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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 rigput 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.

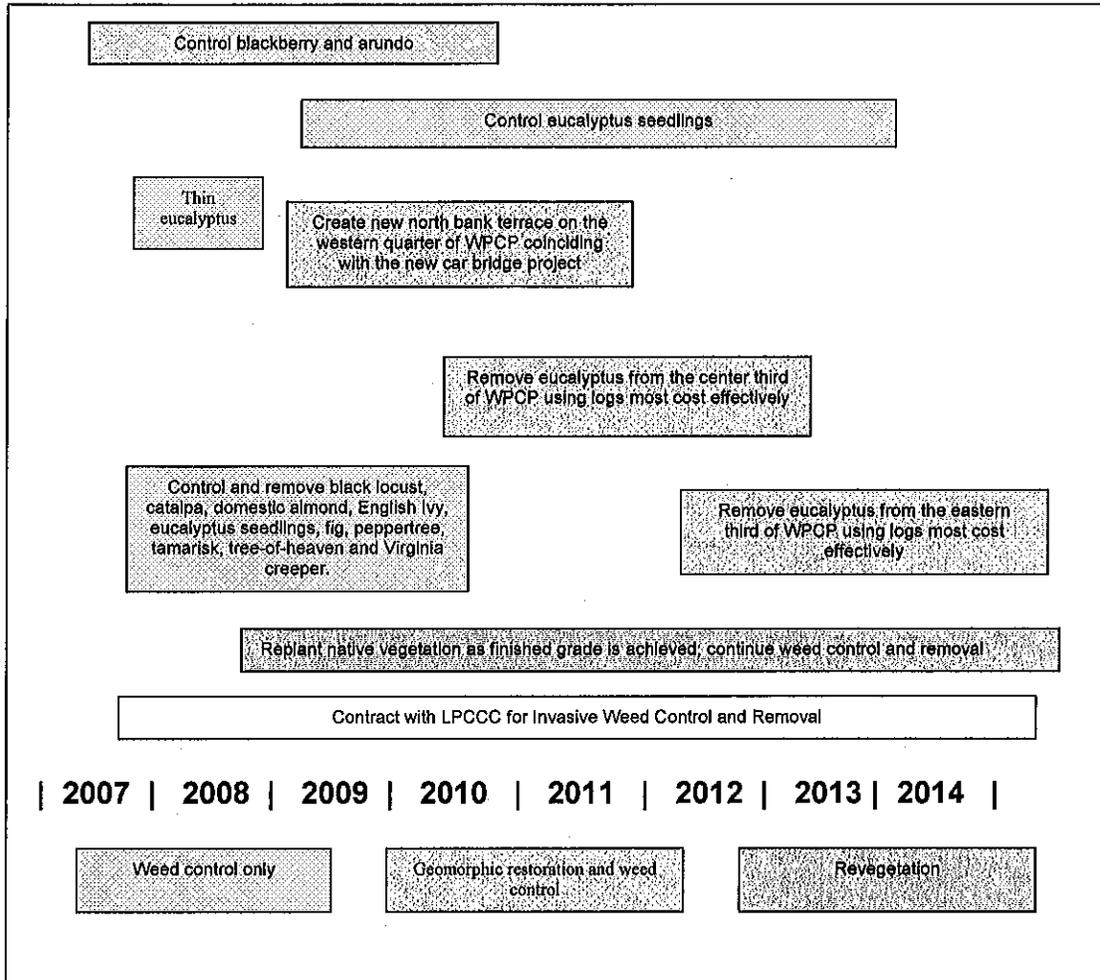


Figure 2: Proposed Schedule & Tasks for Vegetation Removal³

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

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

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

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

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

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

Yellow star thistle (*Centaurea solstitialis*): Native of Eurasia, yellow star thistle was introduced into California in the gold rush with the onset and spread of alfalfa production. It occurs in clearings with sunny exposures. Milestone Herbicide and Transline Herbicide (chloryralid) 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 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

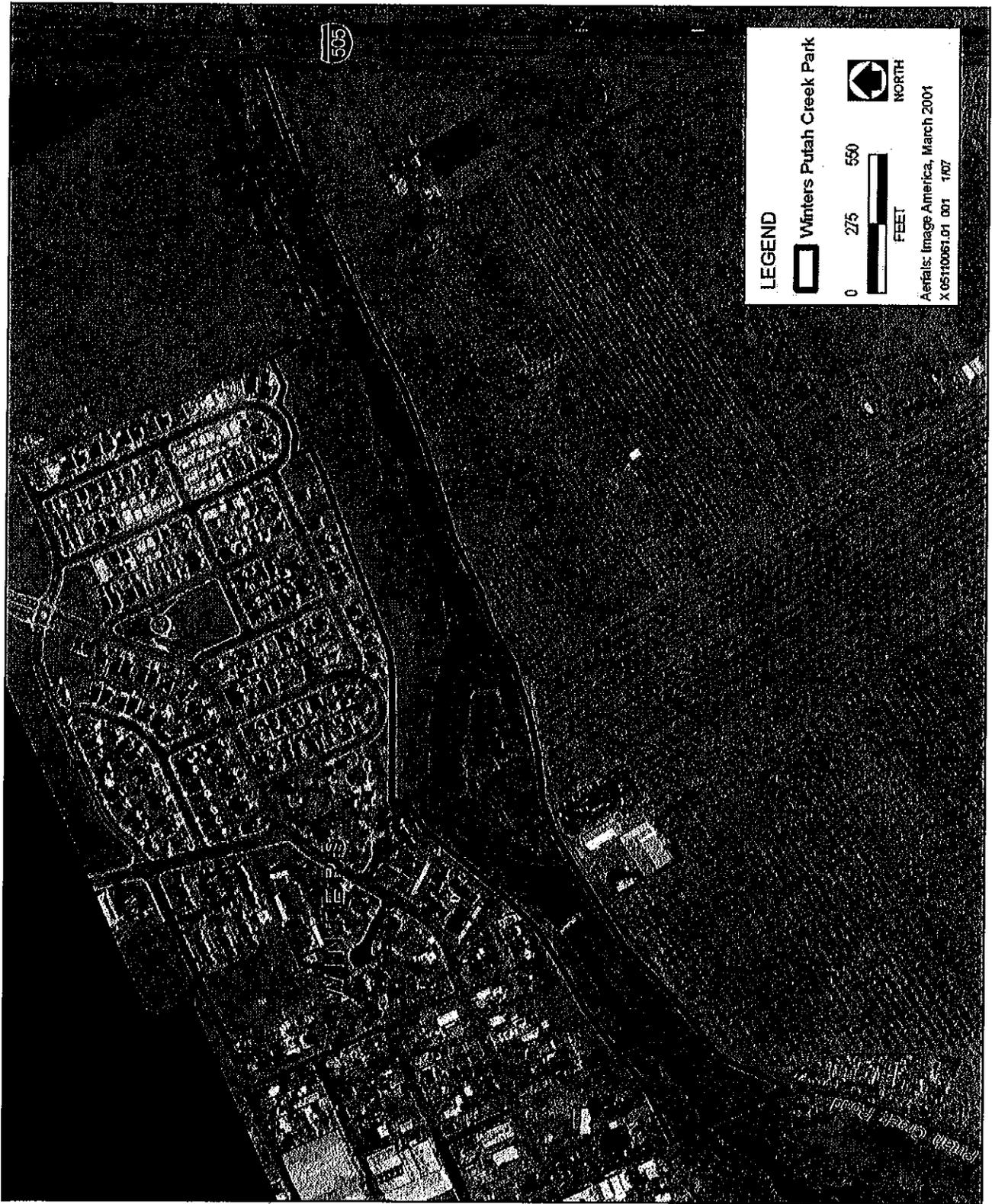
Work for this project was conducted by professionally trained historians and archaeologist who meet the Secretary of the Interior's Standards qualifications. The following individuals played key roles in the investigation:

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.

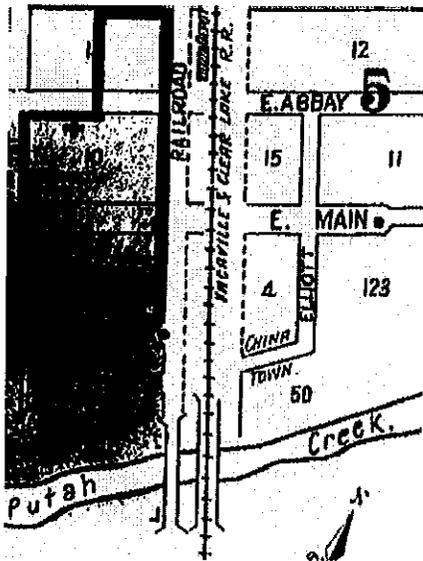
HISTORIC SETTING

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).

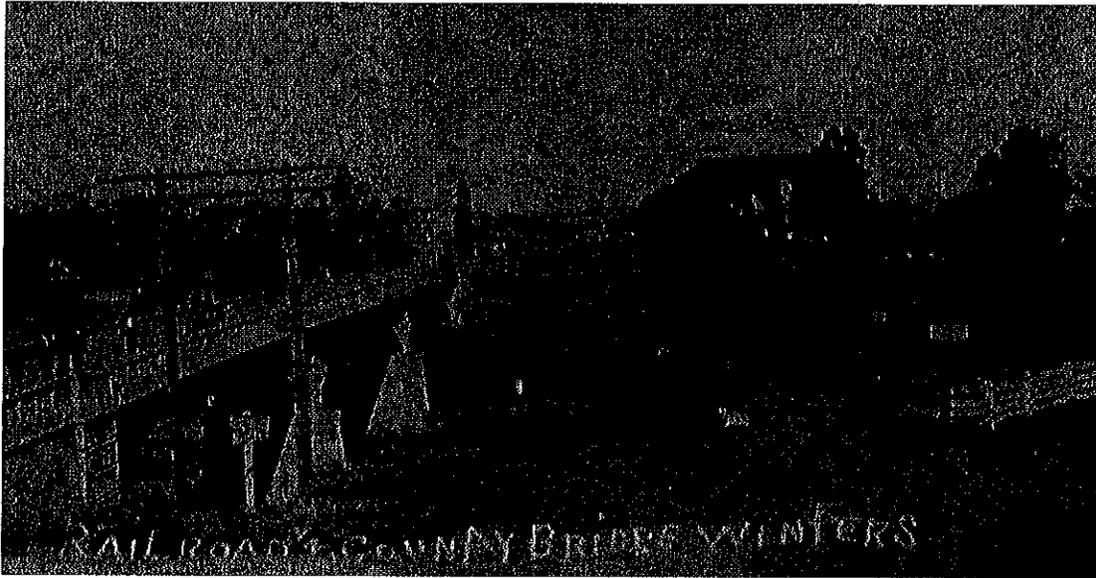
The town of Winters grew rapidly at this time, largely due to its status as the northeastern terminus of the Vaca Valley Railroad. By the late 1870s, Winters had become a busy agricultural and commercial center, with three trains daily, and rapid business and residential developments, some of which were 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.

Table 1 Sites within the Putah Creek Corridor	
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 note 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).

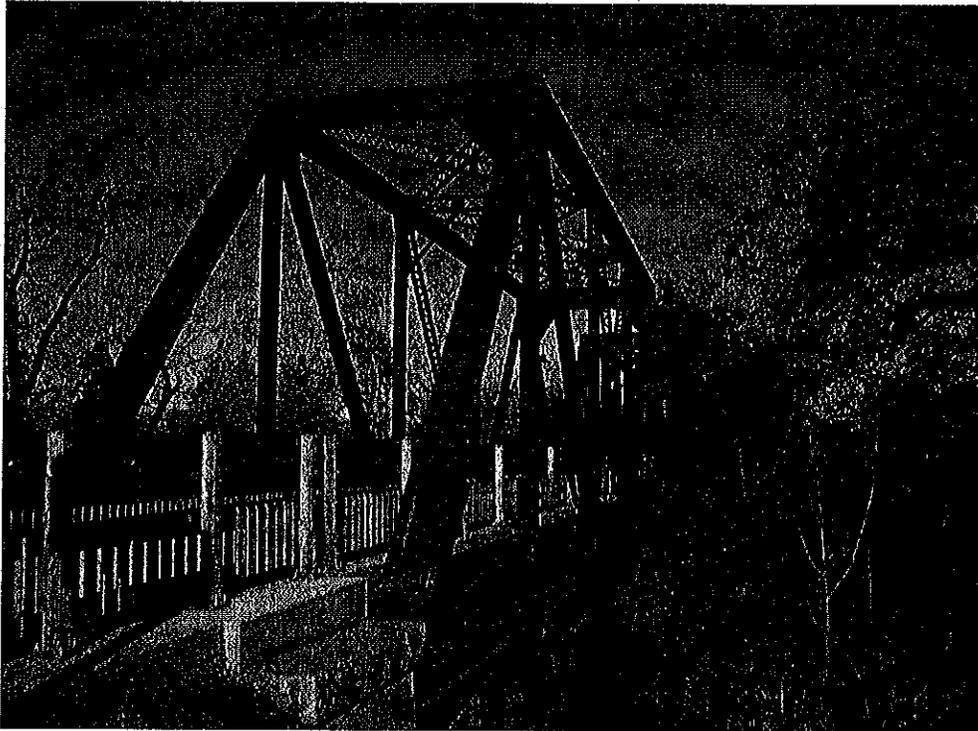


Exhibit 5. Southern Pacific Bridge. Photo by EDAW, 2006.

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 these 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.

Comments on Negative Declaration for
Putah Creek Nature Park Draft Master Plan

May 4, 2008

Jeffrey D. TenPas

From: Jeff TenPas, 24 East Main St., Winters, CA 95694

Attention: Kate Kelly, Planning Manager, Community Development Department, 318
First St., Winters CA 95694

I am a resident of Winters, and manager of a statewide watershed restoration program in my professional life. As a citizen I regularly perform volunteer work along the creek, and almost from the day twelve years ago that I moved to Winters, I have done trail-building and volunteer work that was most needed to facilitate better public access and use of this area. Also as I walk along the creek in the project area several times a day, I closely observe the creek and its environmental condition.

After review of the Master Plan and Initial Study and Mitigated Negative Declaration, I have serious concerns that the plan will provide little if any ecological benefit, that there is a significant risk of ecological harm, and the plan will have a significant negative impact on recreation, and a great cost in dollars. While the Master Plan is well meaning, it lacks the scientific underpinnings that should be there. My comments on the Initial Study follow.

1. Project Description - Insufficient project description and information to complete an analysis of the potentially significant impacts. The project description and information in the draft Winters Putah Creek Nature Park Master Plan and supporting documents are inadequate to assess the impacts of the project. For example the documents give no estimate on the amount of earth-moving or the construction traffic that the project may entail. How many days or weeks of construction traffic, noise, and dust will be created? How many truckloads of fill will be needed for the project? This information or estimates need to be provided so that the public is informed and decision-makers can make an informed decision. The environmental review in its present form totally lacks a statement or discussion of what will happen in real terms in the course of implementing the Plan.
2. Project Analysis -- Lack of scientific studies to support design. There is no basis in hydrologic or geomorphic studies or any other scientific analyses to support a stream realignment project here. Poore (2003) prepared a "Winters Park Habitat Enhancement Proposal" that includes proposed instream work in the project area, but no channel realignment.

A stream realignment as proposed in the Master Plan introduces great disturbance into the stream environment, is expensive, and risky. Rosgen (2006) outlines an eight step approach to natural channel design projects. A similar scientific and public policy approach should be followed here.

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Yates (2003) studied habitat and spawning conditions for anadromous fish on Putah Creek and made recommendations for future studies, but no recommendations for channel alteration.

3. Air Quality- potential for substantial contribution to an existing air quality violation. The Initial Study does not adequately assess the potential for significant impact on air quality, and the project may contribute substantially to an existing air quality violation even with the proposed Mitigation Measure AQ-1. The Master Plan and channel realignment project will involve probably the largest concentration of large construction and earthmoving equipment use in Winters history. We know from the 2007 Rivers Parkway grant application that 34,000 cubic yards of fill is proposed for just the upper 1200' or 20% of the stream realignment alone. That is the equivalent of 3400 10 yd dump truck loads, and a lot of traffic. This traffic could be multiplied five times over to 17,000 trips to complete the entire proposed project. The environmental review should estimate the impact of all the construction traffic, and importation of fill, on ozone, ozone precursors, and PM10 and the increase in air quality violations.
4. Air Quality – exposure of sensitive receptors to substantial pollutant concentrations. The Initial Study does not adequately consider the potential exposure of sensitive receptors to substantial pollutant concentrations. There are multiple residences lying within 200 ft of the construction zone along Putah Creek, and more in the along the potential path of construction traffic and dump trucks bringing in fill. The people living in these residences will be exposed to some unspecified, unexamined, and potentially high amount of exhaust fumes and construction dust for unknown lengths of time. A study should be done to estimate the exposure of Winters residents along Putah Creek for the number of days and potential concentrations of pollutants that may result from the project. From the 2007 River Parkways grant application, the number of trips can be estimated, travel routes and time can be estimated, and exposures can be calculated. There is no assurance that the Mitigation Measure in limiting equipment idle time can lower the impact to a less than significant level, and no attempt has been made to use the available plans and information to address the question.
5. Biological Resources - risk of a substantial adverse effect on Chinook Salmon, an endangered species. The Initial Study needs to but does not consider the potential that the project will have a significant impact on Chinook salmon and salmon redds. There is a risk that failure of this channel realignment project will result in long term and chronic instability in the realigned channel, with consequent erosion and sedimentation.. This project introduces a great deal of disturbance to over a mile of floodplain and channel in a stream that is habitat for the endangered Chinook salmon. Even well-studied and designed channel realignment projects can and do fail. In this case the risk of failure is heightened by: 1) the lack of hydrologic and fluvial geomorphic analysis, 2) the removal of the percolation dam and the grade stabilization in has provided, and 3) placement

of 34,000 cubic yards of fill upstream of the location where grade stabilization is removed. (This according to the River Parkways grant application, October, 2007, for implementation of realignment for the 1200' upstream of the percolation dam.)

There is an engineering report on the potential affects of percolation dam removal on the piers of two bridges 1000' upstream (WRECO, 2008) that predicts channel degradation and erosion after removal of the dam. Disturbing the floodplain and adding fill would compound the potential bed and bank erosion and downstream sedimentation of salmon spawning habitat. Moreover the Master Plan concedes that the project is designed to allow the stream to erode its own channel. There is a high risk that flooding and erosion during winter storms will result in sedimentation and smothering of salmon redds. This issue can only be clarified by the appropriate level of hydrologic and geomorphic analysis which needs to be done before a determination of no significant impact can be made. The proposed mitigation measure BR-5 concerning timing of grading activities will in no way address the erosion and sedimentation problem.

6. Biological Resources – fish passage at the percolation dam. A review should be done of the conditions under which the dam may impede fish passage. The review should determine under what flow conditions this occurs, the probable duration of those flows, and other possible mitigations than removing the dam.

The Master Plan bases the case for percolation dam removal in large part on a presumption that the dam is an impediment to fish passage. There is however little evidence of this. To the eye and for anyone who has seen salmon migrating, it is hardly credible that the dam would impede salmon. A survey and report by personnel from the Fish Passage Improvement Program of the California Department of Water Resources supports this view (Hogle et al, 2004). Moreover, salmon spawning surveys by a group led by Dr Moyle of UC-Davis show the salmon are in fact spawning upstream of the dam. Finally, a routine application of a fish passage assessment protocol would also serve to show there is little impediment to fish passage that is posed by the dam.

Possibly at some vary particular and short term flows there might be some difficulty in upstream passage. Even if that were the case, that would be short term as the flood would rise or fall to a favorable flow. The DFG letter cited in the Master Plan suggests that debris behind the dam might also obstruct passage. That is a situation I have watched for and never seen, but I do also make certain to help keep the dam clear so it does not occur. The possibility could however be mitigate and improved from the present condition with minor changes in the dam.

7. Biological Resources - risk of a substantial adverse effect on riparian habitat. Specifically in the reach from the car bridge to the percolation dam, there is a riparian floodplain with a mature, native, riparian woodland that would be drastically disturbed by the proposed project with no apparent scientific

justification. A statement in the Initial Study that “the riparian zone is in very poor ecological condition” is not at all consistent with the rating this area would receive under usual assessment protocols for rating riparian condition. The project riparian areas should be evaluated by a Riparian Proper Functioning Condition assessment or other similar assessment tool to clarify the existing condition.

Currently, the stream channel, banks, and riparian areas are quite stable. Yates (2003) found:

- a. “The alignment of the creek channel has been very stable over the past century. The few apparently natural changes in alignment all occurred prior to construction of Monticello Dam except at the confluence with Dry Creek.”
- b. “Profiles of channel invert elevation and cross-sectional area have also remained quite stable since prior to construction of Monticello Dam. Eliminating the sediment supply from upstream sources does not appear to have resulted in significant incision or widening.”

The disturbance introduced by this project may upset the existing stable conditions and degrade habitat.

The proposed Mitigation Measure BR-6 does nothing to mitigate affects if existing habitat in good condition is unnecessarily disturbed and degraded. And subsequent review during permit applications for a restoration project may not bring to the fore the existing good conditions if an appropriate analysis is not done at this stage.

8. Financial Cost. Neither the Master Plan nor the Initial Study provides estimates of the potential costs of the proposed channel realignment projects.
9. Need for a Hydraulic Study of Flooding and Inundation of the Floodplain. The project needs a study of the flooding and floodplain inundation under the existing condition. Without such a study, there is no way to analyze the need for the significant expense and environmental disturbance that is proposed here. Personal observation tells me that what are claimed to be “non-functioning” floodplains are in fact functioning as they ought to, and adjusting naturally to the changes in flood regime and sediment supply.
10. Cultural Resources – Loss of Culturally Significant Swimming Hole. Who could deny that summer days spent a swimming hole are one of the most memorable experiences in a young life? The fact that the percolation dam and swimming hole have a name – Little Rock – speaks volumes for this swimming holes social and cultural significance. It is in fact unique and not matched by any other swimming hole on Putah Creek. Numerous users come in family groups, and numerous people coming to Little Rock now have told me they come because their parent came years ago, or brought them as a child. Another friend in Winters told me of swimming at the dam during World War II when she was

recruited as a summer worker in fruit picking to replace others gone to war. It would be interesting learn how and when it got its name. Demolishing the percolation dam and losing Little Rock is a significant impact to a cultural resource that is not mitigated.

11. Geology and Soils – soil erosion. The Initial Study needs to assess the risk of a substantial increase in soil erosion. The project proposes to disrupt and disturb 10 or more acres of riparian area that are annually exposed to flood flows and erosion. This area is now in a stable vegetated non-eroding condition. The banks too are stable. See Yates (2003). Channel realignment, removal of a grade control structure in the channel, importation of fill, and a lack of cover on new surfaces will unquestionably increase erosion. Erosion will be most pronounced in the new stream bed and banks, and may persist as a chronic condition.
12. Water Quality – water quality standards. The Master Plan, supporting documents, and Initial Study fail to assess the likely affect on bank and channel erosion, and stream sedimentation that will occur as a result of this project. Hydraulic and hydrologic studies that should be done would show, based on the new channel design, how stable the channel would be and what size substrate would be transported under typical conditions. Without such studies and without more a more complete design, there is no way to assess the impacts or review the water quality impacts of the project. The Master Plan and supporting documents are simply inadequate for environmental review of the affects of the project. Either a more complete project design will need to be provided for this CEQA review, or another CEQA review will have to be tiered from it. In any case, it is reasonable to assume potentially significant water quality impacts from a project that introduces this magnitude of disturbance to a floodplain.

The Negative Declaration proposes that permits that may be needed will mitigate the affect of the project to a less than significant level. However, under CEQA there needs to be enough scientific study and information at the time of CEQA review to reach the conclusion that the projects affects can be and will be mitigated to a less than significant level. Now is the time for these studies, not after CEQA approval. If scientific data is not gathered now, we have no assurance it will ultimately be gathered and made available later, or that it will receive public notice and comment.

13. Water Quality -- mercury contamination. Putah Creek in this section currently is subject to a Health Advisory from California EPA that warns against eating too much fish caught in the stream on account of mercury. Mercury is stored in stream bank and floodplain sediments, and may be released by floodplain disturbance. There should be an assessment and review of the affect of this project on the mobilization of mercury into the water column. The proposed project has the potential to increase the mercury exposure of people who consume fish caught in the creek in the project vicinity.

14. Water Quality – swimming. One affect of removal of the percolation dam will be to substantially degrade the water quality for swimming. The reason that the Little Rock swimming hole is the highly preferred and almost exclusive swimming location in Winters is because of the affect the percolation dam has on water quality. In summer, anywhere else in Winters, pools deep enough for swimming have slack water with no discernible current, and unfortunately there is a thin film on the surface. Slack still water with a film on the surface does not make good water quality for swimming. The dam has two affects on water quality. First, it creates a thin sheet of fast moving water that flows across the surface of the swimming hole; the opening in the dam happens to constrict the flow to a small fast current at the surface. Second, the dam holds back whatever floats on the surface of the water upstream, including the surface film, because the upstream opening in the dam dips slightly below the surface so that what floats on the surface is held behind the dam.

The dam thus makes a difference in water quality that is crucial to the attractiveness for swimming. Taking out the dam will make a difference in water quality just to this one short section of creek, yet it is a critical difference.

15. Noise – risk of substantial increase in noise from project implementation. The Initial Study acknowledges that there will be construction related noise, but fails to put in plain terms what that will mean to nearby residential properties. In fact the grant proposal for channel realignment from the car bridge to the percolation dam calls for 34,000 cubic yards of fill, or 3,400 loads on 10 yd dump trucks. The access routes of these dump trucks are unspecified, and will likely pass within 50 ft of numerous residential properties. That alone would result in noise impacts that present a significant increase over ambient noise levels, and are also out of compliance with the Winters Zoning Code. The study also gives no consideration to the noise that would be created by jack hammering and blasting during demolition of the dam.

The potential noise impacts need to be further determined, reviewed, and explained to the public and decision-makers so that an informed decision can be made on this project. The study should estimate how many days, and during what hours, construction will increase noise levels in the homes very near to the project. Some of the abutters are likely to have 2nd or 3rd shift jobs and are likely to be significantly affected by the project.

The proposed mitigation measures are moreover inadequate to provide the assurance that noise levels will actually be below a maximum of 69 db as proposed. There is no compliance testing, without which there is likely to be a significant level of noncompliance. A low income neighborhood is likely to bear a significant impact without there being an enforceable mitigation measure that assures compliance and public reporting. This is the most massive earthmoving and construction project proposed in Winters' history, and should be given more

than a cursory review of noise impacts.

16. Recreation – swimming. This project will directly impact on and eliminate by far the best and most used swimming hole on all of Putah Creek. There is no other public swimming hole on all Putah Creek that comes close in terms of use (TenPas, 2006). This swimming hole is unique in water temperature, water quality, and public access. Taking out the dam will have a significant unmitigated and direct impact on recreation and on human beings that the environmental review should address but does not. I have provided the City on several occasions with a report of a survey of recreational use at Little Rock and can provide it again.

This is an issue of great public concern. This was the main concern of public who came to the meetings on the Master Plan. In recognition of concern, over 400 people from Winters and the surrounding region have signed petitions to ask for protection of the swimming hole.

There are other swimming holes along the creek, but none are remotely comparable in use or quality. The next public access sites upstream at Lake Solano are cold all year and not used for swimming. Public access sites downstream are used early in the year, but become too warm and algae-ridden already in May because of the inexorable warming of water as it moves downstream. Winters and Little Rock are essentially in the ideal location temperature-wise as cold water releases from the Diversion Dam are warming as they move downstream. Because of this, Little Rock is used many people from Winters and the surrounding region. Winters has other smaller minor swimming holes, but those get little use and do not have the water quality of Little Rock.

Little Rock swimming hole will be lost as a result of the percolation dam removal with several factors involved. First of course is the loss of the hydraulic conditions created by the dam that maintain a large and deep swimming hole. Secondly, removal of the dam removes a grade control so that sediment stored upstream will move downstream and fill the hole. Finally, is the loss of the water quality benefits of the dam.

The dam has other related benefits to swimming. The surface of the dam essentially functions as a beach and is preferred almost to the exclusion of any other location along the creek. The attractions are probably the smoothness of the surface, and the exposure to the sun.

17. Recreation – fishing. Taking out the percolation dam also removes the most popular fishing platform on Putah Creek in Winters. This too is an affect the Initial Study fails to analyze and address.
18. Recreation – walking trails. The current 1995 Master Plan recognizes the existing public use and values of the dam, and included the dam in a trail system. The

dam in fact provides a good dry crossing of the creek, needing only better access from the banks down to the dam. The 1995 Master Plan included plans for better access. With the dam, there is the opportunity to make a good short loop trail of about ½ mile from the Community Center, over the Railroad Bridge, down the south shore, across the dam, and return to the Community Center.

The proposed Master Plan revision proposes stream crossings just at the Railroad Bridge and then 1 mile downstream at I-505. This would make more than a two mile roundtrip, and would eliminate most walkers from using the trail. Taking out the dam and its crossing also cuts off the south bank from any ready access for people entering the park at East Street or Creekside Way. The only alternative would be to wade, or cross by the proposed rock weirs. I have seen people crossing by the existing rock weir, but it is quite unsafe. In the end, taking out the dam which the City has labeled as a liability for unspecified reasons, would probably result in injuries as people attempted to cross the rock weirs being proposed.

Rosgen, David. 2006. Natural channel design using a geomorphic approach.

Hogle et al 2004, A closer look at impediments to Chinook salmon migration in Lower Putah Creek

Poore, Rick, 2003. Winters park habitat enhancement proposal.

TenPas, Jeff. 2007. Recreational use at Little Rock, Winters, CA, summer 2006.

WRECO, 2008. Impact assessment of downstream percolation dam removal.

Yates, 2003. Gravel and temperature surveys of Lower Putah Creek

RECREATIONAL USE AT LITTLE ROCK

WINTERS, CA, SUMMER 2006

BY JEFF TENPAS, WINTERS, CA

JANUARY 2007

A proposal has been made and a \$452,000 grant secured to remove the old percolation dam in Winters. Below the dam is a large swimming hole, popular with Winters youth and families, called Little Rock. The pool and dam structure are used for fishing and swimming, for sunbathing, and as a stream crossing. A survey of recreational use at Little Rock was conducted in Summer 2006 in order to assess the potential impacts of the proposed demolition of the dam. The survey was conducted by Jeff TenPas and Sally Brown, Winters, CA.

To summarize, the survey showed there were 2,000 to 3,000 recreational use days at Little Rock between June 15 and September 14, 2006.

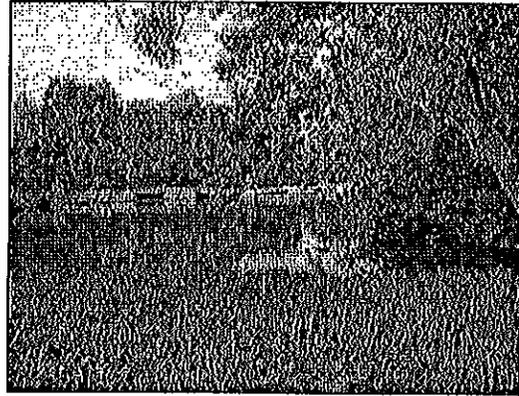
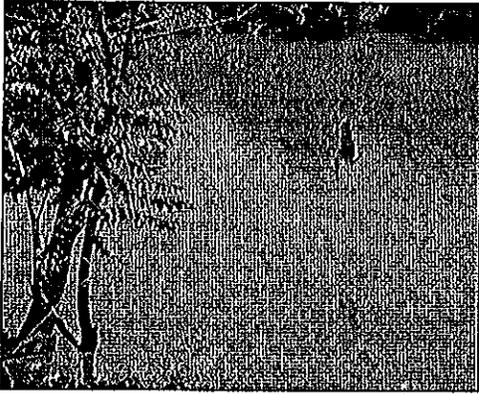
Setting. The Little Rock swimming hole is located in Winters on public property. It is several hundred yards downstream of the Railroad Ave. bridge crossing Putah Creek. The pool, formed by the scouring action of water falling over the dam, is the widest and deepest pool along the creek. The pool is approximately 180 feet long and 120 feet wide.

On the Winters side of the creek there is access from three directions. From the Community Center on Railroad Ave you can follow a path downstream several hundred yards to Little Rock. You can reach it from East St. by going to the end and turning right on a path around the East St Pump Station. From the east end of town, you can enter city property from Creekside Way and follow a narrow trail upstream.

The dam is an old gray concrete structure standing 3 to 4 feet above water level, but with 3 passages (14' wide by 3' deep) through it at water level. It has a broad 15' wide top, and is about 120' long. At normal stream flows, water flows through one or more of the passages. There is no appreciable drop of water level through the dam, and no obstruction to fish passage with water about 6 inches deep as it flows past the downstream edge. The dam constricts the flow of water through it so that it creates a perceptible current across the surface of the swimming hole.

Although the old structure is called a "dam", that is a misnomer for a structure that impounds no water. At normal flows water passes freely through the structure through one or more passages. The structure could be described more accurately as a weir, and also serves as a bridge or fishing pier, and its broad top as an artificial beach.

Access down to the dam from the top of the banks is poor - a steep climb over large rock riprap. The stream banks below the dam are covered with more large riprap, protecting the banks from erosion. The stream and stream banks long ago adjusted to the structure and are stable.

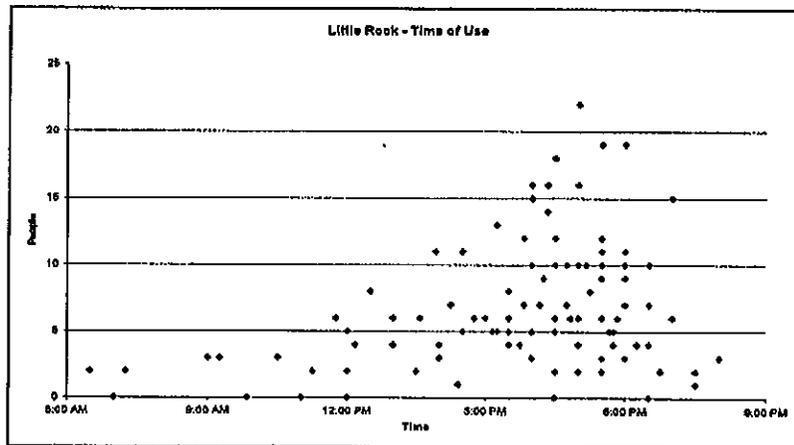


Methods. Surveyors TenPas and Brown live in a home backing to City property along Putah Creek and near the dam. They regularly walk their dog past Little Rock and made counts of users during these walks in the summer of 2006. People were counted if they were on the dam, swimming in the swimming hole, using the rope swing, or fishing the pool below the dam. User counts were made between June 30 and September 14, 2006.

The unit of measure used was recreation user days – so that a person counted once for each day they came, but not twice on the same day. TenPas also talked to many users, discussing where they were from, why they swam here, and advised them of the plans to remove the dam, and took names and contact information.

Results. A total of 105 counts were made. The number of counts made per day varied from 0 to 5, and there was at least one count on 55 of 77 days in the survey period. Due to the work schedules of the survey team, the most counts were made between 4 and 6 pm (42 of 77 days in the survey period). The number of users present at each count varied from 0 to 22. The 105 counts yielded a total tally of 698 recreational users present. The full data from the recreational use survey are in Appendix 1.

The figure below shows the recreational use by the time of day.



The figure shows that peak use was concentrated in the afternoon, when temperatures are at their highest. The table below shows the day divided into seven time periods and the average use during each daily time period. The table shows low average use of one to two people in the morning, and a peak use between 4 and 6 pm with an average of 8.98 visitors at Little Rock at that time of day.

Table 1. Average Daily Use at Little Rock by Time of Day – June 30 to September 14, 2006								
Time	Before 8 am	8:00-9:59 am	10:00-11:59 am	Noon-1:59 pm	2:00-3:59 pm	4:00-5:59 pm	6 pm on	Est. Daily Use
Number of counts	6	3	6	10	18	42	20	
Average Number of users	1.00	2.00	1.83	4.80	6.06	8.98	7.10	31.8

The survey data was used to estimate total recreation user days for the summer of 2006. Table 1 shows there were an estimated 31.8 visitors to Little Rock each day between June 30 and September 14. Total estimated visits to Little Rock in this time period is 31.8 visitors per day times 77 days, or 2441 recreational use days. For June 15 to June 29 there is no data, but it is reasonable to estimate at least half as many daily visits, or 16 per day and 240 for those 16 days. The estimated total recreational use from June 15 to September 14 adds to 2681 recreational use days.

There is uncertainty to any estimate based on a sample. The estimated use in June may have been more than half the later use, or users may have been inadvertently double counted. The 2681 recreational user day estimate could be a little high or a little low, and is probably best stated as a range.

The number of recreation use days for June 15 to Sept. 14 is estimated to be 2,000 to 3,000 use days.

In addition to numbers of users, a few notes were made on types of use. The predominant recreational users were middle school and high school youth. Swimming, using a rope swing, and sunbathing on the dam were the predominant uses. Besides the use by youth, there was considerable use by families with children, both for swimming and fishing. There are notes which show: "Winters father with 4 kids at rope swing, three fishing (parents and child), four 8th grade girls swimming, two mothers with two daughters." Fishing was a common use with 43 recreational users noted as fishermen. The deep pool scoured below the dam provides a unique fish habitat. The dam and south bank were the more popular fishing points. Fishing times at the dam were concentrated in the morning and evening when other uses were low.

Surveyor TenPas made contacts with over 100 of the recreational users, primarily on weekends. Contact was made mainly to take contact information and discuss the pending proposal to demolish the dam. This was only a small sample of the total individual users but resulted in some additional user information. From the names and notes collected it appears the users were about 1/3 female and 2/3 male. Their phone numbers show that the swimming hole is a regional resource - 10% of the phone numbers collected were from outside 530 area code. There were people who came from Vacaville, Dixon, Davis, and Woodland.

Talking to the users showed that most were not at all aware of the proposed demolition project – including most of the Winters residents. By the end of the summer however word of the project had spread, and the sentiment of most was against it.

Discussion. It is clear from the survey that the dam and Little Rock swimming hole are an important recreational resource. Most of the users were Winters youth for whom the dam was readily accessible by bike or foot. None of the users contacted reported swimming anywhere else on Putah Creek on public land, although a few boys reported using a rope swing at a small swimming hole downstream that is on private land.

Users reported that they did not use other pools along the creek in Winters because of the grime or film on the surface. During the summer all the deep pools on the creek have a film on the surface that discourages swimming, all that is except at Little Rock. The dam clears up the problem. Two things happen at the dam, first the dam blocks some of the floating surface film behind the dam, and second the dam creates a fast current that disperses whatever comes through. The dam essentially creates a swimmable pool where there would otherwise be none.

The use by people from out of town was notable. They come because of a scarcity of good publicly accessible swimming holes elsewhere. Upstream at Lake Solano, the water is too cold for swimming. Downstream at Stevensons Bridge swimming is okay in spring but too warm and full of algae in the summer. Some of these users reported a longtime connection to the Little Rock swimming hole through family and friends.

The dam supports fishing by creating the deep pool below it and provides a pier and water crossing. Being able to get out on the water was an advantage to fishermen not wanting to lose lines.

The reality of Little Rock may contrast somewhat with its reputation of old. Some friends and neighbors report that some people think of the dam as a site of drinking and smoking and not suitable for kids. The reality however is that the primary daytime users were youth and an all around good bunch – mostly clean, orderly, and not a problem. The level of use and adult traffic along the creekside path these days discourages problems.

Conclusion. Every youth should be so fortunate as to have a summertime swimming hole, and Winters youth are so fortunate that they have the Little Rock in their backyard. By good fortune the temperature in Putah Creek is right for swimming right here in Winters, and by great good fortune the old dam made the best of swimming holes. Simply demolishing the dam would have a big and unintentional impact and change that forever. If the dam is simply demolished and flood plains constructed as proposed, then there is no reason that water quality at Little Rock would not become like the rest of the creek in Winters and have a filmy layer on the surface.

In this case it pays to take a good look at the reasons for taking out the dam, they need to be given thorough scientific analysis. Although dam removal may sound like a "no-brainer", that is not the case here. Instead of rushing ahead with dam removal and loss of recreation, the City should ask for alternatives that address safety issues without ruining the Little Rock for swimming. Long established recreational use by Winters' youth of yesterday and today and prospects for another generation should be protected in the design.

Because there is so much established recreational use of Little Rock, there is significant public opinion on dam removal and alternatives to it. Public input and process should be an important part of revision to the Master Plan for the Putah Creek Nature Park. Significant opportunities for public input should be provided.

Cheryl Sullivan author of the 1995 Master Plan for the Putah Creek Nature Park wrote about recreational use at the dam at that time noting that "collapsed percolation dam area is a popular fishing and swimming site. Fish are able to pass through the dam to spawn at the upper reaches of Putah Creek." That was a good observation then, and it is even more true now.

If we adapt the dam instead of demolish it, we would have a good part of \$452,000 to spend in Winters Putah Creek Park on other high priority projects: for example access improvements and safety modifications to the "dam", acquisition of property, development of a trail system, repair of storm drain erosion problems, connection of the creekside trail to the railroad bridge, and building an inviting entry arch from the Community Center parking lot to the trail system. The state grant award specifically states that projects may be changed and grant funds applied to any work that meets the objectives of the River Parkways Program.

Appendix 1: Survey of Recreational Use at Winters percolation dam, aka Little Rock

Date	Time	Count		Date	Time	Count	
30-Jun	4:30 PM	8		23-Jul	9:15 AM	3	3 fishing
1-Jul	4:45 PM	10			4:20 PM	16	
2-Jul	6:30 AM	2		24-Jul	4:30 PM	18	
	1:35 PM	6		25-Jul	4:00 PM	16	
	3:45 PM	4		26-Jul	6:00 PM	19	
	6:30 PM	0		28-Jul	2:00 PM	4	8th grade girls
	8:00 PM	3		29-Jul	5:00 PM	18	two 6th graders
3-Jul	9:50 AM	0		30-Jul	7:00 PM	15	fishing
	12:00 PM	2		31-Jul	7:00 PM	6	fishing
	2:25 PM	1	fishing	2-Aug	6:30 PM	4	
	5:30 PM	11		4-Aug	2:15 PM	7	
	6:45 PM	2		5-Aug	5:00 PM	10	
4-Jul	7:15 AM	2		6-Aug	4:00 PM	15	4 in canoe on pool
	9:00 AM	3	3 fishing	8-Aug	5:00 PM	8	
	10:30 AM	3			7:30 PM	2	fishing
	3:00 PM	6		9-Aug	6:00 PM	11	
	4:30 PM	10		10-Aug	6:30 PM	7	
5-Jul	3:30 PM	4		11-Aug	5:10 PM	10	
	5:30 PM	9		12-Aug	8:00 PM	10	
6-Jul	2:00 PM	3		20-Aug	2:30 PM	11	
	5:30 PM	2	2 fishing		5:30 PM	12	
7-Jul	7:00 AM	0		21-Aug	4:30 PM	12	
	6:00 PM	3		23-Aug	12:30 PM	8	
8-Jul	6:00 AM	0			4:00 PM	10	
	11:45 AM	0		24-Aug	4:30 PM	2	
	2:45 PM	6		26-Aug	5:00 PM	2	
	5:15 PM	8		26-Aug	4:30 PM	0	
9-Jul	11:15 AM	2	2 fishing		8:00 PM	11	
	12:00 PM	0		27-Aug	3:30 PM	8	
	3:10 PM	5	Dad + 4 kids		6:00 PM	4	
	6:45 PM	4		29-Aug	3:30 PM	6	
	7:30 PM	1			5:00 PM	10	
10-Jul	6:00 PM	9		30-Aug	4:00 PM	3	
11-Jul	11:00 AM	0			6:00 PM	7	
	2:30 PM	2		2-Sep	1:00 PM	6	
	4:30 PM	10			4:15 PM	9	
	6:00 PM	7	different than 4:30	3-Sep	4:10 PM	7	
12-Jul	1:30 PM	2			6:15 PM	4	
	3:30 PM	5		4-Sep	7:15 AM	2	
	5:45 PM	5			11:45 AM	6	
13-Jul	5:30 PM	3			1:55 PM	11	
14-Jul	7:00 AM	0			4:50 PM	6	
	11:00 AM	0		9-Sep	12:10 PM	4	
	3:15 PM	13	with Woody Fridae		3:15 PM	5	
	4:45 PM	7		10-Sep	12:00 PM	5	
17-Jul	4:00 PM	5			3:50 PM	12	
	6:00 PM	11			5:30 PM	10	
18-Jul	5:30 PM	19	2 fishing	11-Sep	5:50 PM	6	
19-Jul	5:00 PM	22		12-Sep	5:40 PM	5	
20-Jul	4:30 PM	12		14-Sep	1:00 PM	4	
21-Jul	4:30 PM	5			3:50 PM	7	
22-Jul	4:20 PM	14			5:00 PM	10	
	6:30 PM	10		105 counts		699	

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

INITIAL STUDY and MITIGATED NEGATIVE DECLARATION

Response to Comments

The City of Winters (City) would like to thank the commentor for participating in the California Environmental Quality Act (CEQA) review process. No comments were received from any other individual or agency.

The responses to comments are based on CEQA guidelines (Section 15064 (g)) for assessing comments and their relevance to the Project. The City evaluated all comments received on the Winters Putah Creek Nature Park Initial Study / Mitigated Negative Declaration (WPCNP IS/MND) to determine whether there is substantial disagreement about the potential significance of impacts.

The basis for this evaluation is provided in § 21080:

(e)(1) For the purposes of this section and this division, substantial evidence includes fact, a reasonable assumption predicated upon fact, or expert opinion supported by fact.

(2) Substantial evidence is not argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly inaccurate or erroneous, or evidence of social or economic impacts that do not contribute to, or are not caused by, physical impacts on the environment.

It is the City's analysis that there is no substantial evidence, in light of the whole record before it, as the lead agency, that the project, with the included mitigation, may have a significant effect on the environment.

Comments

Mr. Jeff TenPas (May 4, 2008)

Comment 1: Project Description - *Insufficient project description and information to complete an analysis of the potentially significant impacts.*

Response 1: The Project Description clearly and adequately describes the project: a Master Planning process for a community park and restoring its surrounding natural area. The Master Plan and its associated activities are guidance and planning documents, but should not be confused with specific or operational plans.

The various proposed restoration activities involve minor material moving within the floodplain and intermittent heavy equipment use. As clearly stated in the WPCNP IS/MND (Pgs. 20-22), the screening analysis using Yolo-Solano Air Quality Management District's model showed that a full restoration of the park in one field season would

produce less than the thresholds of significance, below which effects are not considered potentially significant. Only a small portion of the park can be developed at any one time due to funding and the more restrictive ecological permitting requirements and mitigation measures. Therefore it is essentially impossible that the proposed percolation dam removal and the minor access improvements will have a statutory impact to air quality.

As further projects for this area are developed, they will be assessed individually by the City in consultation with the appropriate experts, and the relevant regulatory authority, such as the Air Board. Future projects may require tiering from the WPCNP IS/MND or separate documents depending on the nature and extent of possible impacts.

Comment 2: Project Analysis - Lack of scientific studies to support design

Response 2: This is an unsupported assertion. The WPCNP IS/MND cited (and provided) Lower Putah Creek Watershed Management Action Plan (WMAP 2005, 2007, and 2008) clearly and repeatedly identifies the need for channel restoration, as well as bank stabilization. These needs are the result of geomorphologic studies also provided in the WMAP Phase I Resources Assessments (see Section 4-4). The WMAP also identifies 9 separate studies of this part of the Putah Creek watershed, making this one of the most studied watersheds in the region. The sum of these analyses far exceed Rosgen's framework provided in his introductory classification (2006).

Mr. Poore's citation (also provided), Dr. Larsen (UC Davis geomorphologist) and Mr. Ringelberg's (Yolo County TAC Riparian Biologist, and river restoration consultant) comments at the public meetings and the Winter's Committee provided additional expert opinion in support of the geomorphic restoration as described.

Yates' 2003 citation appears to be mischaracterized by the commentator. Yates' conclusions do identify a lower rate of destabilization than expected for the *entirety* of Putah Creek. Yates clearly shows destabilization of the project reach in Figure 14. The commentator's misunderstanding of the benefits of this artificial "stability" can be clarified through a reading of Yates's work, and the analysis of that and other research provided in the cited WMAP Phase I Resources Assessments (pg. 4-21 and 4-22). In summary, the purported stability is a result of artificially created excessively wide width and bank armoring by invasive weeds. The degree of overall channel morphological change has been decreased by a consequent decrease in flows after the dam. Essentially the creek is stable because it has no potential to function naturally due to human impacts, clearly a significant problem rather than a benefit.

Comment 3: Air Quality- Potential for substantial contribution to an existing air quality violation

Response 3: This is a speculative assertion regarding the nature and extent of the potential impacts to City residents from the project. The project is specifically designed to meet the Yolo-Solano Air Quality Management District's (YSAQMD) recommended land use concepts (2007), including "Provide pedestrian and bicycle facilities; Develop concentrated activity centers; Strengthen central business districts; and, Develop interconnected street network."

As clearly described in the WPCNP IS/MND, under CEQA the YSAQMD has set specific thresholds of significance below which effects are not considered potentially significant (Section III Air Quality, elements b and c). The project described will have *de minimis* effects on air resources. As described in Response 1 above, the analysis modeled that potential construction related impacts for the entire Master Plan build-out, which is itself conceptual in nature and plans for a minimum period of a decade, would not exceed the threshold over a single construction season.

The development, and consequent increased use of the park was also assessed for non-construction operational impacts to air resources. This assessment was based on the guidance provided by YSAQMD that the threshold of significance for build-out of a City park would be 4,500 acres. The proposed park development is approximately 14 acres. The mitigation measures are not requirements for a project this size, but are appropriate given the YSAQMD guidance: "However, even projects not exceeding district [particulate] PM thresholds should implement best management practices to reduce dust emissions and avoid localized health impacts¹."

Comment 4: Air Quality - *Exposure of sensitive receptors to substantial pollutant concentrations.*

Response 4: See response #3. The potential for impacts to sensitive receptors was discussed in the WPCNP IS/MND on page 22. There are essentially no potential air quality impacts to sensitive receptors during the completed park, and nominal impacts during restoration activities. Those nominal impacts were assessed and found to be well below the YSAQMD thresholds of significance.

Comment 5: Biological Resources - *risk of a substantial adverse effect on Chinook Salmon, an endangered species.*

The Fall Run Chinook salmon is a Species of Concern for NOAA/NMFS and *not an endangered species*. Species of Concern do not have an additional legal protection over other species. Despite this, the project examined in detail the potential impacts to native fish species and determined that any potential project impacts to the Fall Run Chinook salmon would be limited to the construction phase of dam removal and the initial bank stabilization. These impacts would be mitigated through avoidance of activities during the salmon migration season, as clearly described in the mitigation measures. Peter Moyle, the state's leading expert on salmon, has stated (Personal Communication w. Rich Marovich) that salmon would benefit from the project and that salmon could be expected to spawn in the vicinity of the Winters Car Bridge, if the channel is restored to functional dimensions as proposed.

Comment 5a: Erosion and Sedimentation

¹ Handbook for Assessing and Mitigating Air Quality Impacts, Yolo-Solano Air Quality Management District, July 2007; Pg. 14.

Response 5a: Erosion and sedimentation are normal and desirable forces in fluvial geomorphology. Significant changes in the rate and location of these forces are undesirable. The natural stream energy is intended to rework portions of the overall restoration to achieve its natural equilibrium (See Rosgen et al.).

The WRECO 2008 report cited by the commentor documents that after technical study and modeling, removal of the percolation dam would have at most a nominal impact on upstream bridge footings. The WRECO report also states: "The removal of the remnants of the Percolation Dam may be beneficial to restore floodplains and biological resources along Putah Creek." The study goes on to say: "A cross vane is a grade control structure that helps to decrease bank shear stress and velocity but increases energy in the center of the channel. They are typically constructed to reduce bank erosion and increase stream stability."

The study modeled an approximate 40 percent decrease in stream velocity at the dam site after removal, and a decrease in sheer stress of approximately 60 percent, both considerable benefits to re-establishing a natural channel at the site. The removal of the percolation dam reduces the velocity and scour, stabilizing the area, the exact opposite of the commentors claim.

Mitigation Measure BR-5, while intended specifically to mitigate for any potential impacts to salmonids, has the net benefit of ensuring that the construction is completed and best management practices are in place during seasonal increases in flows.

Comment 6: Biological Resources - *Fish passage at the percolation dam.*

Response 6: An assessment was completed by the California Department of Fish and Game, the trustee agency for California's fish resources that identified the percolation dam as a barrier to fish passage, and was cited in the WPCNP IS/MND. The WPCNP IS/MND does not largely base the removal of the dam on fish passage concerns, it is simply one of many ecological factors that were assessed. The primary reason for percolation dam removal has been identified by the City as potential safety and attractive nuisance issues, compounded by the deteriorating structure and its potential for significant ecological harm when it fails in an uncontrolled manner. The improvement of fish passage resulting by the removal of the dam is a benefit of the project.

Comment 7: Biological Resources - *Risk of a substantial adverse effect on riparian habitat.*

Response 7: The WPCNP IS/MND clearly identifies short-term impacts to riparian habitat and provides appropriate mitigation. The Mitigation Measure BR-6 is the standard and accepted measure for protecting riparian habitat. The existing condition is a de facto adverse condition on native riparian habitat, and there is unanimous expert support in favor of restoring riparian vegetation.

A native riparian forest is the goal of part of the project and there is no plan to significantly impact that or any other established reach with this project. As described in the WPCNP IS/MND short reaches with willow or minor sapling cover may be disturbed as part of the bank recontouring and these will be replanted immediately. The

vegetation management plan provided in the WPCNP IS/MND is the guidance document for the site-specific management of vegetation.

Finally, the greater width of riparian vegetation that would be created by this project will at least double the amount of riparian habitat.

Comment 8: *Financial Cost*

Response 8: The commentor does not provide new information, and does not define a CEQA potential impact regarding how project cost would be a significant environmental impact at the site (see introduction).

Comment 9: *Need for a Hydraulic Study of Flooding and Inundation of the Floodplain*

Response 9: The project area has in fact been modeled and that information is used by the commentor as a citation for question #5 (WRECO, 2008). Other flooding models have been done for the project area and referred to in the WMAP Phase I Resources Assessments, such as the (1995) study of flood conveyance in Winters by the U.S. Army Corps of Engineers.

Comment 10: Cultural Resources - Loss of Culturally Significant Swimming Hole

Response 10: Multiple CEQA-associated Cultural Resources studies have occurred for the project area. The percolation dam was assessed and found to not meet State or Federal criteria for inclusion as a significant cultural feature. The commentor does not provide any information in support of alternative findings.

Comment 11: Geology and Soils - Soil erosion

Response 11: The intent of this element in CEQA is related to unstable soils associated with mass failures and the potential to place life in jeopardy as a result of project activities.

The commentor appears to mischaracterize Yates' work, and is responded to in detail in Response 2. The site is clearly not stable, with significant scour areas, and aggraded areas with braiding (see Rosgen). It should be noted that site restoration soils are not predominately dirt and other fine textured soils but coarse grained, natural stream material suitable for spawning.

Comment 12: Water Quality - Water quality standards

Response 12: Water quality standards are maintained by the State of California Regional Water Quality Control Boards (RWQCB), and controlled through permit/certification. Site activities, including potential project water quality mitigation requirements, in addition to those put forth in the WPCNP IS/MND, will be implemented

under a RWQCB 401 permit and managed by that agency. This permitting is also a public process.

Comment 13: Water Quality - Mercury contamination

Response 13: As described in Response #12, water quality standards are maintained by the RWQCB, in this case the Central Valley Board, and controlled through permit/certification. Site activities will be under a RWQCB 401 permit and managed by that agency.

Mercury advisories are based on methyl mercury contamination of fish tissue. Mercury methylation is predominately an anaerobic, bacterial mediated process that needs to form in the absence of oxygen, such as (deep pools or eutrophic reaches). The project is specifically designed to maximize the dissolved oxygen of the creek and reduce the deep pools which would, in turn, reduce the opportunities for methyl mercury formation.

Comment 14: Water Quality - Swimming

Response 14: Screening studies completed for the City on the creek show elevated levels of bacteria in the project area. This issue was discussed in several of the public meetings. The water is considered marginal for swimming and it is a project goal to increase the dissolved oxygen and increase velocities to reduce residence time of the water, which would reduce opportunities for coliform bacterial concentration in the creek. Removal of the percolation dam will not degrade water quality, but is in fact intended to improve it.

Comment 15: Noise - Risk of substantial increase in noise from project implementation

Response 15: The City has strict noise standards and the project will comply with these standards, as clearly described in the WPCNPIS/MND. The commentor provides no evidence that the standard mitigation measures are not sufficient.

Comment 16: Recreation - Swimming

Response 16: Swimming has been observed on multiple reaches within the project area and several swimming holes upstream and downstream of the percolation dam exist. New areas for swimming are created by the w-weirs, and safe public access for people of all abilities is explicitly part of the project. These increased recreational opportunities are a beneficial outcome of the project.

Comment 17: Recreation - Fishing

Response 17: Fishing will be significantly improved by improving the water quality of the project area, and by providing safe access to residents regardless of physical ability

to the creek. This effect of the plan is intentional and discussed throughout the document and in the public meetings.

Comment 18: Recreation - *Walking trails*

Response 18: Walking trails are an important component of the plan. The WPCNP has assessed the specific type, location, and even provided illustrative design details. The trail network envisioned connects the community to the park in ways that were not conceived of in the original master plan.

Use of the dam as a creek crossing was discussed and dismissed as unsafe by the City after several public meetings, both as part of this process and independently. The current access to the percolation dam in a loop with the railroad bridge can only be accomplished in low water, by physically fit individuals. It requires scrambling over boulders and climbing 30% grades over broken glass and loose debris. This is unreasonable and unsafe and one of the many reasons the City has proposed the project. The WPCNP does not propose that rock weirs be used as creek crossings.