltered muffler or on diesel engines equipped with a turbocharger.</p> <p>ii. Operating or using any internal combustion engine, on any timber, brush, or grass covered land, including trails and roads traversing such land, without a spark arrester, maintained in effective working order, meeting either (I) Department of Agriculture, Forest Service standard 5100, "SPARK ARRESTERS FOR INTERNAL COMBUSTION ENGINES," (current edition); or (II) the Society of Automotive Engineers (SAE) recommended Practices J335,</p>	During construction, operation and maintenance of the project and park.	City of Winters	The Project Proponent shall satisfy the terms of the measure. Evidence of this shall be provided to the City.	Project Proponent	

Mitigation Measure	Summary of Measure	Timing/Milestone	Responsibility for Oversight	Implementation of Mitigation Measure	Responsibility for Implementation	Checkoff Date/Initials
Mitigation Measure HHM-1 (cont'd)	<p>"MULTIPOSITION SMALL ENGINE EXHAUST SYSTEM FIRE IGNITION SUPPRESSION," (current revision) and J350, 36 CFR 261.52(j), is prohibited.</p> <p>iii. Passenger carrying vehicles, pickups, and medium and large highway trucks (80,000 Gross Vehicle Weight) will be equipped with a factory designed muffler system that is specified for the make and model of the respective vehicle/truck or with a muffler system that is equivalent to or exceeds factory specifications.</p> <p>iv. Exhaust systems shall be properly installed and continually maintained in serviceable condition.</p> <p>v. While in use, each internal combustion engine including tractors, trucks, yarders, loaders, welders, generators, stationary engines, or comparable powered</p>					

Mitigation Measure	Summary of Measure	Timing/Milestone	Responsibility for Oversight	Implementation of Mitigation Measure	Responsibility for Implementation	Checkoff Date/Initials
Mitigation Measure HHM-1 (cont'd)	<p>equipment will be provided with at least the following:</p> <ul style="list-style-type: none"> a. One fire extinguisher, at least 5#ABC with an Underwriters Laboratory (UL) rating of 3A 40BC, or greater. b. One shovel, sharp, size O or larger, roundpointed with an overall length of at least 48 inches. c. One axe, sharp, double bit 31/2#, or one sharp pulaski. d. Extinguishers, shovels, axes, and pulaskis shall be mounted so as to be readily available from the ground. All tools shall be maintained in a serviceable condition. 					
Mitigation Measure NOISE-1	<p><i>All construction activities shall be limited to the daytime hours between 7:00 a.m. and 7:00 p.m. on weekdays, and all construction equipment shall be properly fitted with mufflers and maintained in good working order.</i></p>	<p>Prior to commencement of grading or any physical modification of the site.</p>	<p>City of Winters</p>	<p>The Project Proponent shall satisfy the terms of the measure. Recommendations of the noise analysis to comply with measure shall be implemented by the Project Proponent.</p>	<p>Project Proponent</p>	

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Mitigation Measure NOISE-1 (cont'd)	<i>Successful implementation of mitigation measure NOISE-1 would reduce noise levels at the nearest existing sensitive receptors (residential site approximately 100 feet to the north) to a maximum of 69 dBA. Limitation of construction operations to the less noise-sensitive hours of the day/week would prevent potential sleep disruption, and would be consistent with the provisions of the noise ordinance.</i>					
Mitigation Measure NOISE-2	<i>Construction hours of operation and landscaping and maintenance activities shall be limited to the daytime hours between 7:00 a.m. and 10:00 p.m.</i>	During construction, operation and maintenance of the project and park.	City of Winters	The Project Proponent shall satisfy the terms of the measure. Evidence of this shall be provided to the City.	Project Proponent	
Mitigation Measure PUB-1	<i>Emergency vehicle access, and fire flow, shall be in accordance with requirements of the City of Winters Fire Department.</i>	Initial consultation prior to plan development.	City of Winters	The Project Proponent shall satisfy the terms of the measure. Evidence of this shall be provided to the City.	Project Proponent	

Mitigation Measure	Summary of Measure	Timing/Milestone	Responsibility for Oversight	Implementation of Mitigation Measure	Responsibility for Implementation	Checkoff Date/Initials
Mitigation Measure TT-1	<i>Roadway width and ingress-egress standards for access must be developed and implemented with Solano Transportation Authority before these routes can be developed.</i>	As specified by the City Engineer as determined by the project schedule.	City of Winters	The Project Proponent shall satisfy the terms of the measure. Evidence of this shall be provided to the City.	Project Proponent	

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APPENDIX A
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 1¹. 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.

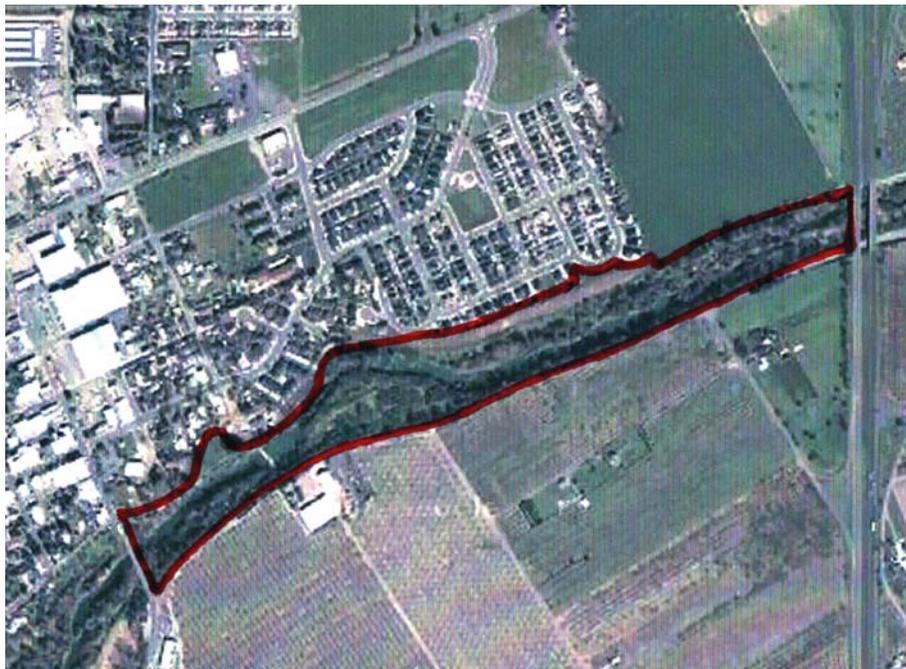


Figure 1: Extent of Winters Putah Creek Nature Park

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.

¹ Some of the inscribed land in Figure 1 is under private ownership.

2 Current Plant Species

2.1 Natives²

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.

² 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.

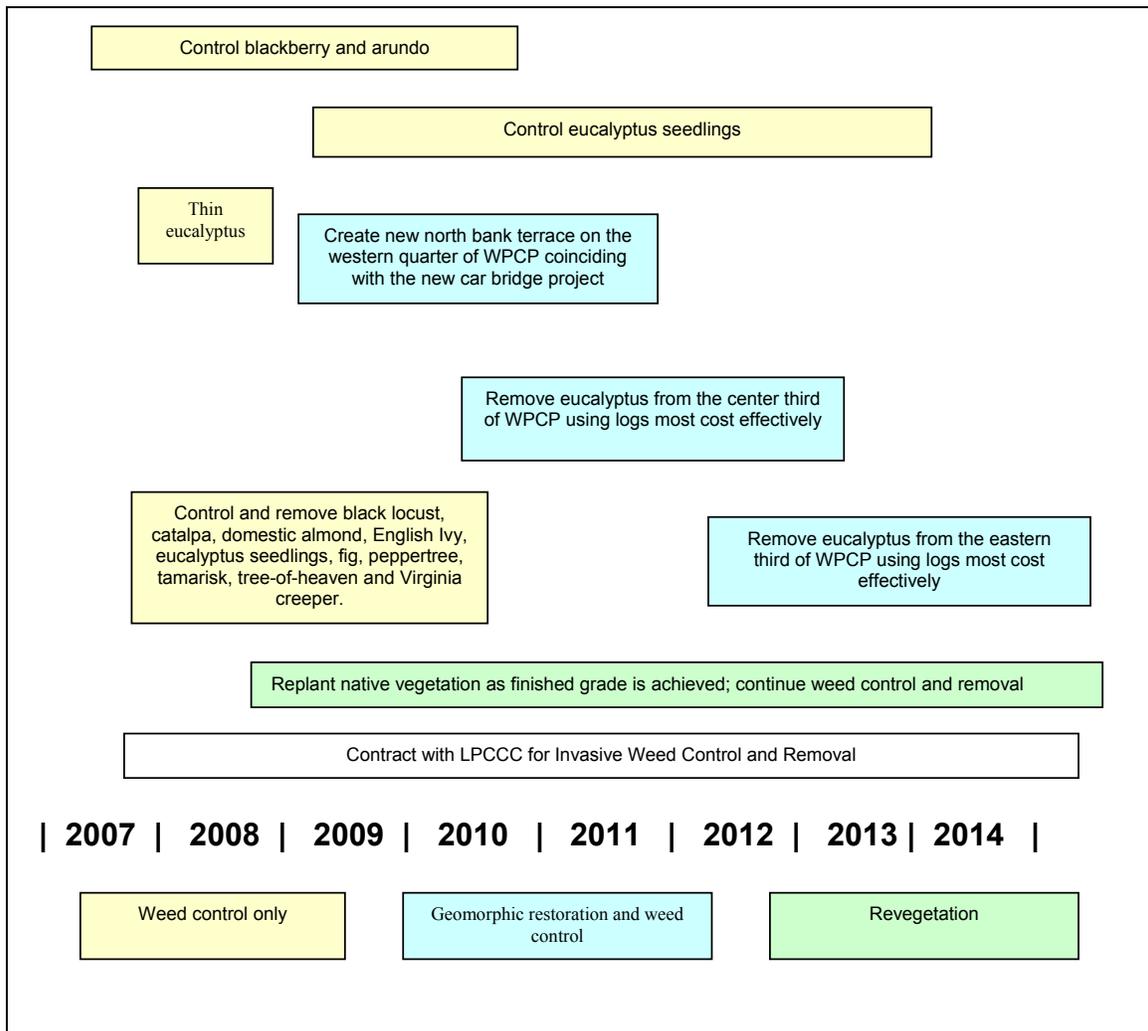


Figure 2: Proposed Schedule & Tasks for Vegetation Removal³

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.

³ 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 issues⁴. 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.

⁴ 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 marbeling 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 f 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.

APPENDIX B
Winters Putah Creek Nature Park Accepted Conceptual Master Plan

PUTAH CREEK NATURE PARK MASTER PLAN

March 2008



Prepared for the City of Winters



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PUTAH CREEK NATURE PARK DRAFT MASTER PLAN

Winters, California

March 18, 2008

1. INTRODUCTION

Putah Creek Nature Park is a rare community asset—a relatively undeveloped mile stretch of creek that, for the most part, is publicly owned. It is a valuable resource for fostering environmental stewardship and love of the outdoors. In the 1990s, litigation over flows in Putah Creek culminated in formation of the Lower Putah Creek Coordinating Committee (LPCCC), hiring of a permanent Streamkeeper and establishment of a permanent fund to monitor fish and wildlife, manage vegetation and seek grant funds for further improvement of the creek channel. In 1995, the City of Winters adopted the first Master Plan for Winters Putah Creek Nature Park, emphasizing recreational access and invasive weed control. In 2002, the LPCCC obtained a grant to assess the physical and biological condition of Putah Creek. The LPCCC subsequently held a series of public meetings with creek-wide stakeholders to review the assessments and develop a Watershed Management Action Plan identifying priority actions supported by the community. Putah Creek stakeholders identified restoration of Winters Putah Creek Park as the highest priority. The Watershed Management Action Plan identified restoration of natural channel form and function as a fundamental step toward sustainable fish and wildlife habitat. In Winters Putah Creek Park, the natural form of the channel was altered for gravel extraction, floodwater conveyance and construction of aeration ponds. Invasive weeds flourished with these disturbances and further impacted channel form by trapping sediments and elevating the floodplains, increasing the distance to groundwater and diminishing the survival of native plant seedlings. A concrete percolation dam further altered the form and function of the channel. The current channel is overly wide and deep, with an excess of open water and lack of floodplains (beaches) that limit the continuity of public access and diminish the land area available for wildlife habitat. Water quality is diminished by warming due to the compound effect of excessive exposure to solar radiation (due to excessive width) and slow flows (due to excessive cross sectional area of open water). These fundamental issues require narrowing and realignment of the creek channel, removal of the percolation dam, construction of new floodplains and grading of existing floodplains. Since none of these measures were included in the original Winters Putah Creek Park Master Plan, the City of Winters commissioned this update to the original plan to incorporate greater opportunities for public access and sustainable fish and wildlife habitat by restoring natural channel form and function.

The 2008 Master Plan is a conceptual document that assumes the creek will be realigned, bank slopes are modified, upper and lower loop trails link both sides of the creek, the percolation dam is removed, invasive plant species are removed, and the creek is replanted with native riparian plants. At this time the Master Plan can only approximate the location of specific features and provide a description of how spaces might be used. Future phases of work will require detailed topographic surveys and grading analysis to determine specific locations for different features and trails. Even though the creek realignment is based on discussions with geomorphologists and data from other reaches of Putah Creek, the creek meander is a conceptual depiction. The exact layout will be designed by stream restorationists, taking into account soils, existing quality of bank habitat, the location of large native trees, and the removal of non-native plant species.

2. PROJECT HISTORY AND LOCATION

Putah Creek flows from its origin on Cobb Mountain in Lake County, through Lake Berryessa and Lake Solano, and after flowing through Winters, connects to the San Francisco Bay Delta through the Yolo Bypass. Prior to the completion of Monticello Dam in 1957, Putah Creek flows were uncontrolled and subject to seasonal flooding. Monticello Dam provides hydroelectric power and a regular supply of water to Solano and Yolo counties and regulates the water flow into Putah Creek. A portion of the flow is now diverted into the Putah South Canal above Lake Solano to serve Solano County irrigation needs. When full, the Solano Water Project stores 1.6 million acre feet of water.

Falling stream levels during the 1987-92 drought, the region's worst on record, triggered a dispute between the Solano Water Agency and the Putah Creek Council, who claimed that the reduced flow in the summers of 1989 and 1990 in particular had seriously threatened the health of the creek's native fish, violating the California Public Trust Doctrine and state protections for fish living downstream from dams.

In May of 2000 the Putah Creek Council, City of Davis, and U.C. Davis signed a permanent accord with the Solano County Water Agency, ending a 10-year dispute over Putah Creek water rights. The accord provides for about a 50 percent increase in flows during non-drought conditions, it sets forth detailed steps to minimize illegal pumping from the creek, and it specifies measures to be taken during any prolonged droughts to ensure that hardships caused by reduced water availability will be shared by all water beneficiaries. The increased flows benefit the creek's unique community of resident native fish like tule perch, Sacramento suckers and sculpin, and ocean-going steelhead and salmon. The settlement requires an annual flow of 31,000 acre-feet except during extended droughts, when flows may be reduced to about 25,000 acre feet.

The accord also created a management program to maximize the benefits to fish, wildlife and their habitats. It provided for funding of \$160,000 per year for creek restoration and monitoring, including fish and wildlife studies, salary for a streamkeeper to monitor the creek, and grants for native vegetation enhancement and riparian land conservation. The accord provided for the establishment of the Lower Putah Creek Coordinating Committee, which is composed of Yolo and Solano representatives that oversee implementation of the settlement, monitor and study the creek, and promote restoration projects.

Putah Creek is an integral part of the City of Winters natural and cultural history. The centerline of the Creek is both the city limit line and the Yolo-Solano county line, although the city owns most of the south bank as well. The creek has been a recreational asset since Winters was founded in 1875, but the creek bank also served as a dumping ground and was used for wastewater disposal until the early 1960's. With the effort to preserve flows, community interest in creek and habitat restoration was aroused.

In the mid-1990s state funding for urban stream restoration became available. The City of Winters and several citizens saw this as an opportunity to improve the recreational and habitat value of Putah Creek. In order to apply for grant funds, the City commissioned a master plan to identify improvements and recreational opportunities, map exotic plant species to be removed, and list

native riparian plantings appropriate for the creek. The 1995 master plan described a public area, the “Putah Creek Nature Park”, which extends from the car bridge at Railroad Avenue east to Interstate 505, and ranges in width from 250 feet to 600 feet across the creek span. The 1995 plan included improvements to the Community Center grounds, trails located along existing banks and terraces, and entry points for public access to the water. It also provided a blueprint for community volunteer beautification projects. The master plan received an Honorable Mention award from the San Francisco Bay Area Trail Project’s Creative Designs for Conservation in 1996.

3. SITE ANALYSIS

There are four significant man-made structures within the park boundaries. The first is the railroad trestle bridge, which was built in 1907 and was abandoned when the tracks were removed. The 1995 Master Plan proposed that the bridge be refurbished as a bike and pedestrian crossing. This rehabilitation project was completed in 2005, and the finished bridge now links the north and south banks and provides views up and down the creek.

The car bridge that connects Railroad Avenue with Putah Creek Road, just west of the railroad bridge, dates from 1914. Caltrans has ruled that this bridge does not meet current width standards and it is scheduled for replacement when funding is available. The current bridge design has no provisions for pedestrian travel, though the renovated railroad bridge serves that purpose and is the only safe means of crossing the creek at present.

The third structure is the percolation dam, which was built in the 1930s. The water behind the dam became a popular swimming hole for the community. The dam failed in 1952, and since then large sections have cracked, shifted and subsided. It no longer functions as a dam; the concrete is breaking apart and is regarded as unsafe by the city. Fish and Game has determined that the structure inhibits the migration of salmonids, both adults and juveniles. (See Appendix A) The 1995 master plan design presumed the dam would remain, but a grant has since been obtained to facilitate its removal. Currently the water below the dam is used as a swimming hole.

The fourth structure is the site of the former aeration ponds for the wastewater plant (referred to as the Putah Creek Flats later in this document), which were constructed on the south bank of the creek and adjacent to the percolation dam. Aerial photos show the ponds functioning in 1962 and apparently still in use in 1970. The remnants of the ponds are located in the widest part of the creek. The 1995 master plan did not propose any restructuring of this area, or any other changes to the geomorphology (natural formation) of the creek bed.

In this one-mile reach of Putah Creek, the stream channel has been altered beyond the creek’s ability to self-correct. In the past, this section of creek bed was excavated and widened, creating a channel that is now too wide and deep for the creek to create its own natural meandering pattern of pool-riffle-run and deposition of silt onto the lower terrace. Earth and gravel removal and widening of the streambed is most apparent at the percolation dam and former aeration pond sites. In addition, most of the south bank and part of the north bank is too steep to allow for access to the water’s edge.

After the long history of stream alterations for flood conveyance, gravel extraction, and neglect, invasive non-native plants gained a stronghold in this stretch of the creek. Large stands of eucalyptus, arundo, and Himalayan blackberry occupy the eastern half of the park site. These plants

and other invasives offer limited or no habitat value for native animals, fish and insects. They are so dense that it is nearly impossible to reach the creek bank, and they harbor rats, which prey on birds. Probably due to the excessive width of open water and relative lack of native vegetation, as well as proximity to residential development and Putah Creek Road, the native bird population is lower than in other reaches. Some eucalyptus trees (<12” trunk diameter) have been removed and efforts to control blackberry have been made under the Prop. 50 grant.

In addition to crowding out native species, invasive plants have made it impossible to reach the water in many areas. There are only three places on the south side where the water’s edge is accessible, but these spots are disconnected from each other by steep banks, lack of floodplains and dense stretches of impenetrable non-native vegetation. The only location where it is possible to cross the creek at water level without wading is the surface of the broken percolation dam. In order to lessen the scouring effects of storms, large boulders of riprap line the banks on both sides of the dam, making it necessary to scramble over the boulders to reach the water’s edge and the dam. Slow water flows in the vicinity of the dam cause algae to develop on the surface of the water in the summer, though the dam serves to skim off the algae to some extent, improving conditions for swimming. The Winters City Council at the August 7, 2007 meeting unanimously approved the removal of the dam, pending successful completion of the CEQA process.

Downstream of the percolation dam is a newly installed rock weir (installed as part of Prop. 50 grant) that aerates the water as it flows over the rocks, and creates a small pool behind it.

Putah Creek Road borders the entire south bank of the creek within the Nature Park. This narrow country road predominantly serves local traffic and farm equipment, but is also a popular route for bicyclists. In many places the edge of pavement is approximately 10 feet from the top of the bank. The south bank is extremely steep, with little room to widen northward. Unless the banks are re-graded and soil is brought in it will not be possible to build a striped or separated bike trail along Putah Creek Road without realigning the road itself. Realignment will depend upon land acquisition, and is viewed as a long-range goal. Parking on the south bank is limited to three pull out areas for parallel parking on the shoulder. The pullouts have been used as opportunities to dispose of trash into the Creek. As the park develops, means must be provided for alleviating the increasing traffic conflicts and eliminating the dumping problem.

There is limited access to the creek from the bank tops. Most of the banks are very steep; some have less than a 1:1 slope. On the north bank there is a decomposed granite trail that extends from the railroad bridge to the existing wastewater pumping station that was built with volunteer efforts. The width of this trail does not meet the minimum 40” width required by ADA. A natural footpath created by foot and bicycle traffic extends from the pumping station all the way to the end of the public property at Wild Rose Lane. This path, which crosses privately owned land, is only a few feet wide and tends to be washed out by runoff from an apartment parking lot during heavy storms. Several small, casual footpaths lead from this upper bank trail to the water’s edge.

The City’s agreement with the developer of the Putah Creek Hamlet subdivision in the 1990’s created a 100-foot wide city-owned easement between the new homes and the top of the bank. This area extends from the privately owned land west of Madrone Court east to Wild Rose Lane, and represents the largest expanse of easily accessed, restorable land within the city limits. Beginning in 2000, Winters volunteers planted native trees and shrubs within this upper terrace. These plants are filling in, providing a buffer between residential property and the creek. Acquisition of privately owned lands will be required to allow restoration work to be continued to the west towards the Community Center and east toward I-505.

4. PUBLIC PROCESS

The goal of this Master Plan is to capture the community's vision for the creek and guide the long range development of the park, to ensure that opportunities are identified and features well-planned. This Plan takes into account existing conditions, community concerns and desires, adjacent land uses, physical constraints, and agency requirements.

The current design concepts incorporate public comments received in two community workshops, meetings with the Winters Putah Creek Committee (WPCC), River Parkway grant requirements, and discussions with City staff. The public workshops were held in the spring of 2007 (see Appendix D for a list of the workshop comments). During the first workshop, background information on the River Parkway grant (its scope of work and requirements) and the mechanics of geomorphology were presented to the community. The process of natural creek formation, in which stream meanders create a series of regularly spaced riffles, runs and pools of deeper water were described. These presentations provided the public with background information on the creek's current condition, the pending percolation dam removal, vegetation management, creek realignment, and other master planning issues.

The key topics of discussion in the two public workshops were the removal of the percolation dam, eucalyptus tree removals, and the Creek's habitat value and water quality. Public comments from the first workshop, stream geomorphology concepts and a site analysis were distilled and overlaid onto a LIDAR (Light Detection and Ranging) topographic map to develop a conceptual plan for the park including new creek realignment, circulation patterns and access points. A draft plan was presented at the second public workshop and at a WPCC meeting, where additional comments and ideas were discussed. Key discussion points included:

- Improvements to the Park's recreational value
- Access improvements to the creek for swimming, fishing, and other recreation
- Improved safety
- Ecological sustainability
- The development of the Park as an educational resource
- The Park's contributions to the City's economic vitality

5. 2007 MASTER PLAN

The 2007 Master Plan is a long-range planning document to be used in managing the development of the one-mile stretch of creek between Railroad Avenue and I-505 and from 100 feet north of the top of the north bank, south to Putah Creek Road. The Master Plan goals are to integrate the park into the community fabric, support the City's economic vitality, provide access to a native riparian habitat and improve the ecological vitality of the creek. It includes circulation routes to and through the park, parking, conceptual creek realignments, accessible areas, recreational zones, and educational opportunities.

Goals for the park design and creek restoration are to create a creek environment that is self-sustaining and an ecologically sound environment that provides accessible and flexible recreational opportunities for the community. The Master Plan shows the conceptual creek layout and its relationship to other features and activities, proposed park uses and amenities, and connections to the Winters community.

5.1 Universal Access

Universal Design is a philosophy that is more than meeting the requirements of the law for accessibility. It is the creation of environments and amenities that are usable by all people, to the greatest extent possible, without the need for adaptation or specialization. Universal Design features should be incorporated into all of the park spaces and amenities so that people of all ages and abilities can experience the place - young and old, fit and out of shape, able-bodied and those needing assistance. For Putah Creek Nature Park, Universal Design means providing access to the entire creek experience, and not limiting access to only the upper bank. Park amenities include a range of seating heights; shaded, accessible paths; easily read signage and way finding; and gathering spaces.

5.2 Realigned Creek Channel

The conceptual layout of the realigned creek reflects the desired geomorphology for Putah Creek water flows. The proposed creek realignment narrows most of the creek to approximately 30 feet wide, with meanders and pools ranging from 130 to 240 feet apart. For the most part, the creek bed will be reduced in width and depth. Wide flood plains, or terraces, will fan out from the creek banks 30 feet to 100 feet on both sides of the creek. Where feasible, the creek banks will be extended, making the slopes less steep. These changes will return the creek to a dimension that reflects a more natural width and meander similar to the sections of the creek above and below this stretch, and set up conditions that can be naturally sustaining. The wide flood plain will allow the creek to move within its banks, make it possible to restore the native vegetation, and open the park to the community. The proposed realignment starts above the existing percolation dam and ends near the I-505 bridge.

By moving the narrowed creek channel to the center of the banks, there will be physical room for the creek to develop its own meander, especially in the widest section, where the old aeration ponds were located. This proposed flood plain area is approximately 300 feet wide. Based on the potential for future water flows and revegetation it is expected that the creek will be able to change its own course. This section of creek provides a laboratory for stream geomorphologic and biologic studies by researchers from UC Davis and elsewhere.

5.3 Trails

A safe, well-defined circulation system is critical for a successful park. The new circulation plan is based on looped upper and lower trails connecting the north and south banks, with well defined trailheads and dispersed parking.

5.3.1 Upper Loop Trail

The upper trail is the major all season pedestrian/bike trail. The existing bike trestle bridge to the west and a proposed pedestrian bridge at the east end of the park connect the north and south banks. This upper trail is 10 feet wide (north side) and 12 feet wide (south side), paved, and has several connection points into the community. The north bank trail will be used mostly by the Winters community, linking downtown with the residential

neighborhoods. At 12 feet wide, the south bank trail could accommodate touring bikes as well as pedestrian traffic. The upper trails are striped to ease bike and pedestrian circulation conflicts. The 10 foot width is large enough for emergency and city service vehicle access. The suggested pavement treatment is either stabilized earth (using a resinous binding material) or a combination of stabilized earth and decomposed granite. This is a durable, drivable surface that takes on the color of the native soil. Asphalt is not recommended. Asphalt installation and maintenance costs are higher than stabilized earth. The aesthetics of the earthen path are more in line with that of a nature park.

A portion of the existing north bank trail is constrained by the City's wastewater facility, a privately owned apartment complex, and the steep bank edge. In this stretch there is limited room to expand the trail to the proposed 10 foot width. An option to garner more space for the paved trail is to shift the fence lines of the City's wastewater facility and the apartment complex northward approximately 10 feet. This change would not interfere with the operations of the wastewater facility. The south edge of the wastewater facility is minimally landscaped and does not appear to have any permanent, restrictive features that would prohibit the installation of a trail in this space. However, expanding the trail adjacent to the apartments would require that part of the apartment building parking lot be acquired, or that a retaining wall and fill be provided to widen the trail toward the creek. Two parcels in this area are privately owned. Property on the east end of the park west of Interstate 505 is also under private ownership. To fulfill the Master Plan it will be necessary for the City to negotiate an easement or purchase of the land with these property owners.

5.3.2 Putah Creek Road

The possibility of making any changes to Putah Creek Road in order to construct an upper trail on the south side of the creek is dependent on negotiations with the City, Solano County and the affected property owners. Any changes to the layout and expansion of Putah Creek Road are constrained by the bank on the north side of the road and farming operations on the south. (See Statement on Property Ownership, Appendix B).

The Master Plan shows an off-road, 12 foot wide bike/ pedestrian trail adjacent to Putah Creek Road. Importing soil and regrading the steep slopes is one option included in the proposed improvements and can be accomplished during realignment of the creek. Contingent on this improvement, either a striped bike lane or an off-road paved trail for bikes and pedestrians could be built on the north side of Putah Creek Road.

Three options for providing a safer bike/pedestrian trail are listed below. Only Option 1 is shown in the Master Plan drawing.

Option 1

Construct a separated path on the north side of the existing Putah Creek Road (in its current location). This option will require soil import and regrading of the slopes to provide space to cut a path. This option is not feasible until the creek realignment is completed, and the south bank slope is widened. This option, however, requires no land acquisition.

Option 2

Relocate Putah Creek Road south of its current location and use the existing road base for the new path and parking areas. This would require the acquisition of land, and may be cost prohibitive. This option is not dependent on completion of creek realignment.

Option 3

Extend the top of bank setback up to approximately 100 feet south (consistent with the north side of the creek) and relocate Putah Creek Road within the outer edge of the setback (approximately 70 feet south of its current location). This expanded setback provides more options for the creek bank slopes; creates an upper terrace with a wide separation between multi-use path and Putah Creek Road and; provides better parking opportunities and public access. This option requires the more land acquisition than Option 2 and is the most costly. This option is not dependent on completion of creek realignment.

5.3.3 Lower Loop Trail

The lower loop trail on both the north and south banks will be fully accessible, with the exception of some switch-back short cuts. Since the trail is located within the flood plain, its exact location may shift depending on the amount of seasonal flooding, where the creek meanders, and how the natural revegetation process evolves. For these reasons the lower trail will not be paved. Each spring after the rains have stopped the City can blade the paths, leveling the trail and making a smooth, hard surface, approximately four to five feet wide, with grades not to exceed 5%. Trail segments with limited access will be identified with signage.

The plans for construction of a new car bridge, which is scheduled for completion in 2009, include pedestrian walks and creek overlooks. With construction of the new bridge there is the potential to extend the lower creek trail west under the new bridge structure, and depending on discussions with the property owner, extend the trail to the top of the north bank connecting it with Wolfskill Ave.

5.3.4 Creek Crossings

The Master Plan includes three bridges connecting the upper trail at the east and west ends, providing a two-mile loop through the park and views up and down the creek. The existing car bridge and the restored trestle bridge at the Community Center are the western connection. The proposed eastern bridge will be a 12 foot wide structure, suitable for pedestrians and bikes. The preferred location is adjacent to or attached to the I-505 structure, dependent on approval by Caltrans.

5.4 Parking

The Master Plan has three south side trailheads, located on Putah Creek Road. The first is at the trestle bridge. When the new car bridge is built, a portion of Putah Creek Road will be realigned, and it appears that with this realignment it maybe possible to provide limited vehicle parking (five vehicles) near this bike trail. The second location, and the most problematic, is the main trailhead entry into the Putah Creek Flats section located at the bottom of the access ramp. Currently, there is a widened area that could accommodate up to 11 parallel parking spaces along the road edge. This would also be the area where school buses for field trips would unload, but not park. Since this will be a main entry into the creek, it is critical that the Putah Creek Road width be resolved before this access route is developed. The third location for parking is at the east end of the park, adjacent to I-505. There is a long, wide area that could accommodate up to eight vehicles. This is also a possible location for the future pedestrian bridge. To focus parking in the designated areas and to discourage dumping along the south bank edge, a post and cable fence and native

hedge plantings are proposed. If additional land is acquired as part of relocating Putah Creek Road, more options for parking may be developed.

On the north side of the park, parking is available at the Community Center parking lot and on adjacent streets. In addition, a limited amount of parking is proposed at the south end of East Street, as part of proposed modifications to the City's waste water treatment facility.

5.5 Site Amenities

Site amenities will include gateways, seating, overlooks, displays and signage, maps, fishing access, bike racks and trash containers. The style should be simple, classic, sturdy, architecture that blends with the natural surroundings and that reflect the rustic quality of the park. Building materials will include rocks and boulders, wood, stained concrete and metal. The design and materials need to be easily obtained and low-maintenance; and plans for the elements will have to meet the current codes and be approved by the City. It may be appropriate for some of these amenities to be community service construction projects by city volunteer groups.

5.5.1 Gateways

Gateways will mark the major trailheads into the park. They can physically span the trail, or mark the entry with a large, vertical structure or post (e.g. a totem). Gateways include the park name, a map of the park, trail signage and other educational displays. The gateways are located at the Community Center, the two Creekside Way open space sites, and the south trail leading to Putah Creek Flats. The trestle bridge and the future pedestrian bridge will serve as their own gateways. To encourage use of the trails by town visitors, the gateway nearest Railroad Avenue should be prominent.

5.5.2 Overlooks

Overlooks will be located off the main paved trails in areas with views up and down the creek. They will likely consist of shaded wood platforms with appropriate railings, and include a bench and a bike rack. Educational displays will describe particular features observable at that location and historical information.

5.5.3 Seating

Depending on the setting, benches, both refined and rustic, will be located throughout the park in shady areas with views onto the creek. Some will be along the trails and others will be set off the trail in quiet locations. Rustic seating can take the form of boulders and large wood logs (secured to the ground) arranged in clusters. The more refined areas will use the city's standard bench.

5.5.4 Signage and Displays

Park signage will include trail routes, educational displays with topics on the history of the town and the creek; riparian plants, animals and insects; the geomorphology of the creek; and information about salmon and steelhead migration. The park map will include trail locations and their accessibility factor (paved, unpaved, slope %).

5.5.5 Fishing Access

Fishing is an historical use of the creek and a specifically identified recreation activity. The Master Plan provides for improved access to the water's edge and better fish habitat. A series of gabions may be installed as part of the percolation dam removal. The gabions and the

surrounding area will improve fishing access by providing a steep drop off and room to swing a pole. These and other fishing areas will be connected to accessible trails. At this time a permanent fishing dock is not proposed because high flows can damage or destroy these structures

5.5.6 Bike Racks

Bike racks will be located on the upper loop trail at the overlooks, main gathering areas, and at the main picnic area in the Putah Creek Flats. The racks will be set off the path to provide unobstructed travel along the main trail. The metal racks will support bikes without kick stands, and will be suitable for U-shaped locking systems.

5.5.7 Trash and Recycling

Trash and recycling containers will be based on the City's standard, and will be securely mounted to discourage vandalism. The containers will be located at key pedestrian intersections along the trail, at trailheads and overlooks, and accessible to maintenance crews.

5.6 Restroom

A public restroom is a critical component of the park. The Master Plan provides for one restroom facility, located on Putah Creek Road near the main entry into Putah Creek Flats. This facility could be either a portable unit surrounded by a masonry block enclosure, or a prefabricated composting toilet structure, similar to those used in national parks. The location of this restroom will be based on the maintenance access and will balance road traffic-parking and vandalism conflicts. The building materials would need to be fire proof (concrete walls and metal roof), and the style reminiscent of national parks. Two restroom facilities are available on the north side of the railroad bridge, the Community Center (when opened), and a new public restroom that was built in the Rotary Park in 2007.

5.7 Programmatic Opportunities

Putah Creek Nature Park offers a unique opportunity as an outdoor classroom, as a place for civic venues, as well as recreational uses. The Park will also play an active role in the vibrancy and growth of the downtown. The Park and the adjacent businesses can become destinations, each encouraging more activity for the other. The Master Plan includes facilities and spaces that support a series of program opportunities. As access to the park is improved, certain areas, each with a distinctive flavor and use, will be available to the public. Specific areas can be reserved, providing revenue for the City.

5.7.1 Putah Creek Flats

Located at creek level, Putah Creek Flats is the four-acre area at the location of the old aeration ponds, and is one of two places along the creek where there is an existing flood plain. The Master Plan intends for the Flats to serve as a recreation area for families and school events. The Flats will offer easy access to the creek, man-made and natural history, and large open areas with clear views across the creek. A large picnic area with tables will be located above the typical high water mark. When the creek bed is re-sculpted, gravel bars and pools will develop at the bends, creating shallows, riffles and deeper water. Where gabions are installed, the bank edge will be taller and straighter, providing good fishing spots. The foot trails will be bladed clear each spring. Where needed, an accessible fabric (mobimat) can be installed that will facilitate access to the water's edge or other built features.

5.7.2 Community Center

The Community Center connects Putah Creek Nature Park with downtown and is the urban gateway into the park. Entry into the park from Railroad Avenue or Main Street should be clearly defined. As part of the park improvements the Master Plan strengthens the pedestrian connection between the park trail and the downtown. The first phase improvement, as described in Section 7, will be to build a wide, hard-paved walk leading from Rotary Park and the parking lot to the upper trail head at the existing oak tree and stage area. A large arbor will act as both a park gateway and a frame for the stage. This structure can support lights and scenery backdrop for the stage. This gateway may also be the entry to the Winters Art Walk. A second phase connector will be a pedestrian and bike path extending from Elliot Street to the new upper trail.

The area around the Community Center provides an opportunity for future civic development and a compact community arts area, including a renovated Community Center, a refurbished Rotary Park, a new community theater, and wide, open entries into the Park and the upper loop trail.

Steps will lead down from the trestle bridge and connect to the new trail at the stage backdrop. These steps will provide direct access to Railroad Avenue without having to go through the Community Center grounds.

5.7.3 Art Walk

The trail near the Community Center can be used to display of outdoor art and can provide a creative destination experience for community members and visitors, as well as an opportunity for the art community to show their interpretation of the park. The art pieces can be rotating exhibits, permanent or ephemeral, using man-made and/or natural materials to reflect the creek and local history. The walk can be organized as a treasure hunt, with art pieces located in unexpected places that take visitors throughout the park. The art walks are an opportunity for community involvement that can involve school art classes as well as amateur and professional artists.

5.7.4 City Wastewater Treatment and Well Facility Area

The City owned land at the wastewater treatment facility can provide another access point into the park. The Master Plan drawing shows modifications to the current facility, including a service road entry and handicapped accessible parking. This service road provides pedestrian and bike access to the upper loop trails. A grassy area, with informal seating, such as log benches or boulders, and picnic tables, can be a place for picnics or staging field trips. A nearby overlook will provide views to the widest area of the creek. The signage at this location could include photos and history of the percolation dam, as well as information about Lake Berryessa and Monticello Dam, and the role of water and flooding in the area's development. The cell tower on the facility grounds will remain indefinitely although it is recommended that the tower be removed when the current lease expires. In the meantime, it can be camouflaged to blend better with the surrounding environment.

A Nature Center would be a logical extension of the civic redevelopment associated with the development of the park. The large grassy area overlooking the Putah Creek Flats on the south side of the creek is a logical location for this type of facility. The Nature Center would support the educational components of the park, with displays describing the natural and cultural history of the bioregion. Constraints include parking and a narrow access street.

5.8 Vegetation Management

The benefits to restoring the native riparian flora to the creek include more and better quality foraging habitat for animals, birds and insects; development of a self-sustaining flood plain; better fish habitat including shaded banks for spawning; and increased access to the creek along the entire mile reach of the park.

The new park plantings will only include native plantings and will use species found in nearby reaches. 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. The plants will be in arrangements typical of those found in the wild, and zoned according to the elevation above the low flow channel, where they would naturally occur, based on aspect, and relationships with other plants.

The Winters Putah Creek Committee has prepared a Vegetation Management Plan for the Park. This Plan outlines the general procedures for managing vegetation, both exotic (non-native) and native, within the 40 acre park. It describes the revegetation efforts to date, and provides a plan of action for the remaining areas. It also lists the major and most disruptive exotic plant species to be removed, species to be replanted, and a preliminary schedule when the removals and replanting would occur. A copy of the WPCC Vegetation Management Plan is included in Appendix F.

In order to keep the non-native plants from re-establishing themselves, it is critical that they be completely removed from each section. The eradication process will involve the application of herbicides and the use of mechanical means, and the removal of non-native trees and plants. It will be important to keep the surrounding neighbors informed of the process, removal and replanting schedule, and coordinate volunteer replanting parties. The large scale removals of the exotics will take place in 2008 through 2012, with natives replanted as soon after the removals as possible.

A regular, long-term monitoring and maintenance program will help ensure the successful removal of exotic, invasive vegetation and the successful establishment of new plantings along Putah Creek.

6. SAFETY

Putah Creek Nature Park offers an opportunity to experience the challenges of nature. A balance must be struck between nature and safety. The Park will not include man-made structures or features that are inherently unsafe. Emergency vehicles will have access to the entire length of the park via the paved upper trails. The new flood plains and lower loop trails will provide significantly more access to the creek area. Pedestrian lighting will be limited to those areas near the Community Center in order not to interfere with the creek's natural environment.

There is a mutual aid agreement currently in place between the City of Winters Police Department, Winters Fire Department and Solano County Sheriffs Department and Vacaville and Dixon Fire

Protection Districts. Technically, all resources and improvements to the site will be protected by official patrol/law enforcement. Practically, it will take a strong commitment from the local community and neighbors to educate visitors of the park on proper use, report abuses and use the site in a proper manner themselves.

7. IMPLEMENTATION PLAN

7.1 Phasing

Putah Creek Nature Park has an uncertain implementation schedule that will be determined by the City's annual funding cycles and by grant awards. The following items (located on city-owned property) are not dependent on the completion of the creek realignment, and can be designed and built in the near future:

- Removal of the percolation dam
- Build steps from the trestle bridge to the trail
- Pave the trail from the trestle bridge/Community Center to the Waste Water Treatment facility
- Install a paved, accessible path from the Rotary Park parking lot to the north side trail
- Build overlooks and gateways on city-owned property
- Develop area west of wastewater treatment plant as described in 5.7.4

The upper and lower trail work is dependent on the completion of the creek realignment, securing easements and land acquisition, and obtaining grant funding. In addition, the pedestrian bridge will likely require a lengthy planning/permitting process.

The environmental review process is underway for many aspects of the planned park improvements. Additional environmental review may be needed as park plans are changed.

7.2 Volunteer Opportunities

To foster environmental stewardship and have the community adopt the role of park protector it is important to engage the entire community in projects that enhance the park. For several years the community has been an active participant in the development of Putah Creek Nature Park, and the revised Master Plan provides additional opportunities for public involvement in implementing many of the proposed improvements.

Future projects that may lend themselves to community participation include:

- Creek clean up
- Replanting native plants
- Construction and maintenance of foot trails
- Weeding newly planted areas including the native grasses.
- Making trail maps
- Building overlooks and gateways
- Installing trail markers
- Designing the Art Walk

7.3 Funding Sources

The Putah Creek Nature Park can also serve as a revenue source for the City. The Community Center and Park can be the setting for meetings or conferences on creek restoration, practical applications, bioregional conferences and events, professional society meetings (engineers, landscape architects, planners, and science and art teachers). Putah Creek Flats can be reserved for large group events, field trips, meetings, and conferences.

This Master Plan will be used to support grant applications for funding future construction projects; to develop City maintenance and construction budgets; and to identify volunteer construction projects. The following grants have been awarded:

1. Prop. 12 – 2000 Park Bond Act: \$36,000 for trail improvements, benches, garbage/recycling cans, information kiosks, plant and wildlife signage.
2. Prop. 50 – California River Parkway I: \$451,763 in grant money, and \$185,120 from other sources for the removal of the percolation dam, floodplain restoration and revegetation.
3. Calfed Program: \$539,490 for hedgerow plantings to deter illegal dumping, bank stabilization and enhanced wildlife migration at Putah Creek and Dry Creek.

The following are grants submitted (but not yet awarded), or possible future grants:

1. Farm and Ranch Cleanup CIWMB) - \$50,000 for removal of solid waste (asphalt, concrete and trash primarily in Dry Creek/Hwy 128 and Dry Creek/Putah Creek confluence.
2. Off Highway Vehicle Restoration (submitted): \$50,000 for post and cable barriers along the south bank (Putah Creek Road) and No Trespassing/No Vehicle Access signage.
3. Prop. 50 River Parkway III-submitted: \$800,000 to realign the low flow channel of Putah Creek from the Winters Car Bridge to the Percolation Dam along the south bank. Create three new acres of functional floodplains (beaches).

The California State Dept. of Parks (www.parks.ca.gov, 916-653-7423) is another source of grants and bonds specifically targeting the acquisition of outdoor recreation areas, trails, picnic and cultural areas.

Other potential funding sources include:

California Outdoor Recreation Planning Program (CORP)-
Phone: Planning Division at 916-653-9901 or
Email planning@parks.ca.gov

The federal Transportation Enhancements (TE) program funds
<http://www.enhancements.org/index.asp>

8. COST OPINION

To assist the City with implementation and phasing, developing budgets, fund raising and grant applications, a spread sheet identifying specific construction items (e.g. trails, overlooks, signage) and

an opinion of construction costs is included in Appendix E. This matrix uses 2007 construction and materials costs for major park components. It does not include costs for permits or land acquisition.

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

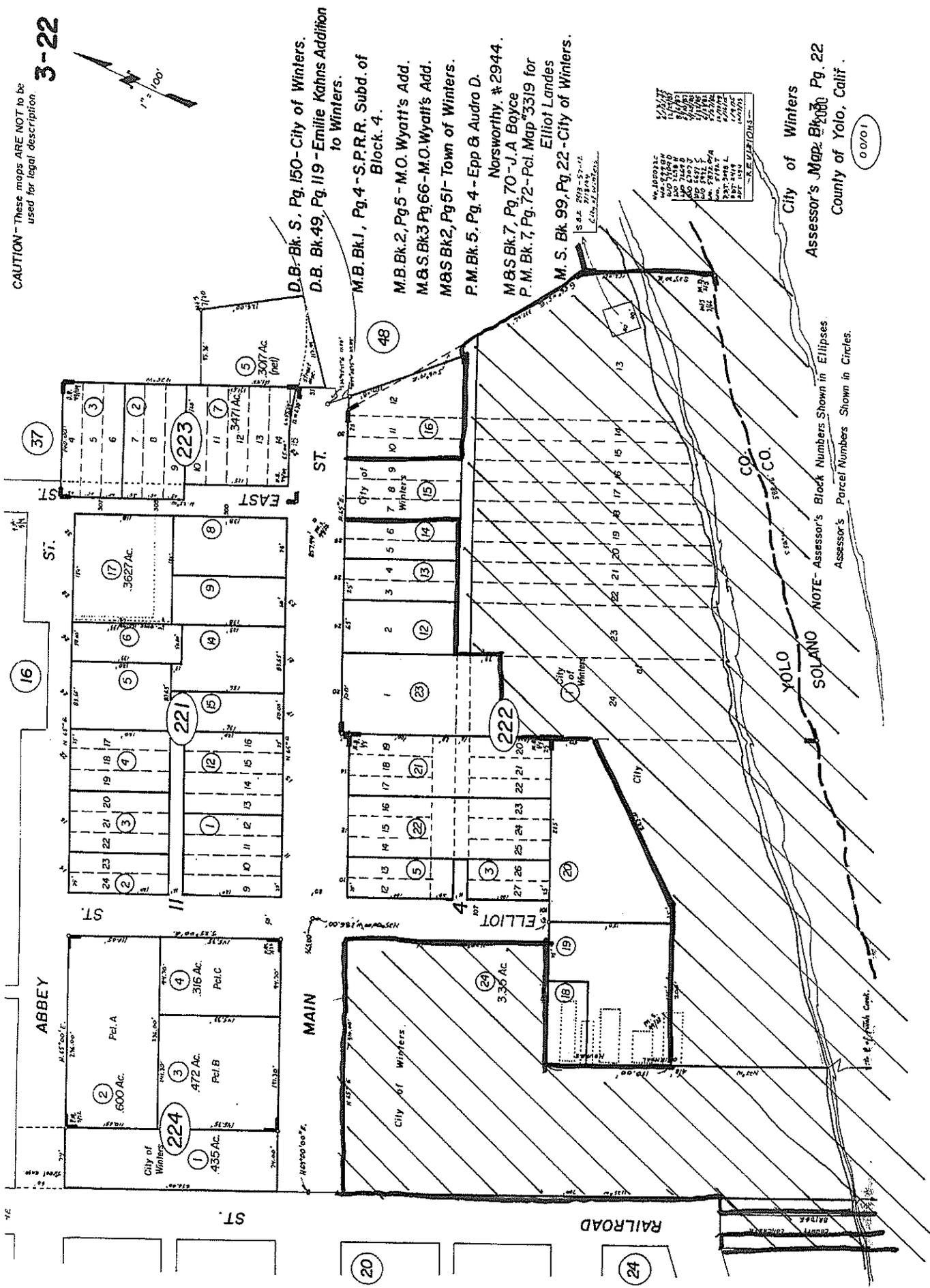
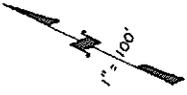
Private Ownership of the property within the banks of Putah Creek adds another layer of complexity to the ultimate park design. At the time of the 2007 Master Plan's adoption, approximate limits of the City's ownership of the creek were the top of the north bank-from the car bridge to the end of the 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. & S. Bk. 3, Pg. 66 - M.O. Wyatt's Add.
- M. & S. Bk. 2, Pg. 51 - Town of Winters.
- P.M. Bk. 5, Pg. 4 - Epp & Audra D. Marsworthy, #2944.
- M. & S. Bk. 7, Pg. 70 - J.A. Boyce
- P.M. Bk. 7, Pg. 72 - Pol. Map #3319 for Elliot Landes
- M. S. Bk. 99, Pg. 22 - City of Winters.

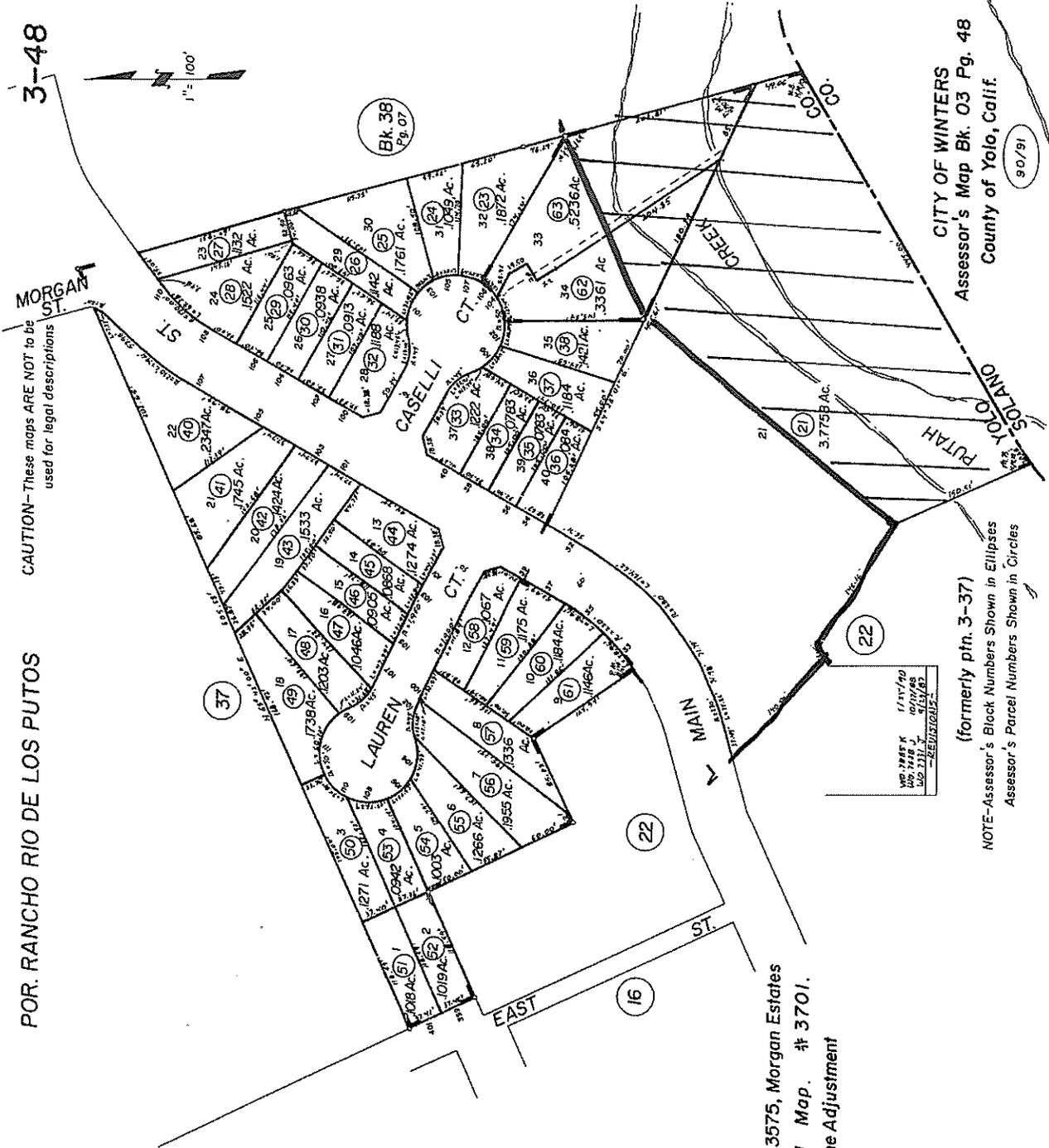
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POR. RANCHO RIO DE LOS PUTOS

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

3-48



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

WB 1111 X	1/11/70
WB 1418	02/17/60
WB 1111 Y	5/13/62
--REVISIONS--	

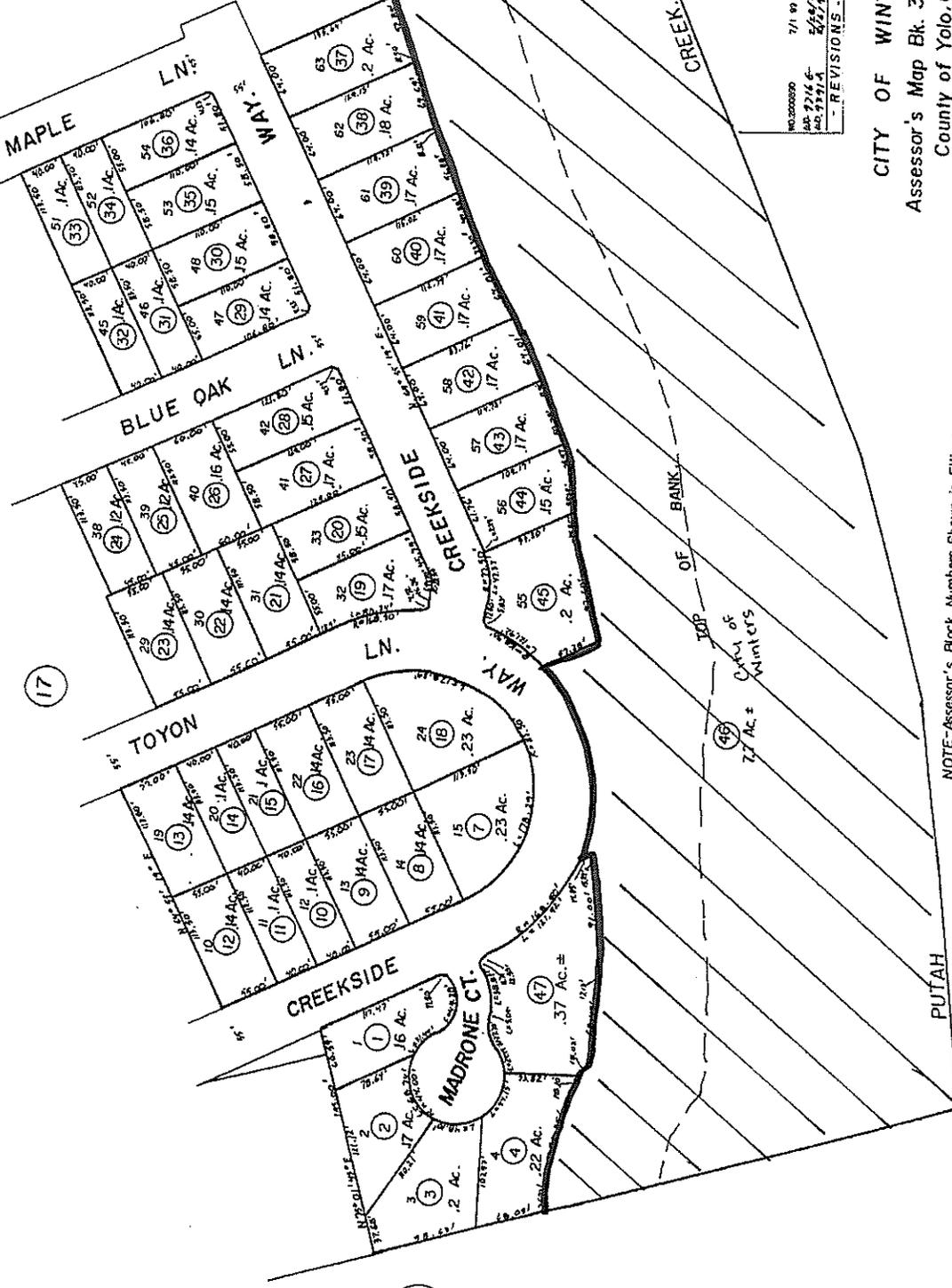
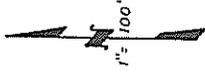
(formerly ptn. 3-37)
NOTE—Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles

CITY OF WINTERS
Assessor's Map Bk. 03 Pg. 48
County of Yolo, Calif.
9/0/91

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.



NO. 20000000	7/1 99
Map 2714 &	5/25/77
20, 27, 27.1, 4	5/25/77
- REVISIONS -	

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

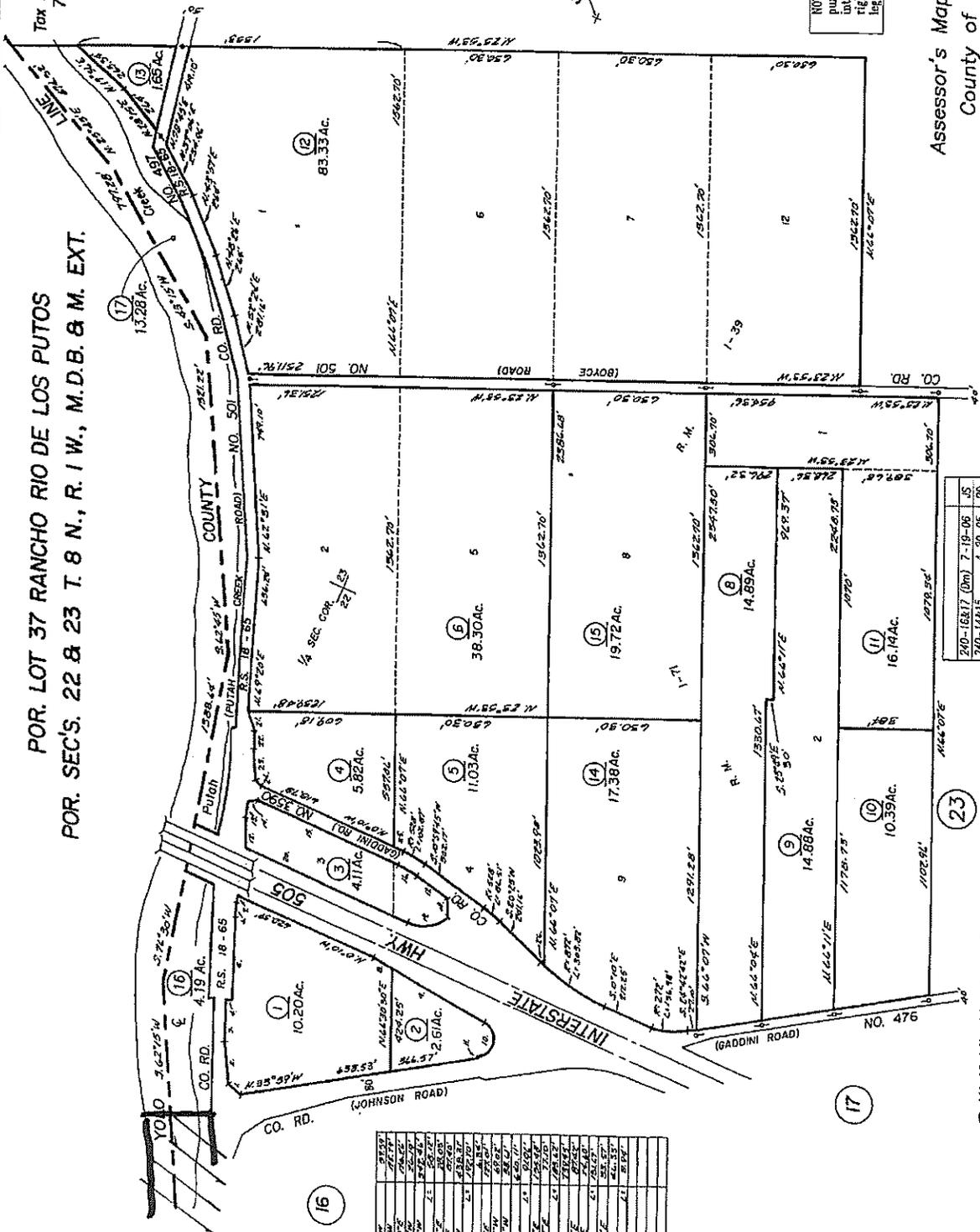
CITY OF WINTERS
 Assessor's Map Bk. 38 Pg. 18.
 County of Yolo, Calif.

00/01 JUL 2 2000

Bk 3
Pg. 37
48

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 legitimacy 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
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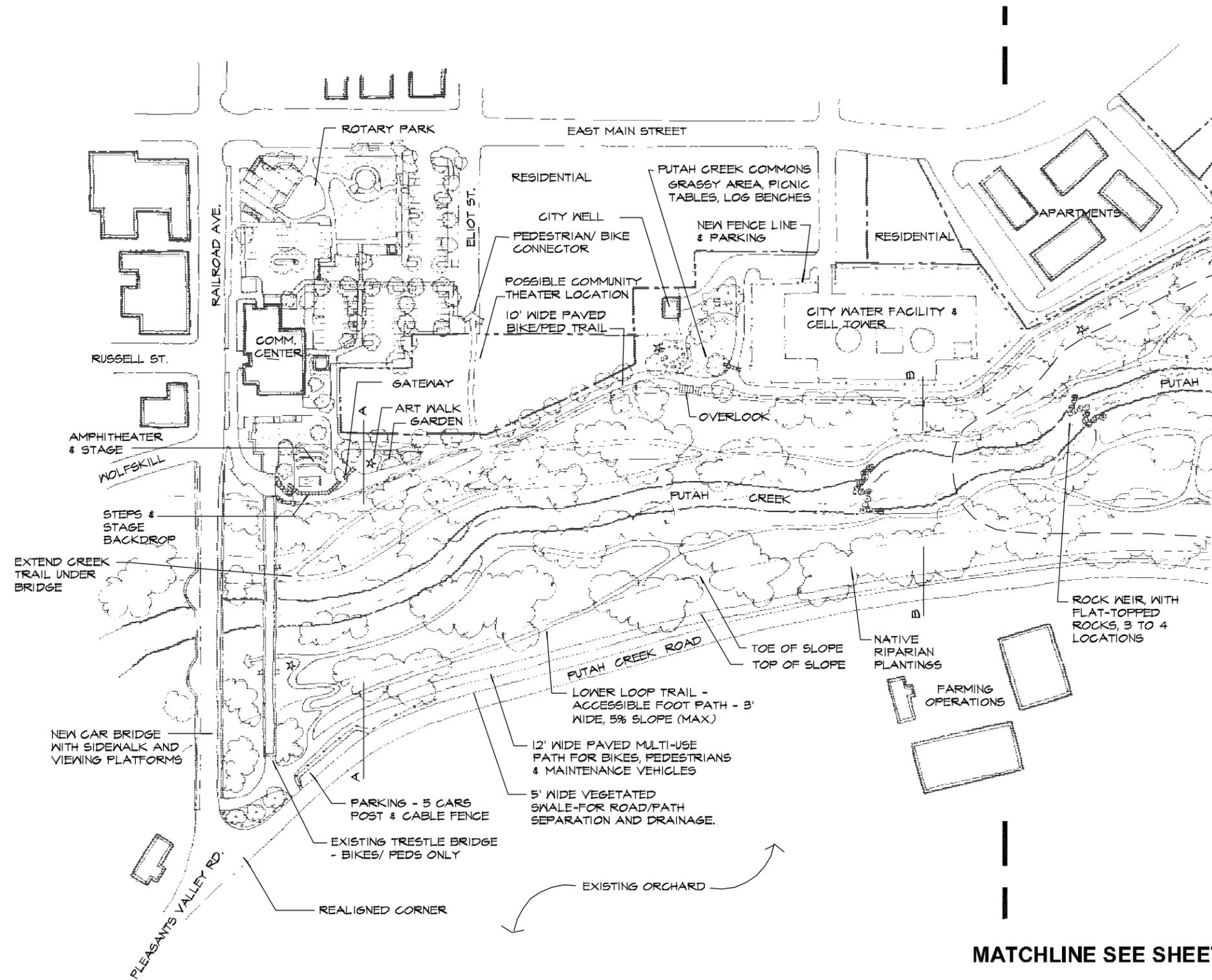
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240-16817 (0m)	7-19-06	JS
240-14815	4-29-05	PP
240-18-60	1-25-07	PS
240-15-40	2-28-78	DB

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

NO.	ACRES	SECTION	TOWNSHIP	RANGE	M.D.B. & M. EXT.
1	10.20	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
2	2.61	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
3	4.11	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
4	5.82	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
5	11.03	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
6	38.30	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
7	19.72	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
8	17.38	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
9	14.88	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
10	10.39	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
11	16.14	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
12	14.89	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
13	14.89	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
14	14.89	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
15	14.89	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
16	14.89	16	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
17	13.28	17	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
18	83.33	25	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.
19	13.28	26	T. 8 N.	R. 1 W.	M.D.B. & M. EXT.

Appendix C

2007 Master Plan Graphics



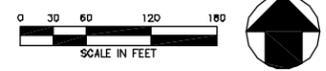
COMMUNITY CENTER & PARK ENTRY

- IMPROVED PEDESTRIAN ACCESS TO CREEK TRAIL
- BACKDROP FOR STAGE PRODUCTIONS
- STEPS FROM TRAIL TO TRESTLE BRIDGE
- STRENGTHEN PEDESTRIAN & BIKE CONNECTIONS
- PAVED ENTRY WALK
- BIKE PARKING
- BENCHES
- GATEWAY TO PARK
- SIGNAGE AND MAP
- BEGIN ART WALK
- COMMUNITY THEATER
- NATURE CENTER
- CREEK ACCESS BELOW CAR BRIDGE
- ACCESS TO LOWER TERRACE & WATER

CITY WATER FACILITY

- IMPROVED ACCESS TO PARK & TRAIL
- HC PARKING
- GRASSY AREA WITH PICNIC TABLES, BENCHES
- GATEWAY AND OVERLOOK
- CAMOUFLAGED CELL TOWER

MATCHLINE SEE SHEET 2

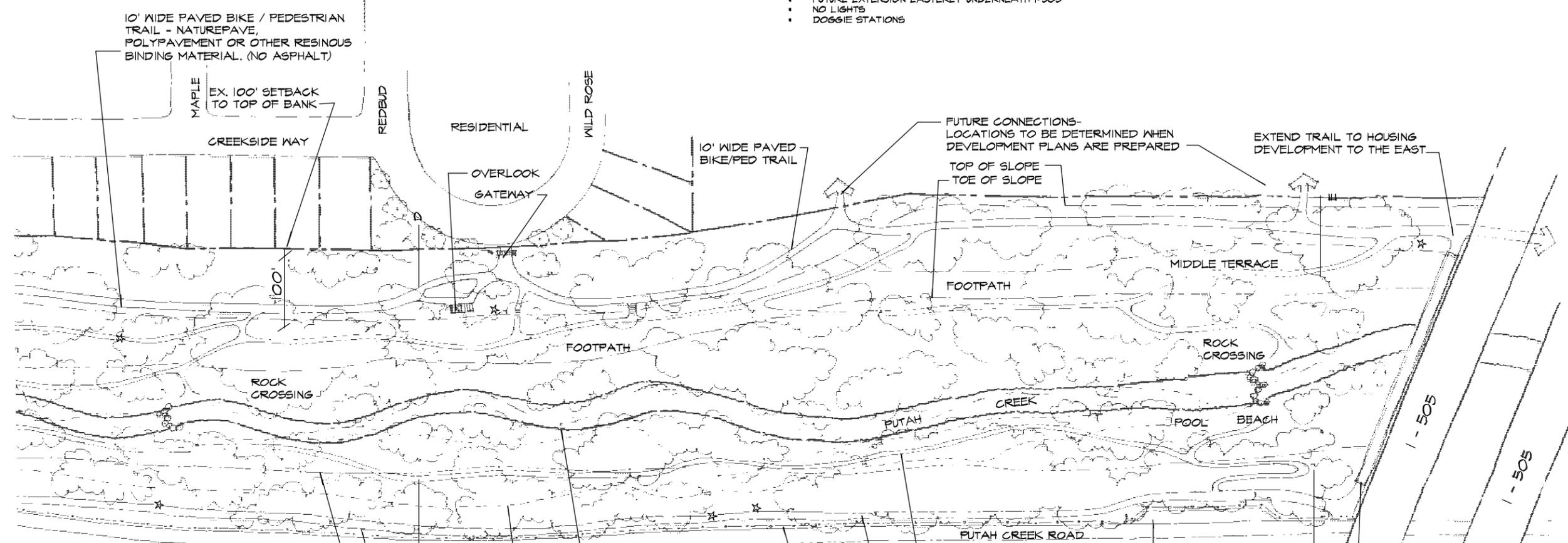


COMMUNITY GATEWAYS

- GATEWAY AT TRAILHEAD
- BENCH
- TRASH CANS
- SIGNAGE AND MAP
- EDUCATIONAL DISPLAYS

TRAILS

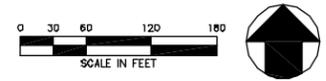
- UPPER TRAIL
 - CONNECTS TO CITY STREETS AND OPEN SPACES
 - PAVED MULTI-USE TRAIL - MINIMUM 10' WIDE - BIKES, PEDESTRIANS, SERVICE VEHICLES
 - RESPECTS RESIDENTIAL PRIVACY
 - LOOPEL TRAIL - CONNECTS NORTH AND SOUTH BANKS
 - ACCESSIBLE - LESS THAN 5% SLOPE
 - OVERLOOKS WITH BENCHES
 - TWO PEDESTRIAN BRIDGES
 - FUTURE EXTENSION EASTERLY UNDERNEATH I-505
 - NO LIGHTS
 - DOGGIE STATIONS
- LOWER TRAIL
 - UNPAVED PATHS - CITY TO REBLADE PATHS EACH SPRING
 - ACCESSIBLE - LESS THAN 5% SLOPE
 - PATHS LEAD TO WATER'S EDGE
 - ACCESSIBLE UPPER & LOWER TRAIL CONNECTIONS



MATCHLINE - SEE SHEET 2

RIPARIAN PLANTINGS

LOWER TERRACE	TRANSITION	UPPER TERRACE
ALDER	BLACK WALNUT	BLACK OAK
BOX ELDER	BOX ELDER	BALCK WALNUT
BUTTON WILLOW	GRASSES	CALIFORNIA SYCAMORE
COLLTONWOOD	OREGON ASH	COFFEEBERRY
DUTCHMAN'S PIPE	REDBUD	ELDERBERRY
GRASSES	TOYON	GRASSES
OREGON ASH	WILD GRAPE	INTERIOR LIVE OAK
WILD GRAPE	WILD ROSE	REDBERRY
WILLOW	VALLEY OAK	TOYON
CATTAILS		WILD ROASE
TULE		VALLEY OAK

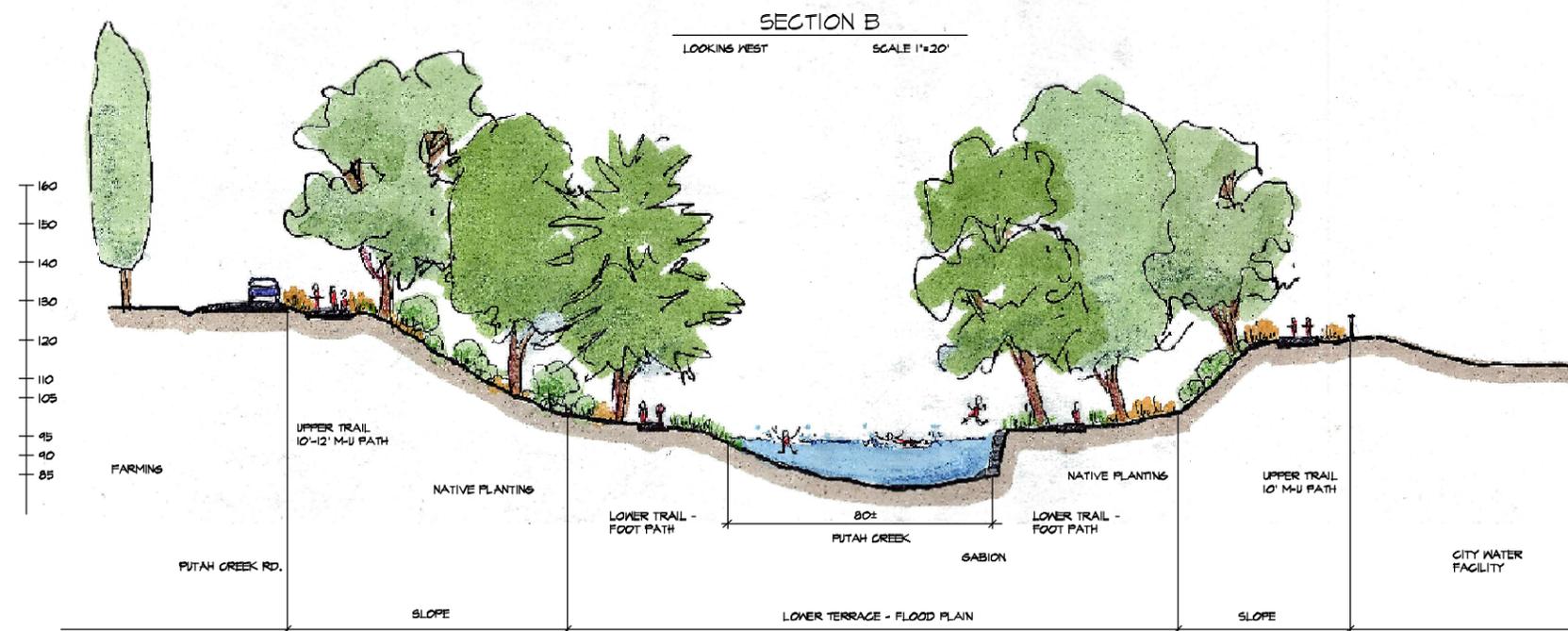


PUTAH CREEK NATURE PARK - DRAFT MASTER PLAN

CITY OF WINTERS

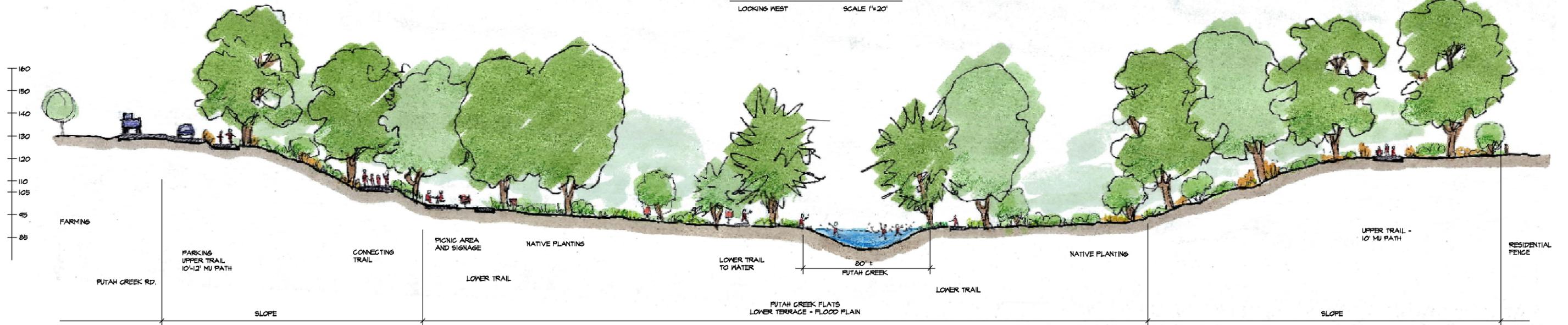
SHEET 3 OF 3
OCTOBER 2007

GCI ENGINEERING & LANDSCAPE ARCHITECTURE
 Project Planning • Civil Engineering • Landscape Architecture
 2049 Spotted Street, Suite 302 • Davis, CA 95618 • (530) 754-0294
 1100 20th Street, Suite 3000 • Sacramento, CA 95811 • (916) 443-0296



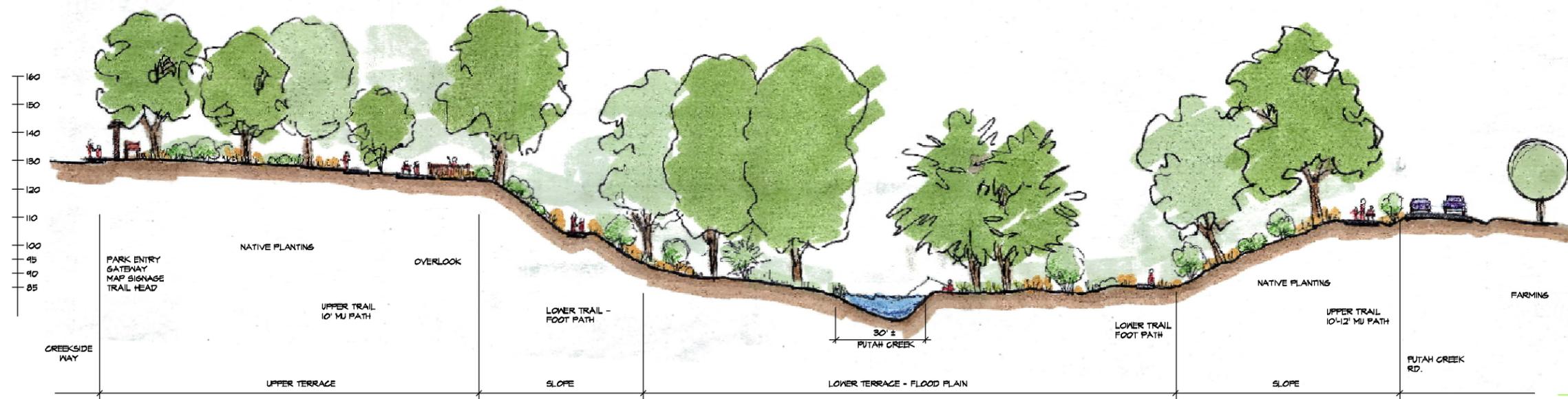
SECTION C

LOOKING WEST SCALE 1"=20'



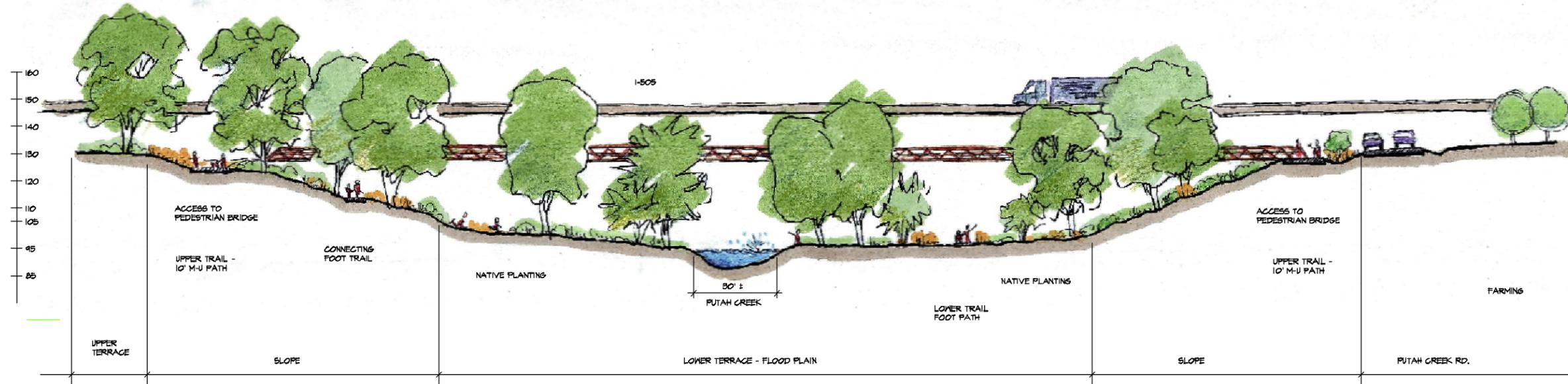
SECTION D

LOOKING EAST SCALE 1"=20'



SECTION E

LOOKING EAST SCALE 1"=20'



DISPLAY



OVERLOOK



PEDESTRIAN BRIDGE



FOOTPATH

North Cascades

HAPPY CREEK NATURE TRAIL

Trail Length: 1/3 Mile (.5 Kilometers)
 Total Elevation Change: 50 Feet (15 Meters)

- Cross-Slope: 0 to 5%
- Trail Width: 4 Feet (1.2 Meters)
- Inclination: 0 to 4.5%
- Surface: Boardwalk
- Obstacles: Slippery when wet

ACCESS TRAIL PATH

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 1st 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

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
Site Preparation and Grading - Unit costs unknown, too many variables					
1	Clearing and Grubbing				\$ -
2	Misc. Demolition and removals				\$ -
3	Clearing & Removals				\$ -
Site Mobilization & Demolition Sub-Total:					\$ -
Grading & Drainage - Unit costs unknown, too many variables					
4	Rough Grading				\$ -
5	Finish Grading				\$ -
6	Imported Soil				\$ -
7	Erosion Control				\$ -
8	Drainage				\$ -
Grading & Drainage Sub-Total:					\$ -
Creek Rechannelization: Costs dependent on grant application requirements - Unit cost unknown, too many variables					
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		\$ -
Creek Rechannelization Sub-Total:					\$ -
Site Utilities - Some unit costs unknown, too many variables					
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	\$ -
Site Utilities Sub-Total:					\$ -
Paving					
22	AC paving - parking at City Wwater site	4,800	SF	\$ 6	\$ 27,600
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
Paving Sub-Total:					\$ 996,200
Alt	Trails-Decomposed Granite (upper loop trail-north)		SF	\$ 2.50	\$ -
Site Amenities					
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	Flaggpole	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
Site Amenities Sub-Total:					\$ 280,700

		Qty	Units	Unit Cost	Total
	Pedestrian Bridge				
49	Prefab bridge - upper trail	1	EA	\$ 450,000	\$ 450,000
				Pedestrian Bridges Subtotal:	\$ 450,000
	Planting				
50	Native trees, shrubs ground covers within creek zone		SF	\$ 2.00	\$ -
51	Ornamental plantings		SF	\$ 2.50	\$ -
52	Turf (sod) for park near water facility		SF	\$ 1.00	\$ -
				Planting Sub-Total:	\$ -
	Irrigation				
53	Irrigation System		SF	\$ 2	\$ -
				Irrigation Sub-Total:	\$ -
	Maintenance:				
54	90-Day Maintenance Period		SF	\$ 0.10	\$ -
55	6' Temporary Construction Fence, rented		LF	\$ 4	\$ -
				Maintenance Sub-Total:	\$ -

The following categories are to be included in calculating the budgets for each construction project. These percentages of the construction budget are approximations.

	Site Mobilization / Demobilization	3%			
	Staking and Surveying	2%			
	Geotechnical Inspection and Testing	2%			
	Inspection and Permits	8%			
	Contingency	20%			
	Design Fees - Improvement Plans	10%			
	Construction Management	5%			

Notes:

1	In providing opinions of probable construction cost, the Client understands that the Landscape Architect has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinions of probable construction costs provided herein are to be made on the basis of the Landscape Architect's qualifications and experience. The Landscape Architect makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to bid or actual costs.
2	This opinion of probable cost was based on the Preliminary Master Plan dated October 2007 for the Putah Creek Nature Park Master Plan, which has not yet been approved. Actual quantities may vary during the construction of this project.
3	This opinion of costs assumes that the improvements will occur in multiple phases; and additional costs may be incurred. Costs also assume competitive bidding.
4	This opinion of costs DOES NOT include costs for the following items: a. Engineering, construction management and soils testing, except as noted. b. Joint trench utility costs (PG & E, Pacific Bell and CATV). Undergrounding or relocation of existing overhead utility lines. c. Permits or other City, Agency fees. d. Any costs related to environmental assessment or the mitigation of any contamination, endangered species or archeological resources. e. Costs for land, financing, bonds and easements. f. Design and construction phase costs. Protection of trees. g. Demolition, except as noted in Opinion of Costs. h. Off-site improvements, except as noted.
5	Unit costs are July 2007 basis. Costs will be reviewed and updated annually as part of the City's CIP process.
6	This opinion assumes payment of prevailing wages.
7	Not every line item will have a unit quantity or cost. The particular line item may have too much variability, making any figure irrelevant. These Line Items are included as a reminder of particular elements that will need to be quantified as specific projects are developed.

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 1¹. 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.

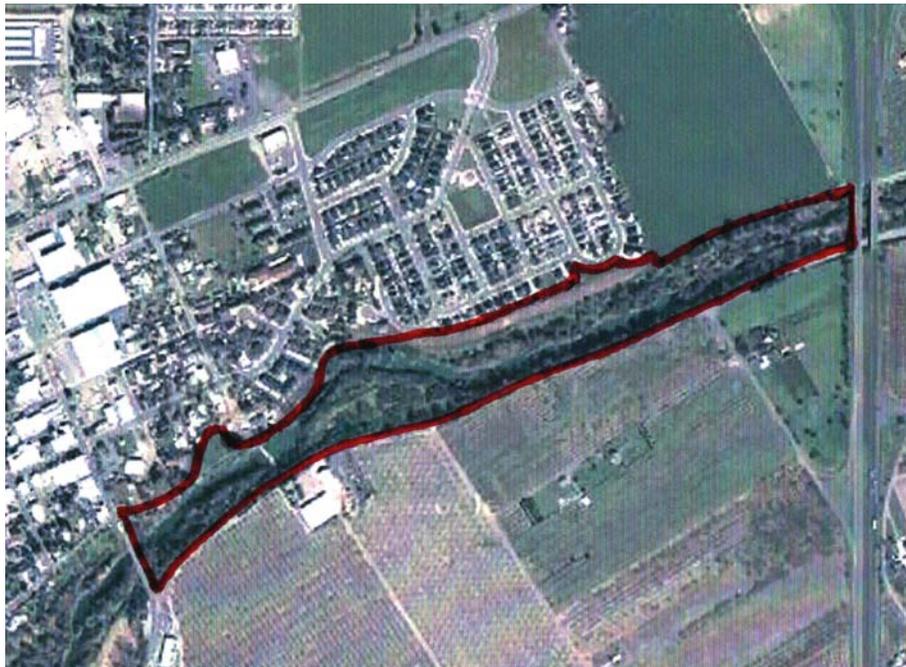


Figure 1: Extent of Winters Putah Creek Nature Park

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.

¹ Some of the inscribed land in Figure 1 is under private ownership.

2 Current Plant Species

2.1 Natives²

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.

² 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.

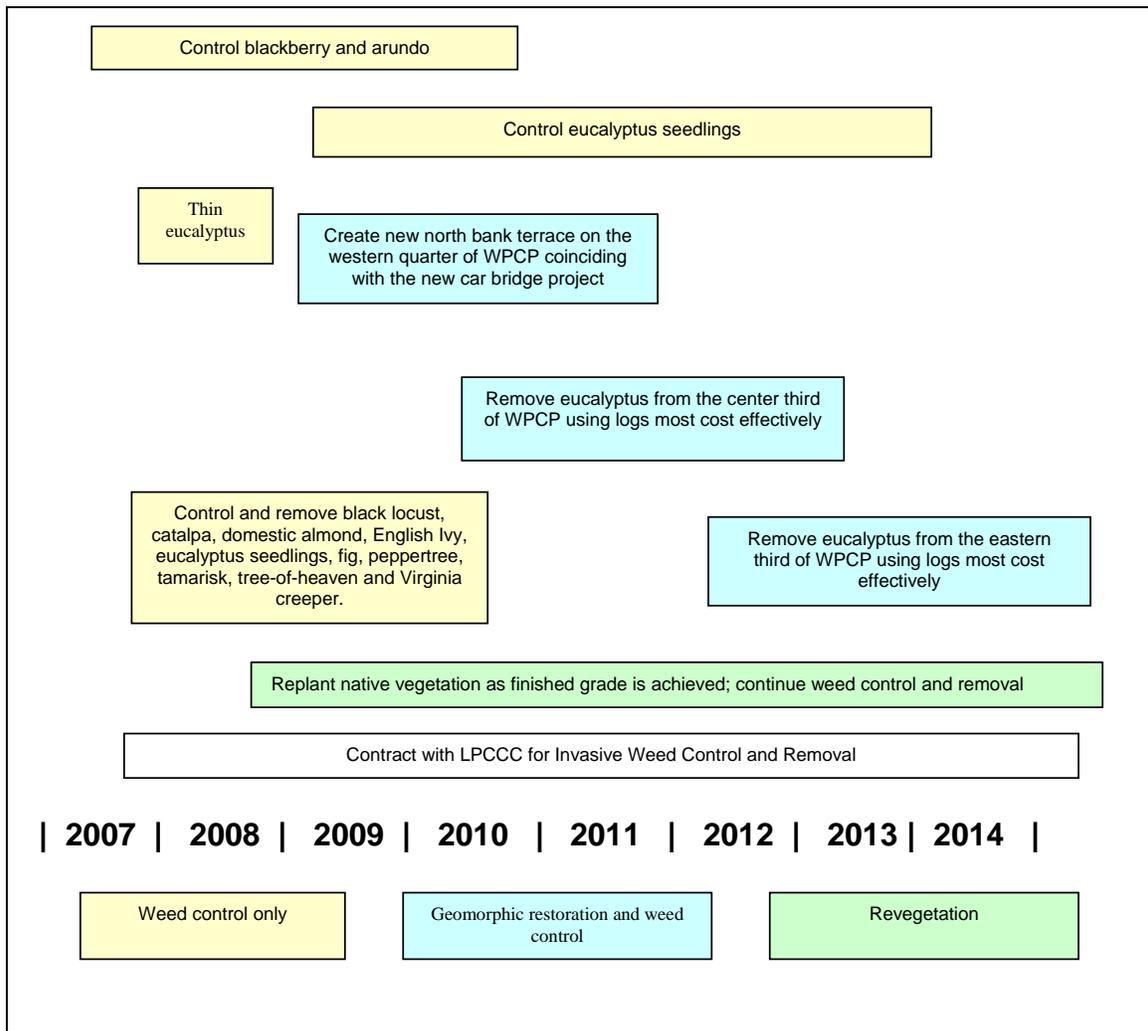


Figure 2: Proposed Schedule & Tasks for Vegetation Removal³

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.

³ 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 issues⁴. 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.

⁴ 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 marbeling 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.

Appendix G

2006 River Parkway Application

APPENDIX C
City of Winters Habitat Mitigation Program

CITY OF WINTERS HABITAT MITIGATION PROGRAM

The City currently faces oversight of the implementation of various habitat mitigation requirements associated with recently approved and pending development project approvals. The purpose of this program is to establish a framework for acceptable satisfaction of these requirements.

The program is formatted as follows:

State and Federal Framework	page 1
Swainson's Hawk	
Other Raptors	
Burrowing Owls	
Valley Elderberry Longhorn Beetle (VELB)	
Seasonal Wetlands Habitat and Species	
General Plan Policy Framework	page 5
Approved and Proposed Projects	page 6
Callahan Estates	
Creekside Estates	
Hudson/Ogando Subdivision	
Winters Highlands Subdivision	
Summary of Habitat Preservation Acreage Requirements	
Statement of Guiding Values	page 9
Mitigation Strategy by Resource	page 10
Swainson's Hawk	
Other Raptors	
Burrowing Owls	
Valley Elderberry Longhorn Beetle (VELB)	
Seasonal Wetlands Habitat and Species	
Framework for Mitigation	page 12
Qualifying Land	
Minimum Standards for the Agreement	
Requirements for the Submittal	

STATE AND FEDERAL FRAMEWORK

Swainson's Hawk -- The Swainson's Hawk is listed as a "threatened" species under the California Endangered Species Act (CESA) and is also protected pursuant to Section 3503.5 of the State Fish and Game Code and the Federal Migratory Bird Treaty Act. Swainson's Hawk impacts are generally distinguished as nesting impacts and foraging impacts. Nesting impacts are those that remove or disturb occupied nesting habitat, including native or nonnative trees along riparian corridors, roadside trees, or isolated trees or groups of trees. Foraging habitat impacts are those that remove suitable foraging habitat, such as open grasslands and agricultural lands that are compatible with their foraging behavior (i.e., hay, grain, and row crops and pasturelands with low vegetative height).

To mitigate impacts to Swainson's Hawk nesting and foraging habitat, mitigation strategies are generally imposed in accordance with California Department of Fish and Game

(CDFG) guidelines set forth in the “Staff Report Regarding Mitigation for Impacts to Swainson’s Hawks in the Central Valley of California” (CDFG, 1994). Pre-construction nesting surveys are required to be conducted during the nesting season. If an active nest is located, or if previously active nests are documented by CDFG, mitigation measures may include delineation of no-construction buffer zones around the active nest site and/or a delay of construction until nestlings have fledged. CDFG guidelines require mitigation for losses of Swainson’s hawk foraging habitat within ten miles of an active nest, and indicate that such losses can be mitigated by providing suitable habitat management (HM) lands (i.e., foraging habitat) based on the following ratios:

- a) Projects within one mile of an active nest shall provide one acre of HM land for each acre of development authorized (1:1 ratio);
- b) Projects within five miles of an active nest tree but greater than one mile from the nest tree shall provide 0.75 acre of HM land for each acre of development authorized (0.75:1 ratio);
- c) Projects within 10 miles of an active nest tree but greater than five miles from an active nest tree shall provide 0.5 acre of HM land for each acre of development authorized (0.5:1 ratio).

Other Raptors – Other raptors are also protected pursuant to Section 3503.5 of the State Fish and Game Code and the Federal Migratory Bird Treaty Act. In the local area, both nesting and foraging impacts are considered mitigated by the same measures that apply to the Swainson’s Hawk. Pre-construction surveys for the Swainson’s Hawk include identification of nests for other raptor species and Swainson’s Hawk foraging mitigation provides mitigation for other raptor foraging impacts.

Burrowing Owls – The Burrowing Owl is designated by the CDFG as a “species of special concern” and is also protected pursuant to Section 3503.5 of the State Fish and Game Code and the Federal Migratory Bird Treaty Act. The Burrowing Owl nests and finds cover in subterranean burrows, typically those made by ground squirrels; however, man-made structures, such as culverts, pipes, and debris piles are also used. It forages primarily in open grasslands, but also uses agricultural types with low vegetative cover.

The Burrowing Owl is not a state or federally listed species; however, its status as a species of special concern indicates that populations are declining or the species is otherwise imperiled in California. Impacts to Burrowing Owls and other non-listed special-status species are typically addressed during CEQA review. To mitigate impacts to Burrowing Owl habitat, mitigation strategies are generally imposed in accordance with CDFG guidelines set forth in the “Staff Report on Burrowing Owl Mitigation” (CDFG, 1995). Surveys are required to be conducted for California Environmental Quality Act (CEQA) review to verify potential habitat and/or the existence of occupied habitat. If an active nest is located, mitigation measures may include delineation of no-construction buffer zones around the active nest site and/or a delay of construction until nestlings have fledged. Where potential habitat exists pre-construction surveys are also required.

CDFG guidelines require mitigation for losses of Burrowing Owl nesting or foraging habitat based on acquisition and permanent protection of a minimum ratio of 6.5 acres of foraging habitat per pair or unpaired resident bird. Enhancement or creation of new burrows on the

protected habitat is required at a ratio of 2:1. Avoidance buffers during the breeding and nesting season may also be required.

Valley Elderberry Longhorn Beetle (VELB) – The VELB is listed as a “threatened” species under the Federal Endangered Species Act (FESA). It is a wood boring beetle that depends entirely on its host plant, the elderberry shrub, for habitat. Elderberry shrubs are generally found in riparian and upland habitats throughout the Central Valley, including the City of Winters. Potentially occupied shrubs are defined as having stems greater than one inch in diameter regardless of the presence of emergence holes (an indicator of VELB use). Shrubs that do not support stems greater than one inch are not considered potential habitat. To mitigate impacts to the VELB, mitigation strategies are generally imposed in accordance with United States Fish and Wildlife Service (USFWS) “Conservation Guidelines for the Valley Elderberry Longhorn Beetle” (USFWS, 1999). Surveys are required to identify potentially occupied elderberry shrubs.

The USFWS has issued a programmatic consultation that requires mitigation as summarized below. The actual mitigation ratio applied depends on several factors including whether the host plant is located in a riparian or non-riparian area, the actual size of the branches that meet the one-inch minimum threshold, and presence of emergence (exit) holes. The guidelines provide a table to determine the appropriate mitigation ratio.

- a) Avoidance with a minimum buffer zone of 100-feet around each plant. Protection, restoration, and maintenance are required; or,
- b) Transplantation to a conservation area; new plantings at a mitigation ratio ranging from 1:1 to 8:1 (new planting to affected one-inch stems); over-story and under-story native species plantings at a mitigation ratio ranging from 1:1 to 2:1 (native tree or plant to new elderberry planting)
- c) The size of the conservation area depends on the number of plantings – approximately 1,800 square feet for every ten plantings (combined elderberry and/or natives).

Seasonal Wetlands Habitat and Species – A variety of state and federal regulations affect aquatic habitat and species, including the Federal Clean Water Act, the FESA, the Fish and Wildlife Coordination Act, the State Porter-Cologne Water Quality Control Act, the CESA, the California Native Plant Protection Act, the State Fish and Game Code, and State Wetlands Conservation Policy (Executive Order). Relevant agencies, depending on the circumstances, include the US Army Corps of Engineers, USFWS, CDFG, and the Central Valley Regional Water Quality Control Board (CVRWQCB).

The impact analysis and mitigation determination process for aquatic resources starts with a biological assessment of on-site features, in particular wetlands. Wetlands are defined differently at the federal and State level, with federal agencies requiring all three wetland indicators (hydrology, soils, and vegetation) and the State requiring only one of the three. Furthermore, wetlands policy differs as well. State policy is generally no net loss of wetlands acreage and values; federal policy is general no net loss of wetlands acreage or values.

If wetlands are present a delineation must be prepared and a determination must be made as to whether they are jurisdictional (meaning they fall under the jurisdiction of the US Army Corps of Engineers (ACOE) pursuant to Section 404 of the federal Clean

Water Act) or “isolated” meaning they are not adjacent to navigable waters and therefore fall outside of the regulation of the ACOE pursuant to the Supreme Court’s ruling in *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*, 531 U.S. 159 (2001) (“SWANCC”).

For avoided wetlands occupied or potentially occupied by federally listed invertebrates, the USFWS generally requires a 250 foot buffer. If the wetlands are jurisdictional, impacts to them will trigger either a general permit under Section 404 or an individual permit. General Permits have already received National Environmental Policy Act (NEPA) clearance. The most commonly applicable general permit that would apply to projects in Winters is Nationwide Permit #39 which covers projects that impact less than or equal to one half acre of wetlands and less than or equal to 300 linear feet of streambed. Whether or not a project can qualify for a general permit is ultimately a determination made by the ACOE. “Minimal impact” standards and compliance with general permit conditions factor into their decision. If the impacts from a project do not fall under a general permit, then an individual permit is required and separate NEPA clearance would be triggered as well.

Impacts to wetlands that contain or provide suitable habitat for federally listed species trigger a consultation requirement under FESA, before a federal Incidental Take Permit (ITP) can be issued to allow the project to move forward. If the wetlands are jurisdictional, the consultation must satisfy FESA Section 7 and requires the USFWS to render a formal Biological Opinion. If the wetlands are non-jurisdictional, the consultation must satisfy FESA Section 10 and requires the preparation of a project-level HCP.

The USFWS has issued a programmatic consultation for impacts to small areas (less than one acre) of vernal pool habitat containing invertebrates. Projects with larger impacts would not be covered by this consultation and may be subject to different mitigation requirements.

- a) a “preservation” requirement of 2:1 for mitigation at a mitigation bank or 3:1 for mitigation on-site or at a non-bank location; and
- b) a “creation” requirement of 1:1 for mitigation at a mitigation bank or 2:1 for mitigation on-site or at a non-bank location.

For jurisdictional wetlands, Section 401 of the Clean Water Act triggers a requirement for Water Quality Certification from the Central Valley Regional Water Quality Control Board. For isolated wetlands similar regulatory authority is provided to the Regional Board through Porter-Cologne Water Quality Control Act. The Water Quality Certification is needed for both individual and general permits from the Corps and the Certification is required before any such permit issued or authorized by the Corps can be acted upon.

It should be noted that invertebrates in general, and “rare” listed plants under the California Native Plant Protection Act, are not regulated under CESA. Therefore, unless the wetlands lie within a stream bed or channel, CDFG has no direct permitting authority except through CEQA. Through their CEQA authority, CDFG generally requires that

permanent wetlands be protected by no less than 100-foot setback buffer areas, and intermittent streams and swales be protected by no less than a 50-foot non-building setback buffer established on each side of the stream. They generally advise that buffers be extended to protect riparian habitats. Where impacts to these resources will result CDFG relies on the State policy of no net loss of wetlands acreage and values for establishing mitigation. Section 1600 of the State Fish and Game Code triggers the requirement for a Lake or Streambed Alteration Agreement if activities are proposed within the bed or bank of a river, stream, or lake including wetlands or riparian vegetation associated with that stream.

At the local level, the City of Winters has separate relevant policies which are discussed below.

GENERAL PLAN POLICY FRAMEWORK

The Winters General Plan adopted May 19, 1992, includes a Natural Resources Element with the following goal and policies relevant to habitat values:

Goal VI.C: To protect sensitive native vegetation and wildlife communities and habitat.

Policies:

- VI.C.1. Prior to approving public or private development projects in areas containing or adjacent to areas containing large trees, riparian vegetation, wetlands, or other significant wildlife habitat, the City shall require the project area and its environs be field surveyed for the presence of special-status plant and animal taxa. Such field surveys shall be conducted by a qualified biologist. If special-status taxa are encountered during the field surveys, appropriate measures shall be developed to minimize disturbance and protect identified populations where feasible.
- VI.C.2. In regulating private development and constructing public improvements, the City shall ensure that there is no net loss of riparian or wetland habitat acreage and value and shall promote projects that avoid sensitive areas. Where habitat loss is unavoidable, the City shall require replacement on at least a 1:1 basis. Replacement entails creating habitat that is similar in extent and ecological value to that displaced by the project. The replacement habitat should consist of locally-occurring, native species and be located as close as possible to the project site. Implementation of this policy should be based on baseline data concerning existing native species. Study expenses shall be borne by development.
- VI.C.3. Unless there are overriding considerations as defined in the California Environmental Quality Act, the City shall not approve any project that would cause significant unmitigatable impacts on rare, threatened, or endangered wildlife or plant species.
- VI.C.4. The City shall support and participate in local and regional attempts to restore and maintain viable habitat for endangered or threatened plant and animal species. To this end, the City shall work with surrounding jurisdictions and state and federal agencies in developing a regional *Habitat Management Plan*. Such plan shall provide baseline data for the Winters area on special-status plant and animal taxa, including Swainson hawk and the valley elderberry longhorn beetle, and provide guidelines and standards for mitigation of impacts on special-status taxa.
- VI.C.5. The City shall require mitigation of potential impacts on special-status plant and animal taxa based on a policy of no-net-loss of habitat value. Mitigation measures shall incorporate as

the City deems appropriate, the guidelines and recommendations of the U.S. Fish and Wildlife Service and the California Department of Fish and Game. Implementation of this policy may include a requirement that project proponents enter into an agreement with the City satisfactory to the City Attorney to ensure that the proposed projects will be subject to a City fee ordinance to be adopted consistent with the regional *Habitat Management Plan*.

- VI.C.6. The City shall undertake a feasibility study for the establishment of an Open Space Preserve between the Urban Limit Line and Grant Avenue west of I-505. Such preserve should be designed to provide for a combination of uses including agriculture, habitat protection, groundwater recharge, and educational and recreational activities. The Open Space Preserve should, to the maximum extent possible, be designed to function as part of the City's flood control and wastewater discharge system. The City should consider requiring developments that cannot mitigate wetlands or riparian habitat impacts on-site to make in-lieu contributions to the establishment, development, and maintenance of the Open Space Preserve or other mitigations consistent with the regional *Habitat Management Plan*.
- VI.C.7. The City shall promote the use of drought-tolerant and native plants, especially valley oaks, for landscaping roadsides, parks, schools, and private properties.
- VI.C.8. Parks, the drainage detention areas, and golf course development shall incorporate areas of native vegetation and wildlife habitat.
- VI.C.9. 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.
- VI.C.10. The City shall encourage and support development projects and programs that enhance public appreciation and awareness of the natural environment.

Policy VI.C.2 is most directly relevant and was used as the basis for local compensatory replacement habitat requirements applied to recent project approvals, which are discussed further herein.

APPROVED AND PROPOSED PROJECTS

The City has recently approved four significant residential projects (Callahan Estates, Creekside Estates, Hudson/Ogando, and Winters Highlands) that required discretionary approvals and CEQA clearance. A brief summary of the habitat mitigation requirements of each is provided below. The full text of the adopted habitat mitigation measures for each project is attached to this analysis (see Appendix A).

As evident below, the mitigation requirements for the Swainson's Hawk are not consistent between project approvals. This is due to the City becoming aware of the lapse in the status of the Memorandum of Understanding between Yolo County, the cities, and the State Department of Fish and Game for this species. As a result, the mitigation wording for Hudson/Ogando and Winters Highlands was modified from the wording used for the earlier projects. This is discussed further below.

Callahan Estates Subdivision (approved April 5, 2005) -- The project is a residential subdivision of 26.4 acres to create 120 single-family lots; Parcels A and D (exchange lots); Parcels E, F, and G (open space lots); and Parcel X (detention pond/well site).

Habitat mitigation summary (full text of mitigation measures attached):

Other Raptors (MM #3) – Nest survey required. Avoidance required.

Burrowing Owl (MM #4) – Nest survey required. Preservation area required per nest per DFG.

Swainson's Hawk (MM #5) – 1:1 preservation of foraging land required for 26.4 acres. Payment of MOU fee allowed.

Wetlands Invertebrates (MM #5.1) – 0.25 acres seasonal wetlands in SE corner. Avoid or do protocol surveys. Mitigation required pursuant to USFWS and DFG requirements.

Seasonal Wetlands (MM #5.2) – 0.25 acres seasonal wetlands in SE corner plus unknown acreage for Highlands Canal onsite. Local 1:1 mitigation required per GP Policy VI.C.2 located either at the City's Community Sports Park site north of Moody Slough Road or at the wetlands site in the northeast corner of the Winters Highlands property.

Creekside Estates Subdivision (approved May 17, 2005) -- The project is a residential subdivision of 13.7 acres to create 40 single-family lots.

Habitat mitigation summary (full text of mitigation measures attached):

Valley Elderberry Longhorn Beetle (VELB) (MM #4) – Species survey required. Preservation area required per bush per USFWS.

Other Raptors (MM #5) – Nest survey required. Avoidance required.

Burrowing Owl (MM #6) – Nest survey required. Preservation area required per nest per DFG.

Swainson's Hawk (MM #7) – 1:1 preservation of foraging land required for 13.7 acres. Payment of MOU fee allowed.

Seasonal Wetlands – None. Not applicable.

Hudson/Ogando Subdivision (approved December 13, 2005) -- The project is a residential subdivision of 15.97 acres to create 72 single-family lots (47 R-1 lots on 10.06 acres; plus 25 R-3 lots on 3.63 acres), Parcel A (5,360 sf) for a small open space or well site, and Parcel Y (93,608 sf) for a proposed City Public Safety Center .

Habitat mitigation summary (full text of mitigation measures attached):

Burrowing Owl (MM #4) – Nest survey required. Preservation area required per nest per DFG.

Swainson's Hawk (MM #5) – 1:1 preservation of foraging land required for 15.97 acres. Payment of MOU fee allowed if MOU is in effect, otherwise land required.

Other Raptors (MM #6) – Nest survey required. Avoidance required.

Wetlands Invertebrates (MM #7) – 0.78 acre seasonal wetlands in the center of the northern portion of the site. Avoid or do protocol surveys. Mitigation required pursuant to USFWS, DFG, and RWQCB requirements, as applicable.

Seasonal Wetlands (MM #8) – 0.78 acre seasonal wetlands in the center of the northern portion of the site. Local 1:1 mitigation required per GP Policy VI.C.2 located either at the City's Community

Sports Park site north of Moody Slough Road, at the wetlands site in the northeast corner of the Winters Highlands property, or elsewhere as directed/approved by the City Council.

Winters Highlands Subdivision (approved April 4, 2006) -- The project is a proposed residential subdivision of 102.6 acres to create 413 single-family lots (including 36 “duplex” lots) on 49.49 acres, a 2.01 acre multifamily lot on which 30 apartments will be developed, a 10.63 acre park site (plus a proposed 10,000 square foot well site), a 7.43 acre wetlands/open space area, an exchange parcel of 0.04 acres to the Callahan property to the south; and 32.81 acres in public roads.

Habitat mitigation summary (full text of mitigation measures attached):

Wetlands Invertebrates (MM #4.3-1a) – Protocol surveys identified 0.67 acre of populated seasonal wetlands (vernal pools) on-site. Mitigation is required pursuant to USFWS requirements.

Seasonal Wetlands On-Site Preserve (MM #4.3.2a) – Preserve and manage in perpetuity 7.43 acres in northeast corner comprised of 0.99 acres wetlands/vernal pools, 2.10 acres open space grasslands, and 4.33 acres of open space buffer.

Swainson’s Hawk and Other Foraging Raptors (MM #4.3-3a) – 1:1 preservation of foraging land required for 102.6 acres. Payment of MOU fee allowed if MOU is in effect, otherwise land required.

Burrowing Owl (MM #4.3-4a/b) – Three owl pair/individuals identified. Pre-construction nest survey required. 19.5 acres of habitat required to be preserved and enhanced per DFG.

Seasonal Wetlands (MM #4.3-5a) – Local 1:1 mitigation required per GP Policy VI.C.2 for the 0.54 acre of seasonal wetlands that occur in the Highlands Canal. Local 2:1 mitigation required per GP Policy VI.C.2 for the 0.81 acre of wetlands that occur outside the Highlands Canal. Total mitigation requirement 2.16 acres. See specified performance criteria.

Other Raptors (MM #4.3-6a) – Nest survey required. Avoidance required.

Riparian Corridor Adjoining Dry Creek (MM #4.3-9a) – Restoration plan required for 50 foot section on either side of Highlands Canal outlet (0.05 acre).

Summary of Habitat Preservation Acreage Requirements

Based on the information provided above by project, aggregate preservation requirements by resources (as currently known) are as follows:

Burrowing Owl – 19.5 acres for Highlands (additional acreage may be required depending on results from site surveys to be completed).

VELB -- 0 acres (additional acreage may be required depending on results from site surveys to be completed).

Swainson’s Hawk – 158.7 acres (Callahan 26.4, Creekside 13.7, Hudson 15.97, Highlands 102.6).

Wetlands Invertebrates – 0.67 acre for Highlands (additional acreage may be required depending on results from protocol surveys to be completed at Callahan project sites).

Seasonal Wetlands – 3.19 acres (Callahan 0.25 + for Canal, Creekside 0.0, Hudson 0.78, Highlands 2.16 comprised of 0.54 at 1:1 and 0.81 at 2:1) (additional acreage may be required depending on results from delineation of Highlands Canal on Callahan site to be completed).

Total – 182.1 acres (additional acreage may be required depending on results from site surveys to be completed as noted above).

STATEMENT OF GUIDING VALUES

It is the goal of the City to achieve the greatest possible social and habitat value from the implementation of the City's habitat mitigation requirements. This is another way to achieve community gains from the various projects, in exchange for the right to develop and the approval to convert these properties to new neighborhoods. Although these development approvals have been for properties planned in the General Plan to convert to residential uses, there are still important community values to be gained in maximizing the mitigation. The General Plan goal and policies listed above support this concept. In light of this, the City will oversee the implementation of mitigation requirements based on the following guiding values:

- Consolidate single-project mitigation into a large and biologically meaningful preserve.
- Maximize open space and habitat value for Winters' community.
- Coordinate with other cities and agencies to maximize land preservation opportunities. This shall include coordination with the JPA to maximize opportunities for joint benefit. It is the intent of the City to remain a partner and participant in the JPA and that this program be consistent with the efforts of the JPA.
- Be flexible, practical, and efficient with resources and opportunities.
- Ensure that this Habitat Mitigation Program (HMP) has been satisfied as early as possible and no later than prior to issuance of building permits. Require mitigation implementation to be consistent with this program.
- Require land dedications generally, but allow use of established mitigation banks under specified circumstances, where the habitat and monitoring requirements are particularly complicated, regulated, or technical.
- Where Swainson's Hawk mitigation for less than 40 acres is a requirement of a project, as a last resort where the developer has made a compelling case to demonstrate their inability to purchase land or easements pursuant to the program, the City retains the authority to allow that developer to pay in-lieu fees through the JPA.

MITIGATION STRATEGY BY RESOURCE

Overall Vision -- Strategies for each impacted biological resource are provided below. If properly implemented, it is the intent that these strategies will result in contiguous acreage of preserved land in proximity to the City comprised of open space and/or cropland adjoining a local creek or slough with significant riparian values. The open space or crop land would be used for Swainson's Hawk mitigation. Mitigation for Burrowing Owl, VELB, and/or seasonal wetlands would be incorporated into the open space or located between the open space/cropland (depending on the presence of existing resources and physical characteristics) and the slough or creek area which would be accepted as mitigation under General Plan Policy VI.C.2. Furthermore, this land would be managed in a manner allowing for controlled open space recreational value to be gained for Winters residents and children, in the form of education programs, trails, viewing points, event gathering areas, etc.

In all cases, the mitigation land must not only be acquired and put under a conservation easement, but the applicant must provide an appropriate endowment to cover management of the land in perpetuity. The applicant must, therefore, provide a management plan acceptable to the agencies and City that identifies the management actions required for the land being set aside.

Swainson's Hawk and Other Raptors – Swainson's Hawk foraging land is easily located throughout the local area and in proximity of the City. As such where mitigation for Swainson's Hawk is triggered, the City will generally not allow it to occur through a mitigation bank, but rather require that it occur on land placed under easement by the applicant, under the management of a local established land trust approved by the City and acceptable to CDFG. In addition, preservation of Swainson's Hawk land generally has the dual effect of preservation of agricultural land in those cases where the foraging land is agricultural row crop land.

The County and all cities within the County have a Memorandum of Understanding executed with CDFG that allows for the payment of in-lieu fees to the Yolo County Habitat Joint Powers Agency (JPA) as mitigation for the Swainson's Hawk. These fees are to be used to make purchases of Swainson's Hawk foraging land and/or easements on such land, for permanent conservation as a precursor to adoption of the Yolo County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP). To date no purchases of mitigation land have been made by the JPA and the MOU has expired.

As written, the City approvals for the Callahan and Creekside projects defer to payment of the in-lieu fees to the JPA for mitigation of Swainson's Hawk. Whereas, the City's approval of the Hudson and Highlands projects indicate that unless the MOU and/or the countywide HCP/NCCP are approved and in effect, the applicants must directly secure land dedications, and can not rely on payment of the in-lieu fee.

In light of the situation and in particular the expiration of the JPA on which the Callahan and Creekside Swainson's Hawk mitigations are based, the City will exercise its discretion on the Callahan and Creekside Swainson's Hawk mitigation requirements by

determining that they can only be properly discharged by land dedication, as would be required of the Hudson and Highlands projects (assuming final approvals for Highlands).

Therefore, for all four projects the City position is that the applicants will purchase and set aside in perpetuity the appropriate acreage of Swainson's Hawk foraging land consistent with the parameters of this report, through the purchase of the underlying land and/or the development rights and execution of an irreversible conservation easement to be managed by a local established land trust approved by the City.

Burrowing Owl – It is possible to successfully create Burrowing Owl habitat and encourage use by Burrowing Owls. Additionally, this species shares some of the same habitat requirements as the Swainson's Hawk, primarily open grasslands. As such, where mitigation for Burrowing Owls is required, the City will not generally allow it to occur through a mitigation bank, but rather require that it occur on land placed under easement by the applicant, adjacent to Swainson's Hawk mitigation land (see discussion above), and under the management of a local established land trust approved by the City and acceptable to CDFG. "Stacking" of Burrowing Owl and Swainson's Hawk habitat on the same acreage is not supported by the City.

Valley Elderberry Longhorn Beetle – A similar situation exists for the VELB. The host plant for this beetle is fairly easy to transplant. Similarly, the success rate for new plantings is high. As such, where mitigation for VELB is triggered, the City will not generally allow it to occur through a mitigation bank, but rather require that it occur on land placed under easement by the applicant, adjacent to and on the fringes of Swainson's Hawk mitigation land (see discussion above), and under the management of a local established land trust approved by the City and acceptable to the USFWS.

Seasonal Wetlands Habitat/Species – The technology for preservation and creation of riparian and wetlands habitat is fairly standard and well understood but in many cases poorly implemented, managed and monitored. Where permitting approval from State or federal agencies is required (as is the case for example where protected invertebrates would be impacted) the mitigation requirements generally become no more technically difficult, however the regulatory requirements seem to increase significantly in the form of bureaucratic oversight. For this reason the City sees a logical distinction between mitigating riparian and wetlands habitat losses pursuant solely to local General Plan Policy VI.C.2 verses satisfaction of State and federal agencies requirements for mitigation of impacts to jurisdictional wetlands and/or protected species.

Pursuant to the General Plan requirements, projects with impacts to riparian or wetland features must mitigate those impacts with land acquisition in the same fashion described above for the Swainson's Hawk. There then needs to be new habitat created on this land that replaces the habitat that was lost due to the project. This General Plan mitigation will not be allowed to occur in a mitigation bank as that removes it from City proximity and does not fully take advantage of the potential to permanently preserve open space around the city.

To the extent that State or federal mitigation is also triggered for jurisdictional wetlands and/or protected species, this may be allowed to be satisfied within the same land acquisition but on separate acreage, but not to the extent that it limits or impairs full satisfaction of the City's General Plan requirements and not to the extent that it might limit the ability of the City and its residents to gain open space recreational value from the dedicated lands and have management autonomy over them. The City recognizes that at both the State and federal level, agencies generally do not support "multi-use" management due to concerns regarding incompatibilities between human activities (even passive) and habitat preservation. Should this be the case, then mitigation for State and federal purposes must occur on separate land.

The mitigation text for the Callahan and Hudson projects specify that mitigation under City General Plan Policy VI.C.2 is to take place at the City's community sports park site north of Moody Slough Road or at the preserved wetlands in the northwest corner of the Highlands project site. However all non-mounded land at the community sports park site will be needed for sports fields and the mounded areas will likely not be suitable for surface wetlands creation due to the underlying landfill cells and hazardous materials concerns. As part of the recent approval of the Highlands project a decision was made not to preserve the wetlands in the northwest corner of the project. Therefore, the City will exercise its discretion to direct that the wetlands mitigation for Callahan and Hudson be satisfied pursuant to this program in the same manner as will be required of the Highlands project.

FRAMEWORK FOR MITIGATION

The City hereby establishes the following framework for habitat mitigation in Winters:

Qualifying Land

- Establish mitigation areas as close to town as practicable without detrimentally affecting likely direction of future growth. The precise acceptability of a particular mitigation property shall be decided on a case-by-case basis to avoid manipulating the market. Generally favorable areas are those that occur in Yolo County within a seven-mile radius of the current City limits (see Appendix B) as of May 2, 2006. Where mitigation is not possible in Yolo County, the first priority shall be mitigation in an approved mitigation bank in Solano County located within a seven-mile radius of the current City limits as of May 2, 2006.
- Isolated mitigation areas should be avoided. They should be contiguous to one another or to other existing preserved land, or as a part of a larger conservation strategy.
- Preserved areas must have equal or better habitat values for the subject species, or must be restored and maintained in perpetuity to such level as part of the mitigation. This shall be demonstrated through the submittal of an assessment of biological value prepared by a qualified biologist acceptable to the City.

- Agricultural land may not be taken out of production for the purposes of qualifying land for this program.
- The property may be zoned or designated for any use but must be redesignated to Agriculture, Open Space, or equivalent designation at the applicant's expense.
- The mitigation area shall be comprised of units of land that meet minimum size (40 acres) and shape requirements (grossly irregular parcels that preclude efficient operation are not acceptable) so as to ensure efficient management. Whether or not particular parcels of land proposed for mitigation are acceptable under these requirements shall be evaluated by the City based on geographic and soil characteristics, natural features (including topography, hydrology, and vegetation), habitat values, adjacent property ownership and land use, etc.
- Existing rural development on mitigation parcels is not acceptable and shall be rejected or discounted from the calculation of net mitigation credit. Planned or proposed rural residential development on mitigation land shall render it unacceptable for this program.
- The mitigation land shall have adequate water supply to support the agricultural use and the water supply shall be protected in the conservation easement.
- Proposed mitigation land shall be examined through a title search for easements or other prior encumbrances and the City and managing entity shall be satisfied that any such encumbrances will not adversely affect the intended use and management of the parcel for habitat mitigation purposes.

Minimum Standards for the Agreement

- The method of preservation must ensure permanent protection of the mitigation land for the habitat uses.
- Control of the land shall be established either through outright purchase (fee title) or through acquisition of development rights.
- As a courtesy, notice of the transaction shall be provided by the applicant to the City or County with land use jurisdiction. Evidence of this shall be provided to the City of Winters.
- Preservation shall be ensured through the use of a conservation easement, deed restriction, or other equivalent mechanism, for specified habitat purposes in perpetuity.
- Identify an appropriate and qualified "managing entity" to hold and manage the conservation easement (e.g. Yolo Land Trust, American Farmland Trust, Trust for Public Land, Nature Conservancy, etc.). This entity must satisfy the definition of a "qualified organization" under Internal Revenue Code Section 170(h) related to

conservation easements and their treatment in the federal tax laws. This entity and the inclusion of any other signatories on the agreement must be acceptable to the City.

- Develop a standard conservation easement agreement to serve as a template throughout the program.
- The agreement shall address funding for ongoing management fees for stewardship, property-specific management, record keeping, transfers, and legal defense. This shall be in the form of a long-term “non-wasting” endowment that comprises a minimum of five percent of the value of the easement, unless a lesser amount is acceptable to the managing entity.
- All owners of the land must execute the instrument.
- The agreement must be recorded and contain an accurate legal description of the mitigation property.
- The agreement must prohibit any activity which adversely affects the habitat value of the mitigation land.
- The City shall be named as a beneficiary under any instrument conveying the interest in the mitigation land to a management entity.
- The interest in the mitigation land shall be held in trust by the managing entity in perpetuity.
- The managing entity may not sell, lease, or convey any interest in the mitigation land except for fully compatible agricultural or open space uses.
- If the managing entity ceases to exist, the duty to hold, administer, monitor, and enforce the interest shall pass to the City to be retained or reassigned.
- The agreement shall specifically address the monitoring requirements of the property including specific performance criteria for the species or habitats being mitigated, contingencies and short-term adaptive management measures (e.g. replanting riparian trees that die in the first three years), monitoring time periods, etc.
- “Stacked easements” refer to the concept of allowing mitigation for one species to occur on the same land (or portion thereof) as mitigation for another species. For example, Swainson’s Hawk and Burrowing Owl. While adjacency and contiguity of mitigation property is required as noted elsewhere, it is the City’s position that the greatest social and habitat value of the mitigation is achieved by having each impacted species/habitat mitigated through separate acreage. Similarly stacking of the General Plan wetlands mitigation with other State/federal wetlands mitigation

requirements is not allowed. Though it may be located within the same land acquisition, it must be located on separate acreage.

- Other specific requirements of the approved project mitigation measures shall be implemented unless otherwise modified herein.

Required Submittals

In order to satisfy the mitigation requirements of the City, the developer must submit appropriate evidence that all requirements of this program have been satisfied. This information will be used by the City to determine whether or not the proposed mitigation property is located strategically to allow maximum benefit from the preservation program. This shall include the following:

- A legal description of the property including water rights and water supply.
- Evidence of control of the land (e.g. title report) and documentation regarding any outstanding loans.
- Disclosure of any easement (including mineral rights), physical condition, or other material fact that would preclude or substantially impair the intended use.
- A draft conservation easement or other proposed mechanism. The agreement must contain language that requires outstanding loans and mineral rights to be subordinated to the mitigation interests.
- A letter from the proposed managing entity confirming their qualifications to manage the property, their interest in the property, and agreement to accept the conservation easement.
- A letter of acceptance from the State Department of Fish and Game if necessary to satisfy State mitigation requirements.
- Letters of acceptance from other responsible agencies if appropriate.
- Information on soils, topography, hydrology, and vegetation prepared by a qualified professional, as determined by the City.
- A history of use and practices on the property included as part of a Phase I Environmental Site Assessment that meets applicable standards in the industry.
- A map of the property and surrounding area depicting the following:
 - Lands in the vicinity of the proposed mitigation property that have restricted development rights such as a conservation or habitat easement, flowage or flood easement, etc., already in place.
 - A delineation of the proposed mitigation property

- Parcel numbers, ownership, zoning, and acreage.
 - Soils, topography, hydrology, and vegetation for the mitigation property and surrounding parcels in the vicinity.
 - 100-year floodplain, landfills, or other such limiting features.
 - Known areas of special status species habitat.
 - Structures and residences.
- Any other information required by the City.

APPENDICES

A – Project-Level Biological Mitigation Measures (verbatim)

B – 7-Mile Radius Map

APPENDIX D
**Draft Cultural Resource Investigation for the Solano County, California Winters Putah
Creek Park Percolation Dam Removal and Floodplain Restoration Project**

Draft
Cultural Resource Investigation for the
Solano County, California

Winters Putah Creek Park Percolation Dam Removal and Floodplain Restoration Project



Prepared for:
Solano County Water Agency

January 22, 2007

EDAW | **AECOM**

Draft
Cultural Resource Investigation for the
Solano County, California

Winters Putah Creek Park Percolation Dam Removal and Floodplain Restoration Project



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MANAGEMENT SUMMARY

The Solano County Water Agency (SCWA) is proposing the restoration and enhancement of the Winters Putah Creek Park property along Putah Creek near Winters, California. The Winters Putah Creek Park project area lies at the southern edge of the city of Winters and extends east to I-505. It is further bordered on the south by Putah Creek Road, and by private housing developments to the north.

The California Environmental Quality Act (CEQA) of 1970 and Section 106 of the National Historic Preservation Act (NHPA) require the consideration of project-related impacts on cultural resources within a project area. To meet the requirements of CEQA and Section 106, SCWA contracted with EDAW to provide an inventory and assessment of cultural resources within the proposed project area. This report does not constitute a CEQA analysis. An analysis for potentially significant cultural resources and, if required, mitigation measures, would need to be conducted as part of the project CEQA review. This report will be submitted to the Northwest Information Center of the California Historical Resources Information System for information sharing purposes.

The cultural resource investigation conducted for the proposed project involved a process of archival / repository research, oral history interviews, and a field visit to the project area. This study resulted in the identification of two historic-era bridges; the Yolo-Solano Bridge, and the old Southern Pacific Railroad Bridge. No other historic or prehistoric resources were observed during the field investigation.

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INTRODUCTION

The Solano County Water Agency (SCWA) is proposing the restoration and enhancement of the Winters Putah Creek Park property along Putah Creek near Winters, California. The Winters Putah Creek Park project area lies at the southern edge of the city of Winters and extends east to I-505. It is further bordered on the south by Putah Creek Road, and by private housing developments to the north (Exhibit 1).

PROJECT DESCRIPTION

The proposed project has been divided into two phases. Phase I examines weir construction, habitat enhancement, and the removal of 1930s-era percolation dam remains within the Winters Putah Creek Park area. Phase II involves the development of recreational opportunities within Winters Putah Creek Park. This project is proposed, in part, due to a lack of flood force dissipation on this portion of Putah Creek, and its negative effects on lateral and vertical channel stability in the Winters Putah Creek Park area.

PROJECT PERSONNEL

Work for this project was conducted by professionally trained historians and archaeologist who meet the Secretary of the Interior's Standards qualifications. The following individuals played key roles in the investigation:

Angel Tomes, M.A. received her graduate degree in Public History from California State University, Sacramento. She has seven years of cultural resource management experience, with extensive work conducted on historic urban and rural buildings and structures. Ms. Tomes was the primary investigator and report author for this project.

Brian Ludwig, PhD received his doctorate degree in Anthropology from Rutgers University. He is a cultural resource specialist with more than 26 years of experience. Dr. Ludwig served in a review capacity for the project and associated report.

ENVIRONMENTAL SETTING

To better understand the origin and meaning of cultural resources located within and in the vicinity of the current project area, a cultural context must be established. The following section provides a cultural setting of the project region. Prehistoric and ethnographic overviews of the project area are more thoroughly covered in the Lower Putah Creek Watershed Management Action Plan (EDAW 2005), so are briefly summarized here. The historic setting is more comprehensive in order to provide a platform with which to view the resources under discussion.



Source: SCWA 2006

Project Location Map

Exhibit 1

PREHISTORIC SETTING

Native Americans have inhabited coastal and interior portions of California for about 10,000 years. The Putah Creek watershed, with its varied topography and rich floral and faunal resources, has been an important area for settlement and subsistence for at least 5,000 years. Although no direct evidence for the earliest inhabitants has been found in the Putah Creek area, the Paleo-Indian Period (10,000 B.C. to 6000 B.C.) was the timeframe which saw the first entry of humans into California. Many of the earliest sites were probably located along the post-glacial coastal shoreline. Rising water levels have now covered those sites and most interior sites that remain are situated along lakeshores, or areas that used to be lakeshores (Fredrickson 1973). While Paleo-Indian artifacts have never been found in the Putah Creek or Solano County regions, it is likely that these people at least traveled through the region, hunting the prolific game that would have lived in the area and gathering seasonally available plant materials.

ETHNOGRAPHIC SETTING

The region including Putah Creek in the southern portion of the Sacramento River Valley, from the town of Princeton south to San Pablo Bay and Suisun Bay, was occupied by the Patwin from late prehistoric or early historic times until the Mexican and European settlements. Their traditional territory extended 90 miles in length and 40 miles wide, covering three physiographic regions from east to west: both banks of the Sacramento River and its dense tree, vine, and brush vegetation interspersed with great tule marshes; flat open grassland plains with occasional oak groves; and the lower hills of the eastern Coast Range. Most of the population was concentrated along the river in large villages and in smaller settlements along the Putah Creek and Cache Creek drainages (Johnson 1978). Villages along Putah Creek included Chemocu, Putato (or Poo-tah-toi), and Liwai where the present-day cities of Davis and Winters now stand.

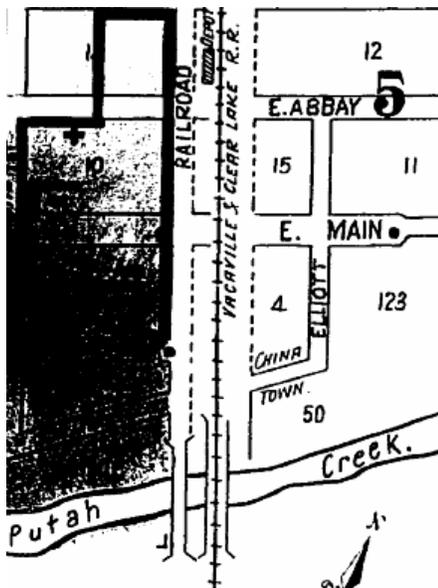
HISTORIC SETTING

Permanent European settlement in the Winters area began in 1842 when John R. Wolfskill was granted the Rancho Rio de los Putos Mexican land grant. Wolfskill, who had undertaken agricultural pursuits and stock raising on the land, was soon joined by his brothers Milton, Mathus, and Sarchel. By the late 1850s, others were settling on the land bordering the rancho's boundaries. Eventually, land within the rancho was subdivided, and the sale of tracts brought in additional settlers, among them Theodore Winters, a racehorse breeder who purchased the Wolfskill holdings in 1865, and established a racetrack in the southern part of what would become Winters (HEC 1983).

The area's first town, Buckeye, was established ca. 1865, approximately 2 miles northeast of Winters. This fledgling community was short-lived, however, and by 1875 was abandoned when the Vaca Valley Railroad bypassed the small town and extended its line into Yolo County. The railroad, having received the commitment of

land from Theodore Winters and D.P. Edwards, and financial assistance from area landowners, made plans for a new depot and town-site named Winters, after the local entrepreneur (HEC 1983).

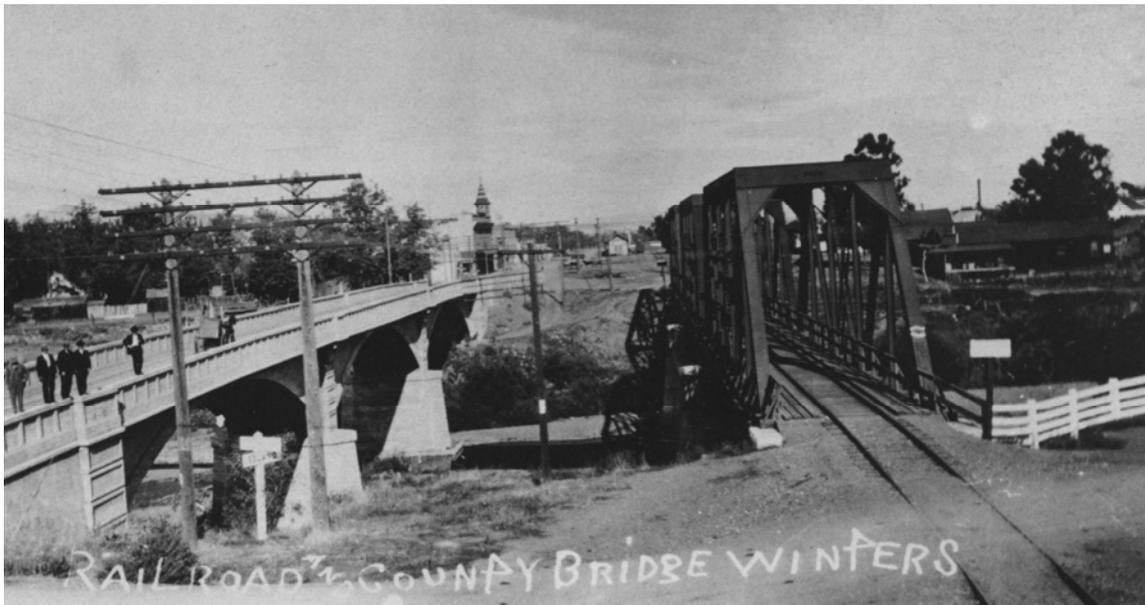
The town of Winters grew rapidly at this time, largely due to its status as the northeastern terminus of the Vaca Valley Railroad. By the late 1870s, Winters had become a busy agricultural and commercial center, with three trains daily, and rapid business and residential developments, some of which were by a local Chinese population (Larkey, pers. comm., 2006, HEC 1983).



Having originally come to the area in the 1870s to work on the railroad, some Chinese, upon its completion, settled in the Winters area and established a small commercial district of their own along Putah Creek (Exhibit 2), adjacent to and perhaps partly within the area that comprises the current project location. By the 1890s, many Japanese had also come to the region to work on local farms and ranches, and before long, established themselves in the small Asian community (Larkey, pers. comm., 2006). Apricots, peaches, cherries, plums, pears, oranges, almonds, figs, barley, wheat, and vegetables were all grown and harvested in the area, with agriculture being the primary source of economic activity for all segments of the community.

Exhibit 2. Sanborn Map of Winters, 1928

The city of Winters was incorporated in 1898, and by the first part of the twentieth century, had undertaken many civic improvements including: new water, sewer, and lighting systems; concrete sidewalks, a public drinking fountain, and the construction of two new bridges for railroad and highway traffic. The two bridges are depicted in Exhibit 3. Although the growth of the town slowed from 1920–1940, the strong agricultural base sustained the community during the Depression years (HEC 1983).



**Exhibit 3. The Yolo-Solano and Southern Pacific Railroad bridges.
Asian district buildings visible on right, 1908.
Photo courtesy of J.R. Chapman and Joann Larkey.**

Like many other communities across the country, World War II re-invigorated the town of Winters which, in these later years, saw a gradual transition from the fruit industry to the nut industry. Rather than expand the town boundaries, many of the buildings in town were enlarged or otherwise remodeled around this time. The buildings in what was then referred to as “Japanese Town” were abandoned when the Japanese were interred during World War II, and later burned down immediately before their release from the internment camps. Much of this area is now occupied by the Winters Community Center (Larkey, pers. comm., 2006).

Today Winters remains a small town with a strong agricultural economic foundation. While the rapid growth that occurred in the late nineteenth century has not been repeated, Winters retains a stable population base, and maintains a strong sense of community.

RESEARCH METHODOLOGY

EDAW’s research into cultural resource issues included a review of pertinent background information on the study area. Project personnel made visits to a number of libraries and repositories including: the California State Library’s California History Room, the California State University, Sacramento library, and the Winters Branch Library. An oral history interview was conducted with local historian Joann Larkey in order to obtain additional information on the history of the project area.

PRE-FIELD RESEARCH

In order to determine the presence of any recorded sites, features, or artifacts that could be affected by the proposed project, EDAW archaeologists conducted a record search through the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS). According to NWIC files, at least 14 archaeological sites or isolates are known to be within the Putah Creek corridor (Table 1.).

An additional 27 sites or isolated artifacts have been found within ¼ mile of Putah Creek; however, are situated away from any potential impacts resulting from activities related to the proposed project, and are not listed here. The known resources within the current project area include the two historic-era structures, the Yolo-Solano Bridge, and the old Southern Pacific Bridge. No other sites or isolates are known to occur within the proposed project area.

Site Number	Site Type
P-48-433	Farmstead
P-48-509	Lithic Scatter
P-48-510	Concrete Bridge
P-48-517	Battered basalt cobble
P-57-187	Lithic Scatter
CA-Sol-10	Occupation Site
CA-Sol-19	Occupation Site
CA-Sol-21	Mound / Occupation Site
CA-Sol-253	Occupation
CA-Sol-257	Lithic Scatter
CA-Yol-164	Village of ku'ndihi
HR1 3/089	Yolo-Solano Bridge (1907)
HR1 6/194	Stevensen Bridge (1923)
Old Southern Pacific Railroad	Truss Bridge

The records search also included, but was not necessarily limited to, a review of the following resources and publications:

- ▶ *Directory of Properties*, Office of Historic Preservation (2006)
- ▶ *California Points of Historical Interest*, State of California (1992)
- ▶ *California Inventory of Historic Resources*, State of California (1976)
- ▶ *California Historical Landmarks*, State of California (1996)

- ▶ *National Register of Historic Places*, Office of Historic Preservation
- ▶ *California Register of Historical Resources*, State of California (database maintained)
- ▶ *Survey of Surveys* (1989)
- ▶ General Land Office (GLO) Plat map (1854 – 1867)

FIELD INVESTIGATION

A field visit was made to the project area by an EDAW archaeologist on December 6, 2006. Visibility within the project area was heavily obscured by blackberry stands and other understory vegetation that covered much of the ground surface. Relatively open areas were periodically scraped by the archaeologist in an attempt to view the soil. No archaeological resources were observed during the survey.

Two historic-era resources were noted during the field visit, the Yolo-Solano Bridge, and the old Southern Pacific Railroad Bridge. Both of these structures are documented on the *Winters Architectural Heritage* list, which inventories buildings and structures of importance to the community. An EDAW architectural historian photographed and recorded both bridges on the appropriate Department of Parks and Recreation forms.

SURVEY RESULTS

ARCHAEOLOGICAL RESOURCES

No archaeological resources were observed during the survey conducted for this investigation.

HISTORIC-ERA RESOURCES

Two historic-era bridges were identified within the project area. Both of these structures, described below, are documented in the *Winters Architectural Heritage* list.

YOLO-SOLANO BRIDGE

This concrete arch bridge (Exhibit 4) carries Railroad Avenue over Putah Creek. Constructed in 1908, the bridge measures 461 feet long and 22 feet wide. At the time of its construction, this structure was hailed as the longest bridge of its kind west of the Mississippi. This bridge was built by W.N. Concannon of 4,500 yards of concrete and reinforced by 70 tons of iron.

Yolo and Solano Counties shared the expense of the structure, which cost \$50,000. A shared dedication for this bridge, and the Southern Pacific Railroad Bridge, was held on April 1, 1908 at East Main and Elliott Streets. Over 3,000 people attended the affair, which included musical programs, various speeches, a barbeque, and a dance at the Opera House (HEC 1983).



Exhibit 4. Yolo-Solano Bridge. Photo by EDAW, 2006

SOUTHERN PACIFIC RAILROAD BRIDGE

This Pratt through truss bridge was built in 1906 by the Southern Pacific Railroad Company (Exhibit 5), and was the fourth attempt to bridge Putah Creek in this location. The first two railroad bridges were washed out by storms in 1877. The third structure, a combination wagon and rail bridge, served until 1906, when the current truss bridge was constructed.

With the decline and eventual stoppage of rail service, the tracks were removed from the bridge in the 1970s, and the property sold to the city of Winters for a community center. Subsequently, former Winters resident and Southern Pacific president, Alan Furth, presented the bridge to the town for use as a bike path (HEC 1983).



Exhibit 5. Southern Pacific Bridge. Photo by EDAW, 2006.

RESOURCE SIGNIFICANCE

CALIFORNIA REGISTER OF HISTORICAL RESOURCES

The significance of cultural resources within the project area is measured against the criteria outlined in the CRHR. The California and National registers require that sites eligible for listing be afforded degrees of protection ranging from preservation to the mitigation of adverse impacts. Determining the CRHR eligibility of historic and prehistoric sites located within the study area is guided by Sections 21083.2 and 21084.1 of the Public Resources Code (PRC), and the CEQA Guidelines (California Code of Regulations Title 14) Section 15064.5. In the CRHR, cultural resources are defined as buildings, sites, structures or objects that may have historical, architectural, archaeological, cultural or scientific importance. A cultural resource may be eligible for listing on the CRHR if it:

1. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. is associated with the lives of persons important in our past;

3. 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
4. has yielded, or may be likely to yield, information important in prehistory or history.

In California, if a prehistoric or historic resource does not necessarily meet any of the four CRHR criteria, but does meet the definition of a “unique” site as outlined in the PRC (Section 21083.2), it may still be treated as a significant resource. This is the case if it is an archaeological artifact, object or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. It contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. It has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. It is directly associated with a scientifically recognized important prehistoric or historic event.

These two sets of criteria operate independently to ensure that potentially significant effects on archaeological and historic resources are considered as a part of a project’s environmental analysis. PRC guidelines Section 5097.98, also recommend provisions be made for the accidental discovery of archaeological sites, historical resources or Native American human remains during construction.

NATIONAL REGISTER OF HISTORICAL PLACES

Determining the NRHP eligibility of cultural resources under Federal administration is guided by the specific legal context of the site’s significance as set out in Section 106 of the National Historic Preservation Act (NHPA) (16 USC 470), as amended. The NHPA authorizes the Secretary of the Interior to expand and maintain a National Register of districts, sites, buildings, structures and objects of significance in American history, architecture, archaeology, engineering and culture. A property may be listed in the NRHP if it meets criteria for evaluation defined in 36 CFR 60.4:

The quality of significance in American history, architecture, archaeology, engineering and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association and:

- (a) That are associated with events that have made a significant contribution to the broad patterns of our history;

- (b) That are associated with the lives of persons significant in our past;
- (c) That embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess a artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) That have yielded, or may be likely to yield, information important in prehistory or history.

Most prehistoric archaeological sites are evaluated with regard to Criterion d of the NRHP which refers to site data potential. Such sites typically lack historical documentation that might otherwise adequately describe their important characteristics. Archaeological methods and techniques are applied to gain an understanding of the types of information that may be recovered from the deposits. Data sought are those recognized to be applicable to scientific research questions or to other cultural values. For example, shellfish remains from an archaeological deposit can provide information about the nature of prehistoric peoples' diet, foraging range, exploited environments, environmental conditions and seasons during which various shellfish species were taken. These are data of importance to scientific research that can lead to the reconstruction of prehistoric life-ways. Some archaeological sites may be of traditional or spiritual significance to contemporary Native Americans or other groups, particularly those sites which are known to contain human burials.

Historic bridge inventories typically identify four attributes that assist in defining significance in the area of bridge engineering:

- ▶ rarity,
- ▶ use of new or innovative design or construction methods,
- ▶ daring engineering achievement,
- ▶ and aesthetics.

Bridges are also further evaluated for significance within the general context of their design type.

YOLO-SOLANO BRIDGE

Research did not indicate that this bridge was significantly associated with persons considered important in local history (Criterion 2/B). This bridge type is relatively common in California and throughout the United States, and does not represent distinctive architectural characteristics or engineering qualities (Criterion 3/C). This type of resource is well represented in both written and visual sources, and does not appear to be a source of important primary information (Criterion 4/D).

However, the Yolo-Solano Bridge, as a reinforced concrete arch structure, represents the popularity concrete bridges were gaining during the early part of the twentieth century. While not a rare bridge type, it served as a major travel and communication access point for the town of Winters during its early development; a role it continues to play today. Because of its association with the early development of Winters, this bridge appears to be eligible for listing on the CRHR under Criterion 1 (NRHP Criterion A), at the local level.

SOUTHERN PACIFIC RAILROAD BRIDGE

The Southern Pacific Railroad Bridge is another common bridge type ubiquitous in California. The Truss bridge design dates back as early as the mid-nineteenth century, when various forms of trusses were being developed primarily as railroad bridges. The earliest of such structures were of wood and iron. Eventually, three truss designs would dominate the landscape: the Howe truss, the Warren truss, and the Pratt truss. Of these, the Pratt truss came to dominate truss bridge construction. Invented by Thomas Pratt, a Boston architect/engineer, and his father Caleb Pratt, the Pratt truss bridge was distinctive in that it included vertical compression members and diagonal tension members. This design was especially adaptable to the all-metal bridges that were being constructed in the United States in the early nineteenth century; first in iron, and later in steel.

Pratt truss bridges were constructed in great numbers as railroad structures during the period of rapid highway improvement that took place in the late nineteenth and early twentieth century. By the end of World War I, newer materials and designs began to surmount the popularity of the truss (Mikesell 2001).

Research did not indicate that this bridge was significantly associated with persons considered important in local history (Criterion 2/B). This bridge type is relatively common in California and throughout the United States, and does not represent distinctive architectural characteristics or engineering qualities (Criterion 3/C). This type of resource is well represented in both written and visual sources, and does not appear to be a source of important primary information (Criterion 4/D).

While not an uncommon type of bridge, the Southern Pacific Railroad Bridge in Winters appears eligible for listing on the CRHR under Criterion 1 (NRHP Criterion A) at the local level for its association with the early development of Winters. Although not the first crossing at this location, this bridge was constructed during a time of great growth and civic improvement in the town of Winters, and represents a period of prosperity for the then burgeoning community.

RECOMMENDATIONS

Although no new archaeological resources were discovered during the reconnaissance survey conducted for this project, the possibility remains that subsurface resources could be present. If an inadvertent discovery of cultural

materials (e.g., unusual amounts of shell, animal bone, glass, ceramics, etc.) is made during project-related construction activities, ground disturbances in the area of the find shall be halted and a qualified professional archaeologist shall be notified regarding the discovery. The archaeologist shall determine whether the resource is potentially significant per the CRHR and develop appropriate mitigation. Mitigation may include, but not necessarily be limited to, in-field documentation, archival research, archaeological testing, data recovery excavations or recordation.

CONCLUSIONS

EDAW, under the auspices of the SCWA, undertook a cultural resource investigation of the Winters Putah Creek Park area in conjunction with the Winters Putah Creek Percolation Dam Removal and Floodplain Restoration project. Two historic-era bridges 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 the two bridges would be affected by project activities

Although no archaeological resources were observed during the field investigation, cultural material could be present subsurface or beneath the underbrush covering the ground surface. Because of previously recorded archaeological sites in the vicinity of the project area, it is recommended that an archaeological monitor be present during any project-related ground disturbing activities.

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Maps

Sanborn Fire Insurance Map. Dixon. 1928

Personal Communication

Larkey, Joann. Local Dixon historian and author. December 7, 2006—personal communication with Angel Tomes of EDAW on regarding history of the project area.