

Chapter 6

Recommended Actions



This chapter starts by describing the process used to identify recommended actions for protection and stewardship of the Laguna Creek Watershed, including guiding principles and objectives and integration of community values. This is followed by a summary of the actions, a map illustrating action locations, and information fact sheets for each recommended action.

6.1 Process Used to Identify Actions

The first step in identifying actions for this Watershed Management Action Plan was to compile and analyze data and findings from the community outreach and visioning process described in Chapter 3, the review of regulatory planning policies and documents summarized in Chapter 4, and the watershed assessment described in Chapter 5. Many ideas were generated by the technical team that required further sorting and refinement of information. At this point, a set of guiding principles, objectives, and other considerations for watershed protection and stewardship were created to provide a logical framework for the development and final selection of recommended actions. These principles, objectives, and other considerations reflect the community's values and concerns.



Guiding Principles

The following set of “guiding principles” were defined and validated during stakeholder meetings in fall 2007 to provide a framework for selecting recommended actions. All aspects of the Watershed Management Action Plan, including the list of recommended actions, are intended to be consistent with these four principles:

- **Laguna Creek, its Tributaries and its Watershed Represent a Community Asset that Provides Basic Services** – Benefits achieved through the implementation of individual actions serve the broader interest of the creek, its dependent resources, and the community.
- **Actions are Consistent with Regulations, Policies, and Plans** – Recommended actions are consistent with local, state, and federal regulations, policies, and plans. In some cases, with the consent of the applicable agency(ies), the recommended action may propose amendment(s) to existing plans, policies, and/or regulations.
- **Willing Participants** – The plan involves willing participants. Actions will be directed to sites where the landowner, land manager, and/or community is accepting of the action and willing to support and participate in its implementation.
- **Private Property Rights** – The plan respects the rights of the private landowner.

Watershed Protection Objectives

Recommended actions included in the Watershed Management Action Plan seek to achieve one or more of the following six

objectives, which are related to protecting, restoring, enhancing, creating, and promoting vital watershed functions and values:

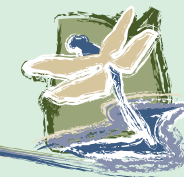
- **Flood Control** – Protection, restoration, and enhancement of the watershed's ability to effectively convey flood waters and provide flood control services for the surrounding community.
- **Habitat** – Protection, restoration, and enhancement of vegetation communities and aquatic resources, which provide habitats for numerous plant, wildlife, and fish species.
- **Ecosystem Processes** – Protection, restoration, and enhancement of essential ecosystem processes throughout the watershed including interrelated physical, chemical, and biological processes that are vital for the maintenance of habitats and water quality.
- **Recreation** – Protection, restoration, enhancement, and creation of important recreational amenities and opportunities throughout the watershed for the enjoyment of the public.
- **Education and Stewardship** – Development, implementation, and promotion of important education, interpretation, and stewardship opportunities throughout the watershed for the enjoyment and enrichment of the public.

Other Considerations

Watershed Context

The technical team considered the following three questions related to watershed context in selecting the recommended actions for this Plan:

- **Watershed Connectivity** – Does the action help achieve improved hydrologic, habitat, and/or



recreational connectivity? Such actions will improve watershed functions and values.

- **Dependency** – Is the action dependent on implementation of other actions (e.g., upstream or downstream)? A potential action's success may be limited by another factor that should be addressed sequentially, before or after the potential action.
- **Visibility** – Will the result/outcome of the action be visible to the community? Visible projects will be useful in demonstrating success for future actions.

The information fact sheets presented later in this chapter provide preliminary information related to each recommended action's watershed context. Further analysis of watershed context should be done as the actions proceed from the conceptual level to more detailed plans and designs.

Potential Partners

The Watershed Council will oversee and help guide future implementation of this Plan, but the various stakeholder agencies, groups and individuals in the watershed are expected to provide leadership in sponsoring action(s) within their jurisdiction. For this reason, an important consideration in selecting actions for this Plan was whether one or more potential partners could be identified to lead or play a role in future implementation. The fact sheets presented later in this chapter indicate potential partners. Additional partners may be identified in the future as implementation gets underway.

Permitting Requirements

An initial assessment was conducted of permitting requirements for each recommended action; this information is presented in

the fact sheets later in this chapter. Actions that do not require permits or can be easily permitted would be more capable of being implemented in the near-term. Further analysis of this aspect should be done as the actions proceed from the conceptual level to more detailed plans and designs.

6.2 Recommended Actions

This plan recommends 43 actions as outlined on Table 6-1. Actions can have site-specific or watershed-wide applicability, and can be one of four types: policies and practices, visioning and planning, watershed stewardship or implementation, as described below. Stakeholders are encouraged to consider and look for collaborative opportunities to implement these projects and programs to achieve one or more of the six watershed protection objectives discussed earlier. Table 6-1 shows how the various actions align with those objectives.

Recommended Site-specific and Watershed-wide Project Actions

Table 6-1 presents a list of 31 recommended site-specific projects, starting at the headwaters of the watershed and working down to the bottom. The table also identifies 12 projects that could be implemented at one or more locations throughout the watershed (i.e., watershed-wide). Figure 6-1 shows the location of the site-specific actions in the watershed and additional details for each action are provided on the information sheets at the end of this chapter.



Table 6-1
Summary of Recommended Actions for the Laguna Creek Watershed

ACTION									WATERSHED OBJECTIVES					
	#	NAME	Action Types				Potential Partners (in addition to LCWC)		Flood Control	Water Quality	Habitat	Ecosystem Processes	Recreation	Education/ Stewardship
			Policy	Plan	Stewardship	Implementation								
SITE-SPECIFIC ACTIONS	1	Headwaters Vernal Pool Prairie Preservation	•				CO, RC, PL, O		✓	✓	✓	✓	✓	✓
	2	Sun Creek Development Policies	•				RC, PL, O		✓	✓	✓	✓	✓	✓
	3	Arboretum Stream Restoration				•	RC, PL, O		✓	✓	✓	✓		
	4	Vulcan Triangle Reclamation and Stream Restoration	•				CO, O		✓	✓	✓	✓		✓
	5	Waegell Ranch Reach Restoration				•	CO, SG, PL, O		✓	✓	✓	✓	✓	
	6	Shehadeh Reach: Exploring Corridor Conservation and Upland Land Use		•			PL, O		✓	✓	✓	✓	✓	
	7	Conservation Area Reach Water Quality Measures				•	CO, SG, PL, O			✓	✓	✓		✓
	8	Conservation Area Reach Trail Development		•			CO, SG, PL, O			✓	✓	✓	✓	✓
	9	Spiva Road Community	•				PL, SG, CO, O			✓	✓	✓		✓
	10	Vineyard Area "Lot P"	•				SG, CO, O			✓	✓		✓	
	11	Vineyard Storm Drain Daylighting				•	CO, SG, O			✓	✓	✓		
	12	Southgate Detention Basins and Trail Oversight of Implementation	•				CO, SG, O		✓	✓	✓	✓	✓	✓
	13	Carmencita Reach Oversight of Implementation	•				SG, CO, PL, O			✓	✓		✓	
	14	The Ogden Reach Policies Development	•				PL, O		✓	✓	✓	✓	✓	✓
	15	Bradshaw Christian School Reach Policies and Interpretive Signage	•		•		CO, SG, PL, O		✓	✓	✓	✓	✓	✓
	16	Jordan Ranch Swales				•	EG, CSD, O		✓	✓	✓	✓		✓
	17	Elk Grove Rural Block Reach Policies	•				EG, PL, O			✓	✓	✓		
	18	Strategic Plan for Toad Creek (Tributary 1) Subwatershed		•			EG, CSD, PL, O		✓	✓	✓	✓	✓	✓
	19	Strategic Plan for Sheldon Creek Subwatershed		•			EG, CSD, EGUSD, O		✓	✓	✓	✓	✓	✓
	20	Poplar Hollow Reach Policies	•				PL, EGUSD		✓	✓	✓	✓	✓	✓
	21	Jack Hill Park Restoration and Interpretive Signage			•	•	EG		✓	✓	✓	✓	✓	✓
	22	Creekside Wetland Restoration				•	EG			✓	✓	✓		✓
	23	Lower Camden Lake and Weir				•	EG		✓	✓	✓		✓	✓

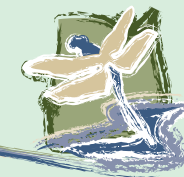


Table 6-1
Summary of Recommended Actions for the Laguna Creek Watershed

ACTION								WATERSHED OBJECTIVES					
	#	NAME	Action Types				Potential Partners (in addition to LCWC)	Flood Control	Water Quality	Habitat	Ecosystem Processes	Recreation	Education/ Stewardship
			Policy	Plan	Stewardship	Implementation							
SITE-SPECIFIC ACTIONS	24	East Lawn Cemetery Property Trails				•	PL, EG, CSD					✓	
	25	Strategic Plan for Whitehouse Creek Subwatershed		•			EG, CSD, PL, O	✓	✓	✓		✓	✓
	26	Laguna Bypass Extension Alternatives	•	•			EG, CSD, PL	✓	✓		✓		
	27	Lower Bypass Area Reach Policies	•				EG, CSD, PL	✓	✓	✓	✓	✓	✓
	28	North Laguna Creek Wildlife Area Education and Stewardship Program			•		SAC, EGUSD					✓	✓
	29	North Laguna Trail Improvement and Extension			•	•	SAC, SRCSD, O	✓	✓	✓	✓	✓	✓
	30	Bufferlands Education Program			•		SRCSD, O					✓	✓
	31	Strategic Plan for Elk Grove Creek Subwatershed		•			EG, CSD, EGUSD, PL, O	✓	✓	✓	✓	✓	✓
WATERSHED-WIDE ACTIONS	32	Invasive Weed Removal Strategy		•			SAC, EG, CSD, CO, SG	✓		✓	✓		✓
	33	Tree Planting Program		•	•		CO, EG, CSD, EGUSD, O	✓	✓	✓	✓		✓
	34	Watershed Open Space/ Conservation Easement Catalogue		•			EG, CO, O	✓	✓	✓	✓	✓	✓
	35	Laguna Creek Watershed Stewards Program			•		SAC, CO, EG, CSD, SG, EGUSD, O					✓	✓
	36	Laguna Creek Walk Program			•		CSD, SG					✓	✓
	37	Connected Creek Trails and Interpretive Signage		•	•		CSD, SG, EG	✓	✓	✓	✓		✓
	38	Beaver Management Plan		•			EG	✓		✓	✓		✓
	39	Watershed Water Quality Monitoring Plan		•			EG, SG, O		✓	✓	✓	✓	✓
	40	River Friendly Demonstration Gardens			•	•	EG, CO, CSD, SG, EGUSD	✓	✓	✓	✓	✓	✓
	41	Water Use Efficiency Outreach and Education			•		EGUSD, CO, SAC, EG, RC, O						✓
	42	Review / Amend Policies and Codes Related to Watershed Protection	•				CO, RC, EG, EGUSD, SRCSD, CSD, SG	✓	✓	✓	✓		
	43	Integration of ULCC Process and Products into Overall Watershed Management Efforts	•	•			O	✓	✓	✓	✓	✓	✓

Legend: Potential Partners: CO=County, RC=Rancho Cordova, EG=Elk Grove, SAC=Sacramento, SG=Southgate, CSD=Cosumnes CSD, EGUSD=Elk Grove Unified School District, SRCSD=Sacramento Regional County Sanitation District, PL=Private Landowners, O=Other (see information sheets at end of chapter)

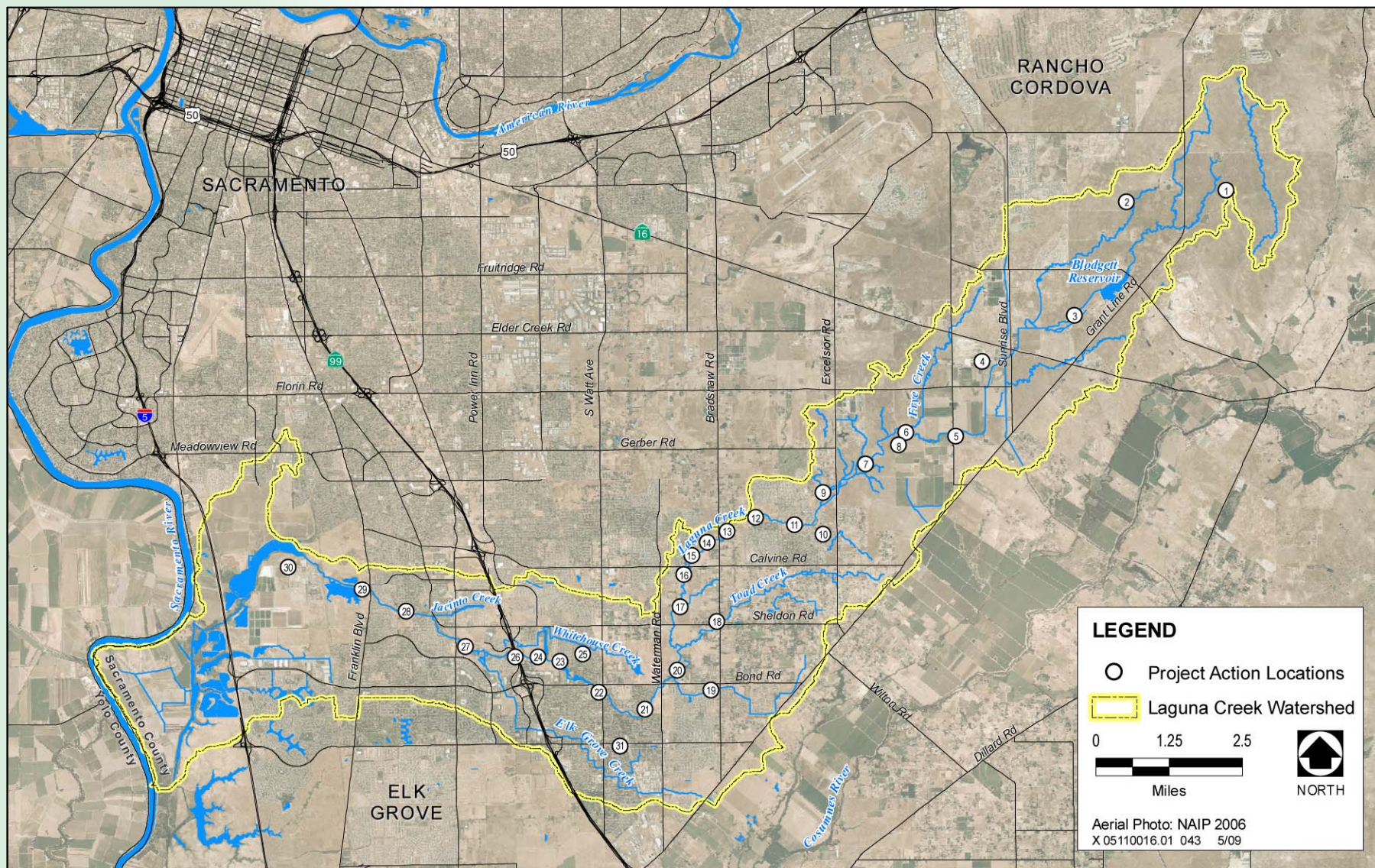
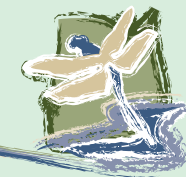


Figure 6-1 Project Action Locations (Site-specific actions #1-31)



Recommended Action Types

There are four types of actions recommended in this plan:

- **Policies and Practices (Policy)** – Policy-related actions that will help ensure protection of the valuable watershed resources as development proceeds. Additional information about policy-related actions is provided at the end of this chapter, in Section 6.3.
- **Visioning and Planning Actions (Plan)** - Actions that require additional visioning and/or development of a plan, such as a watershed management plan for a tributary to Laguna Creek.
- **Watershed Stewardship Actions (Stewardship)** – Actions that will engage the watershed community in learning about and becoming stewards of the resource.
- **Implementation Actions (Implementation)** – On-the-ground projects that will conserve, restore or enhance the creek and its resources. Many of these actions are located on private land, and every effort was made to outreach to those landowners and involve them in the preparation of this plan and the action fact sheets.

6.3 Recommended Policy-related Actions

The lands that compose the Laguna Creek and neighboring watersheds have historically been used for agriculture and ranching. More recently, urbanization has covered large areas with impervious surfaces. These uses have greatly altered the creek and its surrounding landscape, yet there remain areas of natural beauty that provide habitat for fish and wildlife,

serve as critical drainage corridors, and provide recreation and open space for the residents of the watershed. These uses have also led to water consumption patterns which may be unsustainable for the future. New or amended policies are needed to ensure appropriate protection of existing surface and groundwater resources and enhancement of those that have been degraded.

Action 42 in this Plan recommends consideration and adoption of policies that achieve the following land use planning and management principles:

- protect open spaces, especially the streams and riparian corridors and lands that allow recharge of groundwater aquifers;
- plan and direct future growth in a sustainable manner including supporting denser, pedestrian friendly development that preserves the creek corridor for multiple uses and functions;
- manage stormwater to mimic the predeveloped hydrologic condition and maintain the beneficial uses of Laguna Creek and its tributaries;
- reduce water consumption and promote groundwater recharge where feasible, as a means of addressing aquifer depletion; and
- promote increased human connection to the creeks in the watershed.

These five land use planning principles are discussed in more detail below.

Recommended Action 42 calls for the stakeholder agencies with land use authority in the watershed to consider adopting such policies and amending their planning documents and procedures to accommodate the policies.



Several other actions (e.g., 1 and 2) recommend that these types of policies influence future development projects. As referenced by the Action 42 fact sheet, Appendix H presents a menu of recommendations which embody these principles, including policies, ordinances/codes and standards which could be adopted in all or part by the agencies.

1. Protect Open Spaces, Especially Stream Corridor, Floodplains, and Lands That Allow Groundwater Recharge

Sound development policy should begin by protecting key areas of existing open space, especially those most important for maintaining or restoring a more natural hydrological regime. Appropriately sized stream corridors (i.e., riparian buffers) that at a minimum protect the existing 100-year floodplain from encroachment, are needed to support the functions of the local creeks (e.g., habitat, flood risk reduction, open space/recreational opportunities, and groundwater recharge).

Science, not politics, should be the basis for determining the exact size of a stream corridor. Once identified, a riparian overlay zone should be applied to limit development in the designated area. Whenever possible, the local jurisdiction should seek to acquire easements and open space to preserve environmental features that are valuable for their scientific, educational, conservation, wildlife linkage, scenic, agricultural, and cultural values.

As the impacts of climate change become more evident, the benefits of wide riparian buffers will be apparent. The unpredictable nature of future precipitation patterns and associated runoff necessitate advanced planning and new adaptive strategies. Lessons should be learned from communities that have restricted their options by failing to

protect riparian areas and are now left with a set of undesirable, heavily constrained flood control options. Examples of this exist in the watershed, such as along various portions of Elk Grove Creek. Establishing requirements for wide riparian buffers is one of the important steps local governments can take to reduce future risk of flooding and adapt for the uncertainties of climate change.

It is recommended that open space management plans be created for streamside developments and those with open space resources, adequate agreements, and financing mechanisms must be put in place to ensure continued care and maintenance of the natural features in perpetuity.

2. Adopt Sustainable Growth and Development Policies

Sustainable growth policies refer to those ordinances/guidelines that support denser, pedestrian friendly development that reduces dependence on the car. Sustainable policies begin with the protection of key natural areas, such as riparian buffers, areas of high groundwater recharge, and other sensitive natural areas such as vernal pool complexes. For those lands on which development will occur, designs should be developed that reduce the dependence on cars and preserve common green spaces.

The potential impacts of climate change, previously discussed in Chapter 4, should be considered for all development projects in the watershed and appropriate mitigation and adaption strategies should be adopted related to greenhouse gas emissions, water management and supply, and agricultural practices. Responsible agencies within California, such as the Department of Water Resources, recognize that meeting the needs for a reliable water source in



this region will be a challenge in light of anticipated changes in the pattern and form of precipitation and associated runoff. The exact ways in which the Laguna Creek Watershed communities will be affected is presently unclear. Nonetheless, it is important that the watershed communities adopt programs and strategies to prepare for the inevitable changes. For example, protection of floodplains and open space will provide increased flow conveyance and maximum groundwater recharge. Planting trees to increase the watershed's tree canopy will provide multiple benefits, including decreased surface runoff and stream temperatures, reductions in atmospheric carbon dioxide, stormwater interception and filtration, and aesthetic value.

3. Require Environmentally Friendly Stormwater Management Practices Which Mimic the Natural Hydrologic Condition

The hydrologic changes resulting from paving over watersheds and installing storm drain systems to efficiently direct flows to creeks (i.e., hydromodification) has led to many adverse impacts on creeks. These include increased frequency and magnitude of flood flow peaks, increased erosion potential, creek bed downcutting and bank erosion, and other changes in channel morphology. All of these changes can lead to loss of creek habitat and aquatic diversity and adversely affect the beneficial uses of Laguna Creek and its tributaries. Further, in some areas of the watershed, hydromodification has affected hydrologic connectivity between surface water and the groundwater aquifers, thus affecting water supply.

The requirement for hydromodification management practices as a condition of development permitting is important to protect and restore natural hydrologic functions and stream habitat. It is recommended that the land use authority agencies and development community actively implement hydromodification management controls through a program of both incentives and requirements. Indeed, new and emerging regulations and local state-issued stormwater permits are beginning to require such controls.

A variety of approaches can be used to reduce the harmful effects of hydromodification, including low impact development practices, flow duration control, and instream restoration. Low Impact Development (LID) has commonly become known as a comprehensive land planning and engineering design approach with a goal of maintaining and enhancing the pre-development hydrologic regime of urban and developing watersheds. Typical LID practices are installed on-site, as close to the source of runoff and pollution as possible. The practices capture and direct runoff to pervious or vegetated areas where the runoff can be infiltrated and/or filtered. Much of this watershed is underlain with clay soils, as evidenced by the abundance of vernal pools, which makes infiltration more of a challenge. But there are ways to design LID practices, with amended soil, reservoirs, and underdrains that will allow some infiltration, while also treating the bypassed runoff before it reaches the creek.

In certain situations, flow control basins might be best suited to manage runoff in a manner which more closely mimics the predeveloped condition. For the developing upper watershed, studies have been completed with



recommendations for sizing and locating such basins (see Appendix E). In other circumstances, instream modifications and restoration should be undertaken to stabilize the creeks and reconnect the creek with the adjacent floodplain.

This Plan advocates a flexible approach to stormwater/urban runoff management that prevents further degradation of Laguna Creek and restores hydrological connectivity whenever possible, as development proceeds, particularly in the upper watershed.

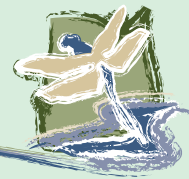
4. Reduce Water Consumption and Promote Groundwater Replenishment Where Feasible

The sustainability and overall health of the watershed and its population depends on an adequate supply of water to maintain healthy ecological conditions in the stream and provide for irrigation and drinking water. A balanced approach will ensure a harmonious relationship in the future. There are a number of agencies and organizations working in the watershed on stormwater management, water supply, recreation, and other programs. This Plan facilitates collaboration by identifying strategies and projects that provide benefits to all, while satisfying regulatory and environmental community concerns and adapting to changing precipitation conditions. The nexus between stormwater management and water supply is clear: stormwater runoff must be treated as a resource rather than a waste stream. Policies and programs should be implemented that strive to reduce water consumption by watershed residents; promote water capture, storage, and reuse; and promote groundwater replenishment where feasible.

5. Promote Human Connectivity to Laguna Creek and its Tributaries

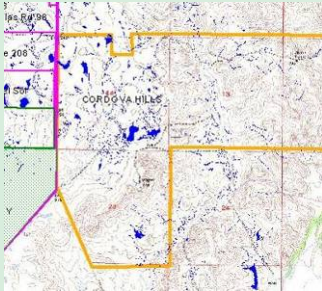
Local creeks and associated corridors increase the quality of life in the watershed. People enjoy the natural beauty of creeks and the wildlife that frequent them, and creek corridor trails provide opportunities for recreation and community socialization. Policies should promote a view of creeks as amenities that are welcome at the front door, not as a drainage ditch that is hidden behind a wall near the back door. Policies should promote multi-modal recreational trails that double as maintenance and fire access roads, and constructed with pervious materials when possible. With thoughtful design, creek corridors can link local and regional trails that can provide pedestrians and bikers with viable alternative modes of transportation. Policies should promote acquisition and dedication of land where necessary to connect the creek corridor trails and encourage collaboration with regional entities to facilitate regional connectivity.

Connected creek corridors also provide opportunities for stewardship and education. Students, civic groups, and other community members involved in creek clean-ups and tree planting projects build ownership and pride and receive valuable environmental lessons. Local communities should develop policies and programs that advance these activities in a meaningful way. Guidelines should be adopted for interpretive signage design. Signage should be required on new trail spurs as a condition of development, and opportunities should be sought for grants and community partnerships for installing signs on existing trails.



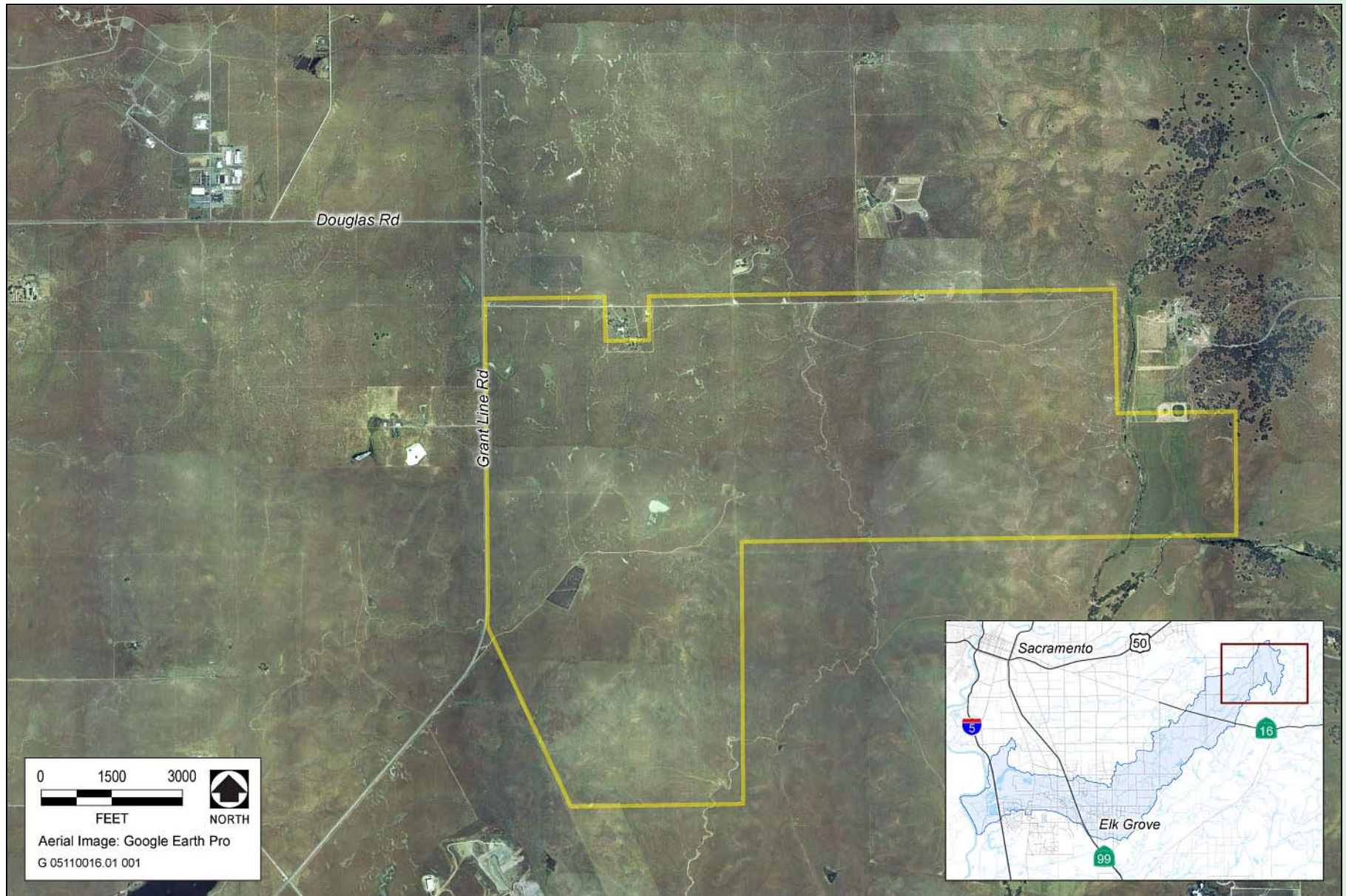
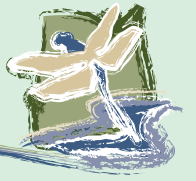
In summary, agency decision makers are encouraged to consider the long-term interests of the watershed communities when setting standards and approving projects. Under the Public Trust Doctrine¹, waters of the State are to be held in trust for the enjoyment and use of the public. The above-mentioned principles provide a basis for the management of land in such a way that the waterways and associated corridors in the Laguna Creek watershed will receive appropriate stewardship so they will provide necessary services to the community for many years to come.

¹ Under the Public Trust Doctrine, certain resources are held to be the property of all citizens and subject to continuing supervision by the State. Originally, the public trust was limited to commerce, navigation, and fisheries, but over the years the courts have broadened the definition to include recreational and ecological values.



Recommended Action No. 1 – Headwaters Vernal Pool Prairie Preservation

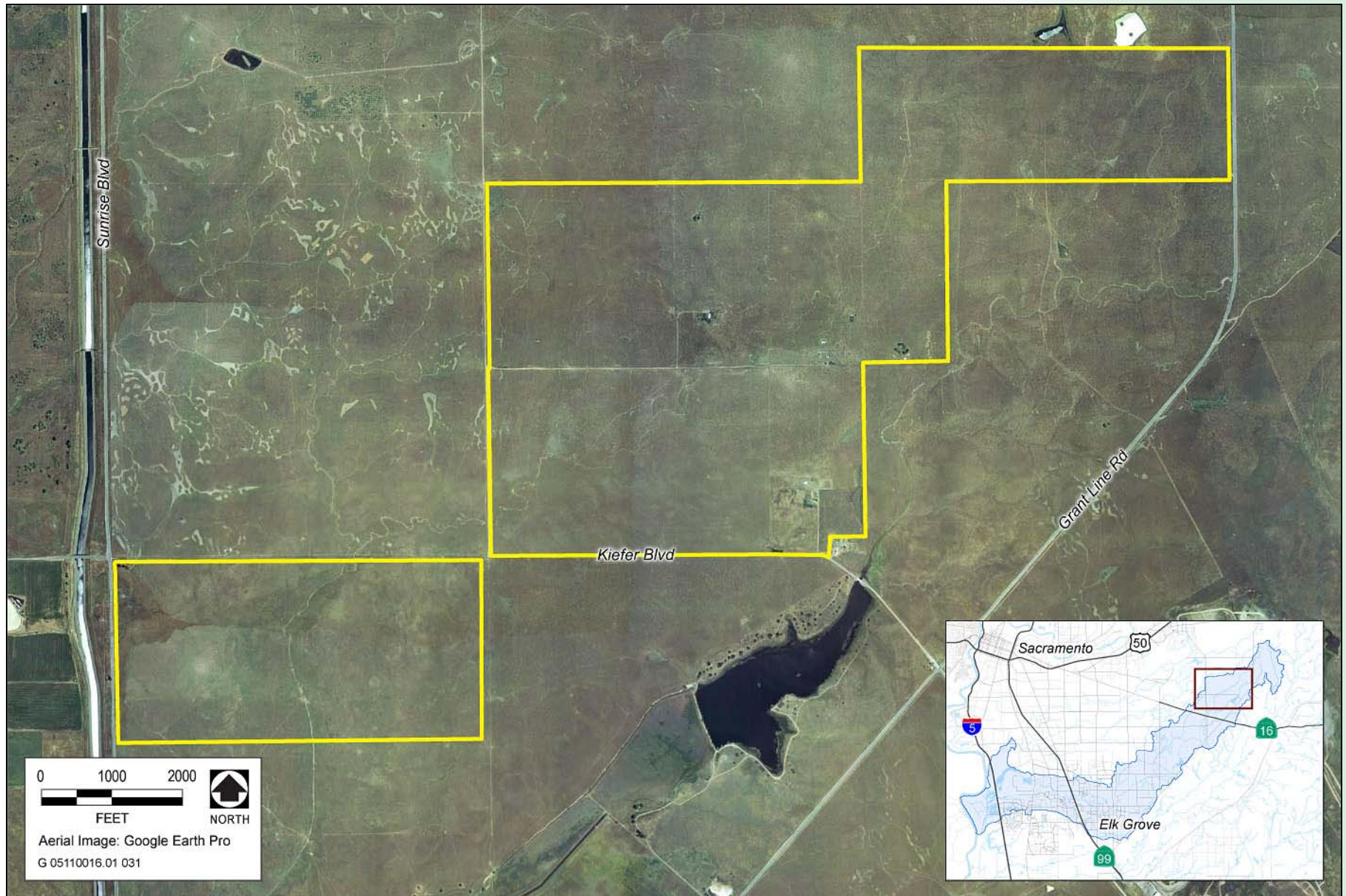
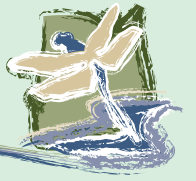
Location	The headwaters of Laguna Creek, east of Grant Line Road is characterized by vernal pool grassland prairie landscape. The Cordova Hills planned development is located within the Cordova East Planning Area (CEPA) of the City of Rancho Cordova, which lies in the headwaters of Laguna Creek.		
Description	<ul style="list-style-type: none"> ▶ The CEPA has been the focus of several local and regional planning efforts. The South Sacramento Habitat Conservation Planning process has identified the east area of the county in the area of Laguna Creek's headwaters as important preservation area for vernal pool species including orcutt grasses. As future development plans are contemplated for the CEPA, landowners and other interested parties have initiated discussions regarding how to address resource planning in the CEPA prior to initiation of full land planning efforts. ▶ The Cordova Hills developers have met with LCWC, ULCC, and Sacramento Valley Conservancy representatives to discuss the potential for trail connections through the development property. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends policies included in the Laguna Creek Watershed Management Action Plan (Section 6.3 and Appendix H) be considered in future planning efforts including preservation of vernal pools, the creek corridor, implementation of appropriate stormwater management controls, and a potential trail connection through the development. 		
Potential Partners	Private landowners, City of Rancho Cordova, Sacramento County, LCWC, ULCC, Sacramento Valley Conservancy, Resource Agencies, Sacramento Urban Creeks Council		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action increase watershed connectivity? Yes, proper planning has the potential to preserve and/or maximize hydrologic, habitat, and human connectivity. ▶ Is the action dependent on another? Yes, this policy-based action requires collaboration and coordination with other planning activities. ▶ Is the project visible to community? Yes, this action has potential to be visible to the community. 		





Recommended Action No. 2 – Sun Creek Development Policies

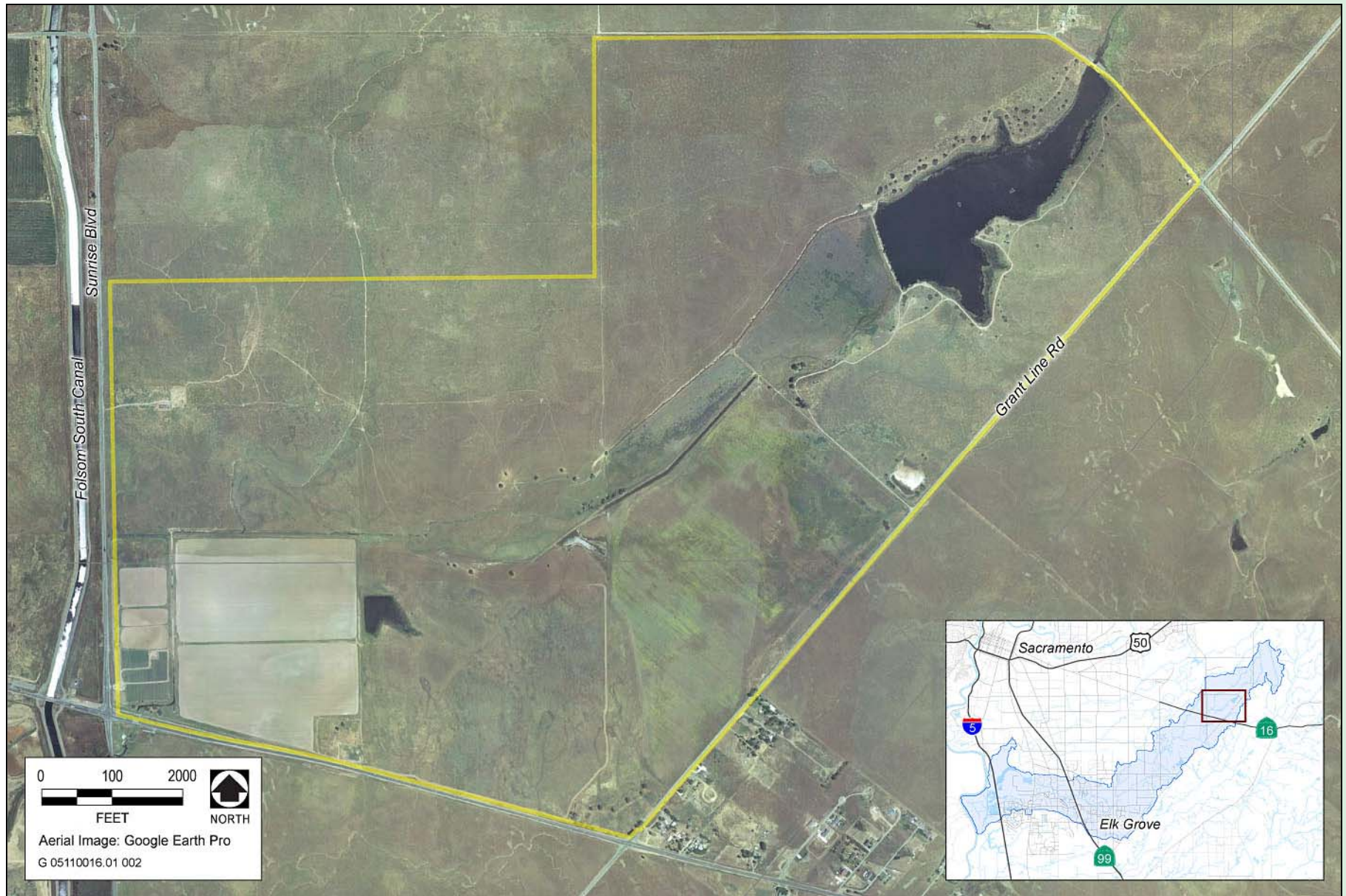
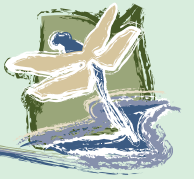
Location	The Sun Creek planned development is located above Keifer Road in the upper Laguna Creek Watershed.		
Description	<ul style="list-style-type: none">▶ Sun Creek is a future planned development surrounding a segment of Sun Creek, which is a tributary to Laguna Creek.▶ Developers have presented conceptual plans to LCWC and ULCC indicating that a relatively wide creek corridor will be preserved.		
Recommendations	<ul style="list-style-type: none">▶ This action recommends policies included in the Laguna Creek Watershed Management Action Plan (Section 6.3 and Appendix H) be considered in future planning efforts including preservation of the creek corridor and implementation of appropriate stormwater management controls.		
Potential Partners	Private landowners, City of Rancho Cordova, Sacramento County, LCWC, ULCC, Sacramento Valley Conservancy, Resource Agencies		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none">▶ Does the action increase watershed connectivity? Proper planning has the potential to preserve and/or maximize hydrologic, habitat, and human connectivity.▶ Is the action dependent on another? This policy-based action requires collaboration and coordination with other planning activities.▶ Is the project visible to community? This action has potential to be visible to the community.		





Recommended Action No. 3 – The Arboretum Stream Restoration

Location	Laguna Creek between Blodgett Reservoir and Sunrise Boulevard., within the Arboretum development in the City of Rancho Cordova.		
Description	<ul style="list-style-type: none"> ▶ The Arboretum is a planned community integrating sustainable, LID principles into its design and operations. The Arboretum's designers set restoration as a goal throughout their planning process. The conservation and resource protection strategy adopted by the Arboretum development team, and the steps identified to achieve their goals provide a model to be used for planning projects elsewhere in the watershed (e.g., Elk Grove Creek Subwatershed Plan, Action No. 30). ▶ Over the years, portions of the creek within the project area have been channelized to direct flows around the perimeter of agricultural parcels. Stream reaches that have been channelized and straightened are experiencing a higher frequency of channel instabilities. The stream segment downstream from Blodgett Reservoir is currently unstable because the current alignment was excavated and straightened for reservoir discharges and to protect the agricultural property to the south. These reaches represent stream restoration opportunities. 		
Recommendations	<ul style="list-style-type: none"> ▶ Restoring meanders will provide a more natural dissipation of energy of the water flowing downstream of Blodgett Reservoir. Reconnecting the creek to its natural floodplain will benefit habitat conditions in the upland buffer area. The Arboretum's stormwater and flood management approach addresses the effects of hydromodification by mimicking the pre-development hydrograph. 		
Potential Partners	Waegell Family, Lewis Communities, City of Rancho Cordova, Regulatory Permitting Agencies		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input type="checkbox"/> Education & Stewardship <input type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide community connections? No ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ This project will require CEQA review (most likely Initial Study/Mitigated Negative Declaration). Three permits would likely be needed: DFG 1602, CWA Section 404, Regional Water Board 401 Certification; permitting could take one year or more. 		

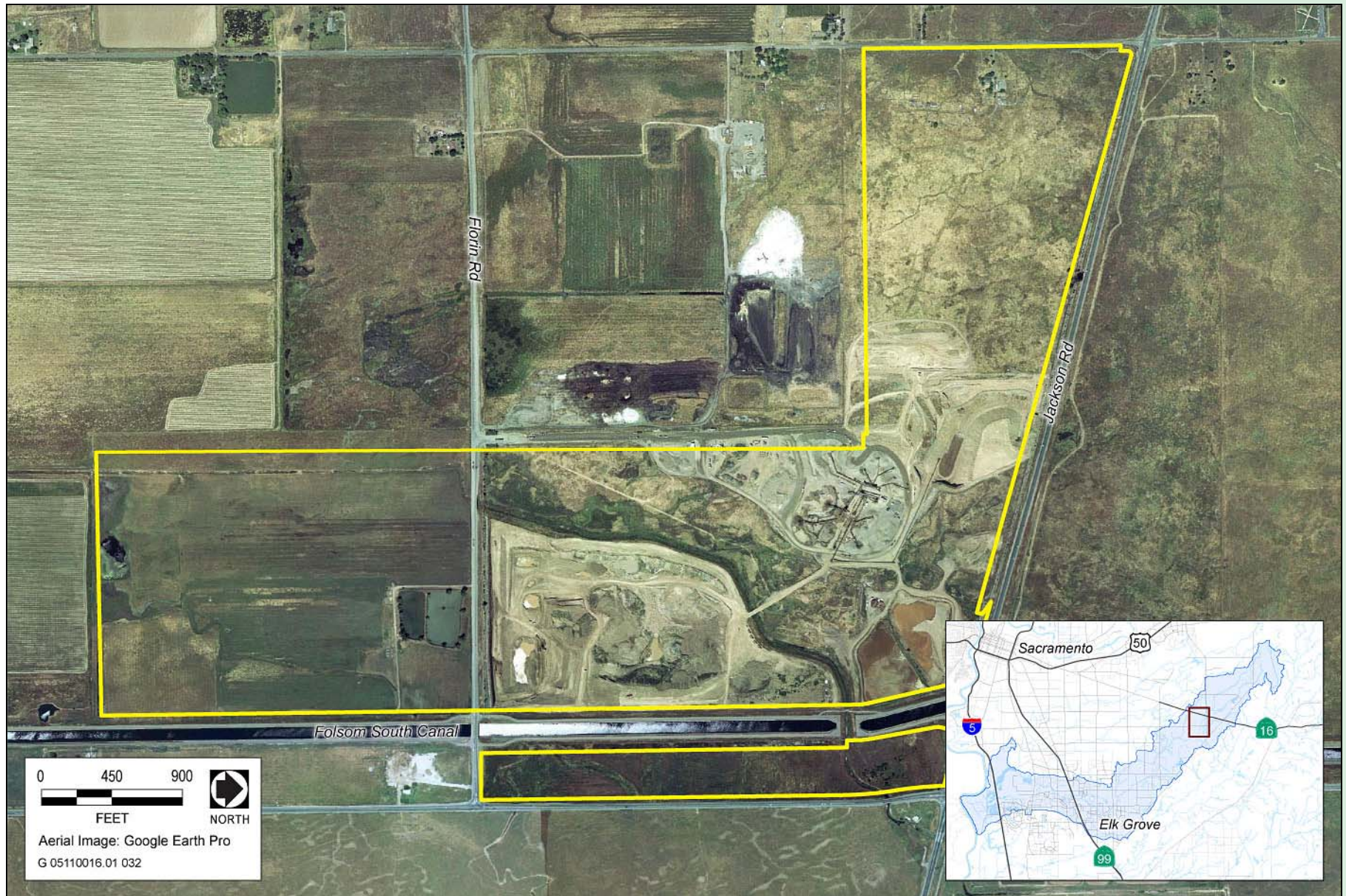
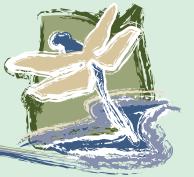




Stream restoration potential is high for this reach of Laguna Creek.

Recommended Action No. 4 – Vulcan Triangle Reclamation and Stream Restoration

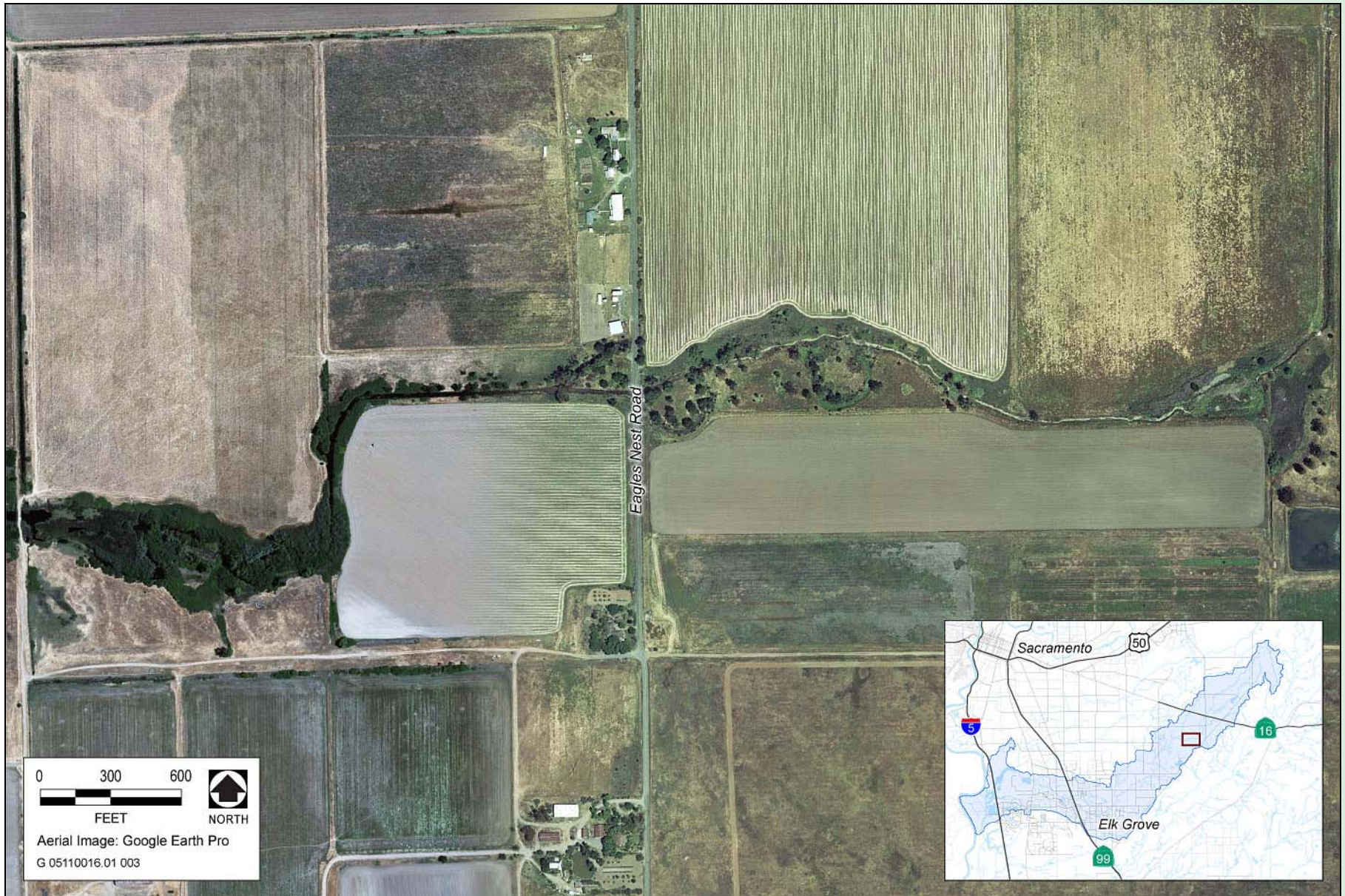
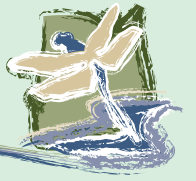
Location	The Triangle Rock Mining Operation is located along Laguna Creek near the intersection of Sunrise Boulevard and Jackson Road.		
Description	<ul style="list-style-type: none"> ▶ The site is currently being mined for aggregates and these mining activities are environmentally analyzed in a draft EIR ("Sacramento Aggregates Expansion" (Control No. 2007-0397, Sacramento County DERA)). After mining operations have ceased in the parcel south of Florin Rd., the mining company plans to restore a meander pattern back into Laguna Creek and establish a revegetation planting plan within the mining project area. The County proposes to use the mining pit as a detention basin to remove the shallow floodplain and eliminate the threat of flooding to existing (and future) structures within the area of spill from Laguna Creek to the Gerber/Elder Creek watershed. This area of interbasin transfer of flood flows occurs approximately 6 miles downstream of the proposed Triangle Basin site. ▶ Sacramento County DWR is currently conducting a Triangle Rock Environmental Assessment Study which is evaluating current hydrologic and ecologic conditions in Laguna Creek in this area and comparing these conditions to anticipated conditions after the proposed Triangle Rock Basin is in use to assess potential impacts that the basin may have on downstream stream and habitat conditions. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends that upper watershed stakeholders work collaboratively to ensure community input is integrated into the Triangle Rock Study, and that the potential partners explore alternatives for stormwater drainage and flood management for this area of the upper watershed. 		
Potential Partners	Vulcan / Triangle, Sacramento County DWR, ULCC, LCWC, upper watershed landowners		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide community connections? Yes, via the trail system ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ This project will require CEQA review (Initial Study/EIR). Three permits would likely be needed: DFG 1602, CWA Section 404, Regional Water Board 401 Certification; permitting could take one year or more. 		





Recommended Action No. 5 – Waegell Ranch Reach Restoration

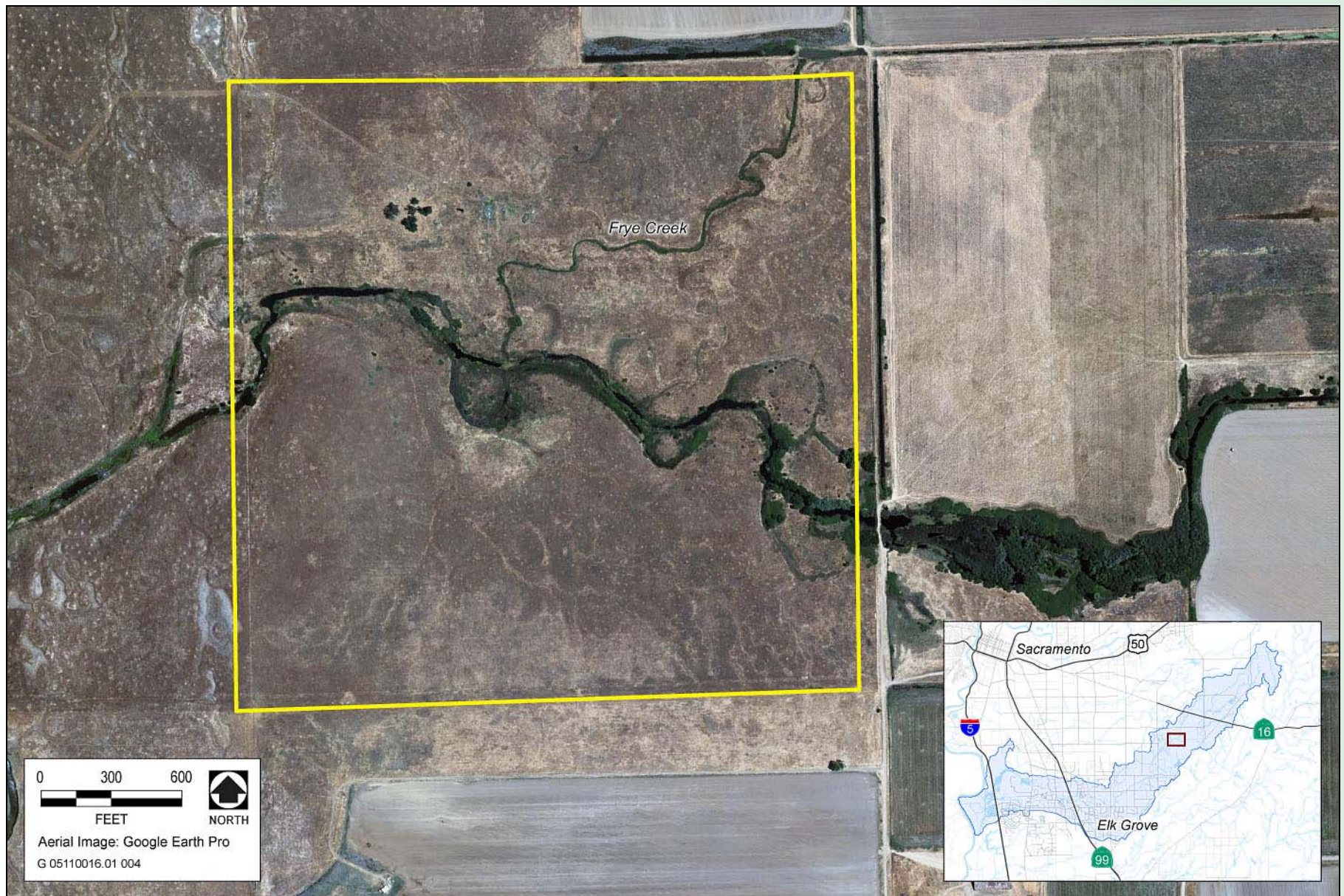
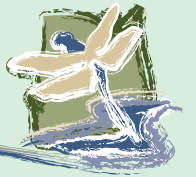
Location	The Waegell Ranch property is located southwest of Vulcan Rock to Eagles Nest Road and just beyond.		
Description	<ul style="list-style-type: none"> ▶ The segment of Laguna Creek that flows through the Waegell property has been straightened and channelized as a result of past agricultural activities. Members of the Waegell family have expressed an interest and willingness to restore the creek channel to a more natural alignment. ▶ The existing channel is heavily altered and is not in its natural alignment. While geomorphic assessments indicate that this segment of the channel is relatively stable and not vulnerable to erosion, the straightened channel does result in increased water velocities and reduced connectivity with the floodplain. 		
Recommendations	<ul style="list-style-type: none"> ▶ Restoring the channel to a more natural alignment with meanders and connected floodplain will provide a more natural dissipation of energy and promote riparian plant and tree species regeneration. Historical oxbows and meander scars along the stream reach offer opportunities for reconnection and a restored natural alignment. 		
Potential Partners	Waegell family, LCWC.		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action increase watershed connectivity? Yes, the project increases hydrologic and habitat connectivity. ▶ Is the action dependent on another? No, this can be an independent action. ▶ Is the project visible to community? The project is not readily visible to the community; however, private tours may be available. 		
Other	<ul style="list-style-type: none"> ▶ This project will potentially require CEQA review (most likely Initial Study/Mitigated Negative Declaration). Three permits would likely be needed: DFG 1602, CWA Section 404, Regional Water Board 401 Certification; permitting could take one year or more. 		





Recommended Action No. 6 – Shehadeh Reach: Exploring Corridor Conservation and Upland Land Use

Location	Laguna Creek between the Waegell property and Andal County Park.		
Description	<ul style="list-style-type: none"> ▶ The Shehadeh family have been active participants in the LCWC and ULCC processes and are interested in exploring the potential for both conservation and agricultural or other upland land use on their property. The confluence of Frye Creek and Laguna Creek occurs on their parcel. ▶ The hydrology along this reach of Laguna Creek is complex; there are many channels and terraces across the landscape. In order to maximize the conservation and upland land use potential it will be necessary first to define the active channel boundaries throughout the property. Without an understanding of where the water flows during different stages, any upland land use may decrease conservation potential by disrupting hydrologic conditions and the plant and animal species dependent upon them. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends establishing a survey of channels and wetland resources on the Shehadeh property as a first step in defining land use and conservation opportunities, and exploring the inclusion of a portion of the Laguna Creek Parkway recreational trail as a potential corridor / upland land use. 		
Potential Partners	The Shehadeh family, ULCC, LCWC, Southgate Recreation and Park District, Sacramento Valley Conservancy		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide watershed connections? No ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes, if trail is part of project. 		
Other	<ul style="list-style-type: none"> ▶ It is not anticipated that this project will require regulatory permitting or CEQA review. 		

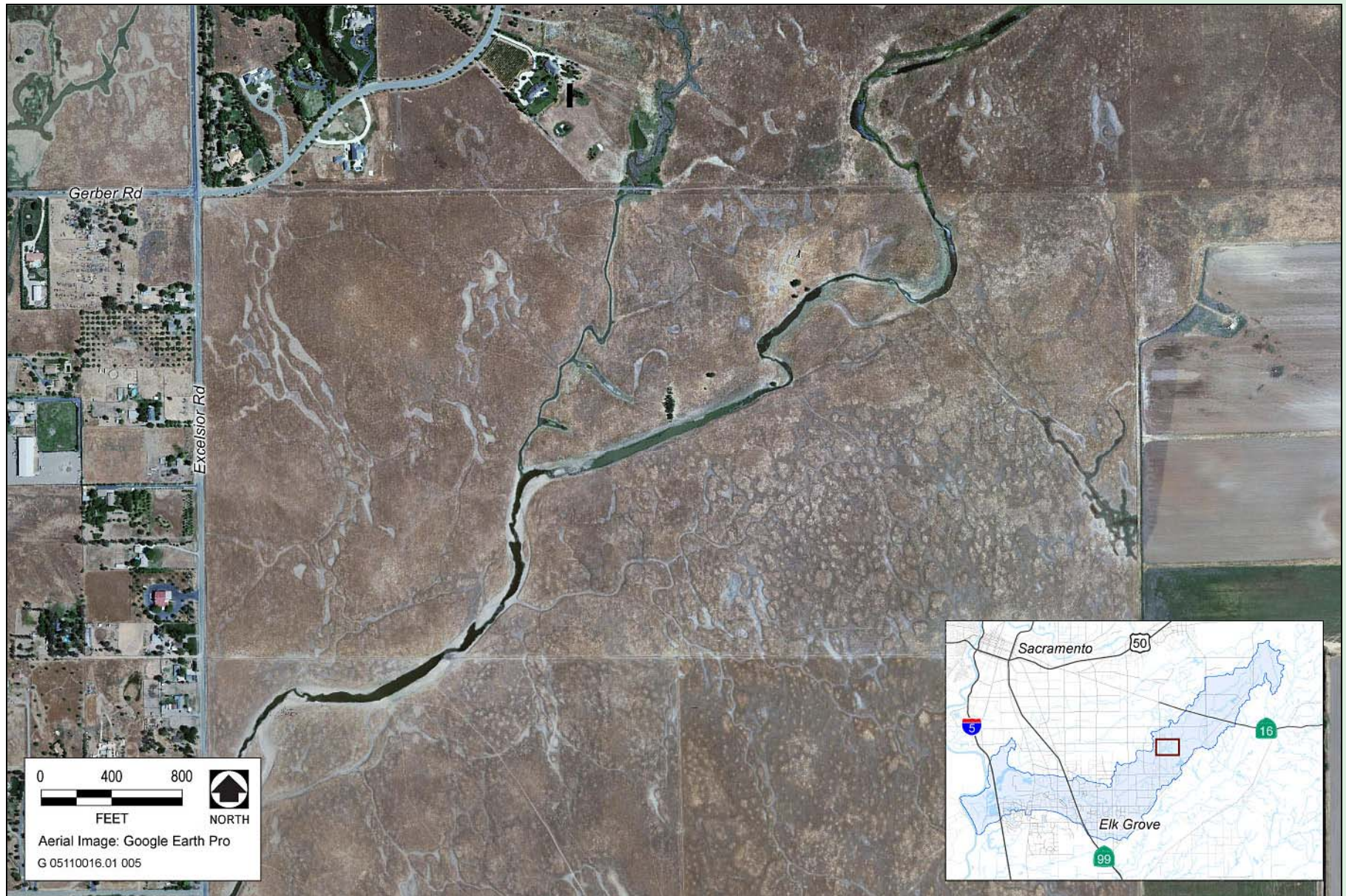
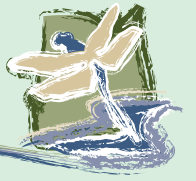




Algal blooms along Laguna Creek after a recent grass fire.

Recommended Action No. 7 – Conservation Area Reach Water Quality Measures

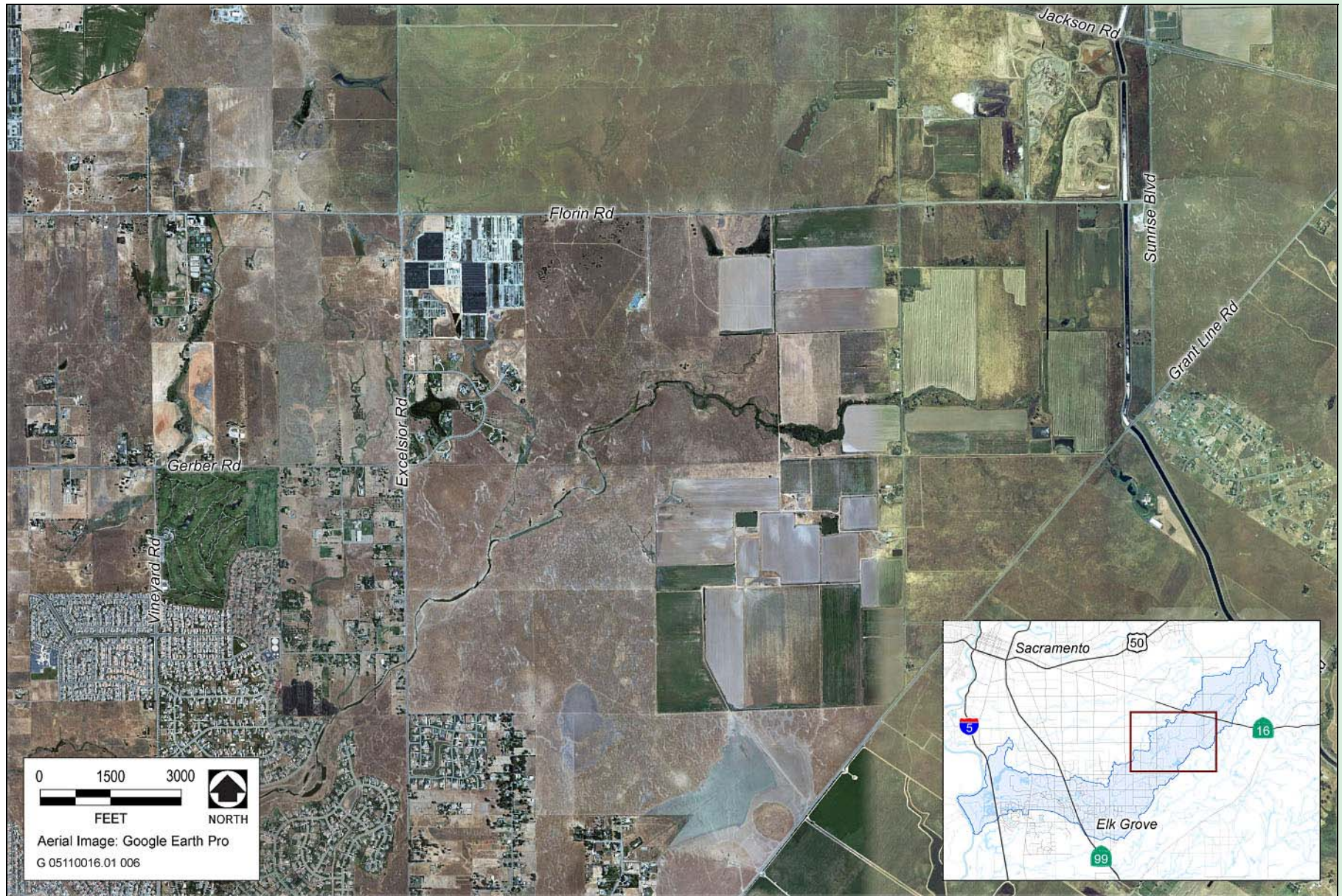
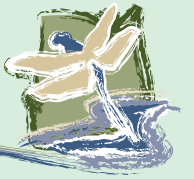
Location	The Conservation Area Reach of Upper Laguna Creek encompasses the area where Laguna Creek flows through three parcels of land immediately upstream of Excelsior Road: APN 12300200010000; 12300100030000; and 06701100370000 (Andal County Park)		
Description	<ul style="list-style-type: none"> ▶ Three tributaries contribute water to Laguna Creek as they flow north to south across agricultural, low density agricultural/residential, and conserved open-space lands. The easternmost tributary is Frye Creek. The middle of the three is unnamed and flows south from a local nursery, through the Birch Ranch development and through a conservation area into Laguna Creek. The westernmost tributary, also unnamed, flows south of Florin Road just west of Excelsior Road, south across Gerber Road and through the Spiva Road Community to Laguna Creek. ▶ Bioassessment results from Laguna Creek at the Were parcel indicated that observed algal blooms and apparent photosynthesis-induced swings in pH and dissolved oxygen may be the result of nutrient loading associated with inputs from tributary streams and/or cattle grazing that exists on the parcel. This apparent biochemical water quality process appears to be limiting the ecological health of the creek at this location. 		
Recommendations	<ul style="list-style-type: none"> ▶ It is recommended that additional water quality monitoring be conducted throughout this reach and its tributaries to confirm these preliminary findings and identify other potential loading source(s). Additionally, it is also recommended that alternative summer grazing management practices be explored to reduce cattle use within the immediate creek corridor. Any changes to grazing management should consider subsequent effects on other resources and vegetation communities. 		
Potential Partners	Private Landowners, LCWC, SVC, Southgate Recreation and Park District		
Watershed Objectives	<input type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action increase watershed connectivity? Habitat connectivity could be improved through improved water quality conditions. ▶ Is the action dependent on another? No, this can be an independent action. ▶ Is the project visible to community? Yes, the project is visible from Excelsior Road. 		
Other	<ul style="list-style-type: none"> ▶ This project is not anticipated to require environmental review or permitting. 		





Recommended Action No. 8 – Conservation Area Trail Development

Location	The Conservation Area Reach of Upper Laguna Creek encompasses the area where Laguna Creek flows through three parcels of land immediately upstream of Excelsior Road: APN 12300200010000; 12300100030000; and 06701100370000 (Andal County Park).		
Description	► Conservation easements on some of these parcels currently allow for the potential of trail development along the creek corridor, while others do not.		
Recommendations	► This action recommends exploring a modification of management practices to include a connecting segment of the Laguna Creek Parkway recreational trail through the Conservation Area reach.		
Potential Partners	Private landowners, Sacramento County, Southgate Recreation and Park District, SVC		
Watershed Objectives	<input type="checkbox"/> Flood Protection	<input type="checkbox"/> Water Quality	<input checked="" type="checkbox"/> Education & Stewardship
	<input type="checkbox"/> Ecosystem Processes	<input type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Recreation
Watershed Context	► Does the action provide watershed connections? Yes		
	► Is the action dependent on another? No		
	► Is the project visible to community? Yes, if volunteer monitoring is involved.		
Other	► It is not anticipated that this project will require regulatory permitting or CEQA review.		

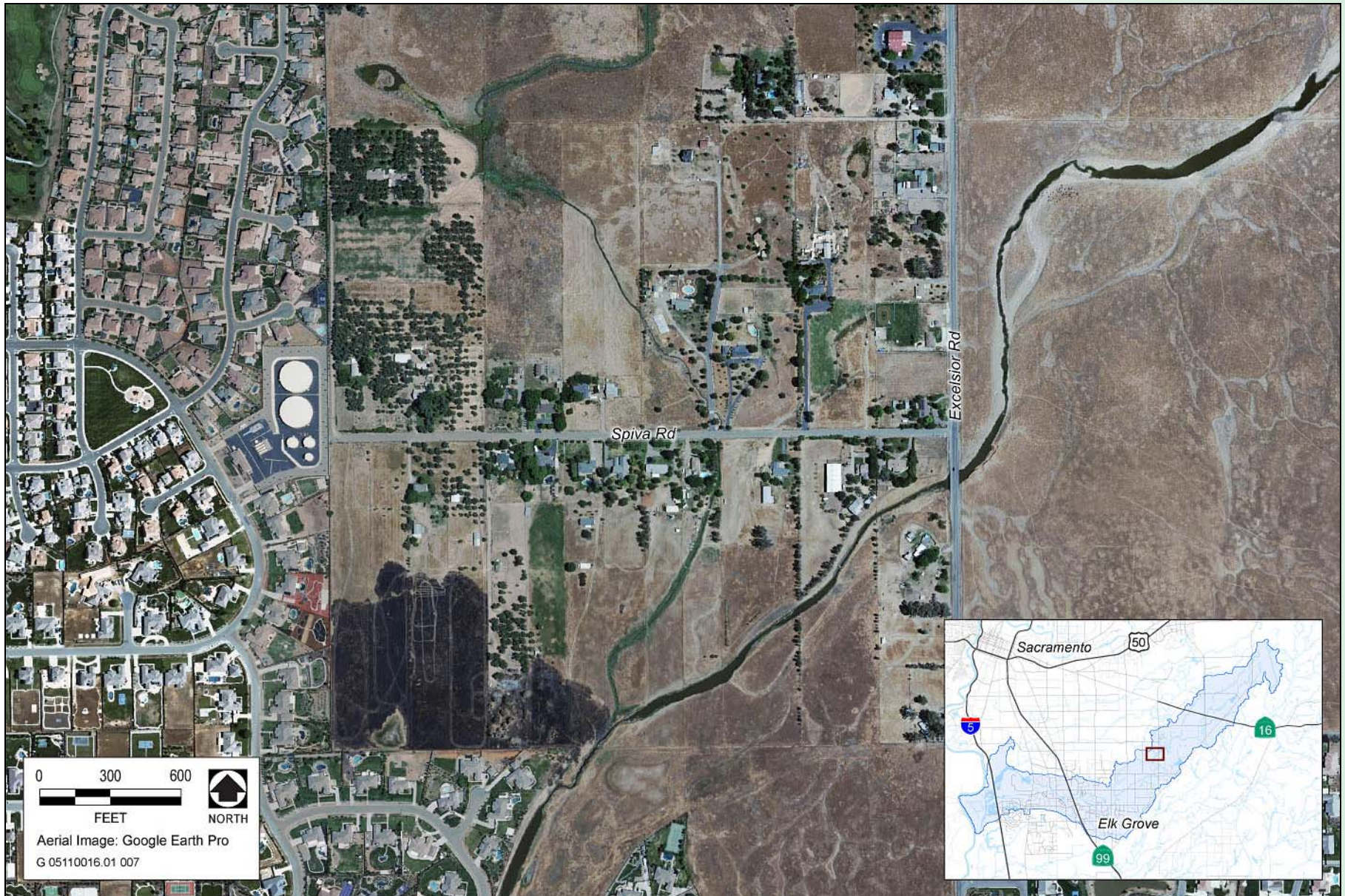
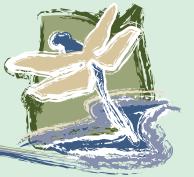




Streamside residents and stream scientists discuss preserving Laguna Creek habitat.

Recommended Action No. 9 – Spiva Road Community

Location	Laguna Creek downstream of Excelsior Road to Silver Springs.		
Description	<ul style="list-style-type: none"> ▶ Laguna Creek runs through several Spiva Road landowners' properties before heading into the Silver Springs/Vineyard reach. Several of the Spiva Road landowners have been active participants in both ULCC and LCWC. ▶ The Spiva Community landowners who have attended LCWC and ULCC meetings have lived along Laguna Creek for several decades, and thus represent a valuable source of information regarding the nature of upper Laguna Creek during their time on the land. They have expressed their desire to see a Laguna Creek trail alignment from Silver Springs upstream to areas east of Excelsior travel around rather than through their properties. Southgate Recreation and Park District would like to continue to work collaboratively with Spiva residents on this issue. In its current land use, the Spiva community provides flood protection to structures. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends that the Spiva Community, LCWC, and Southgate continue to work together on issues affecting Spiva Community landowners. 		
Potential Partners	Spiva Road Community landowners, ULCC, LCWC, Southgate Recreation and Park District		
Watershed Objectives	<input type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide watershed connections? No ▶ Is the action dependent on another? No ▶ Is the project visible to community? No 		
Other	<ul style="list-style-type: none"> ▶ It is not anticipated that this project will require regulatory permitting or CEQA review. 		

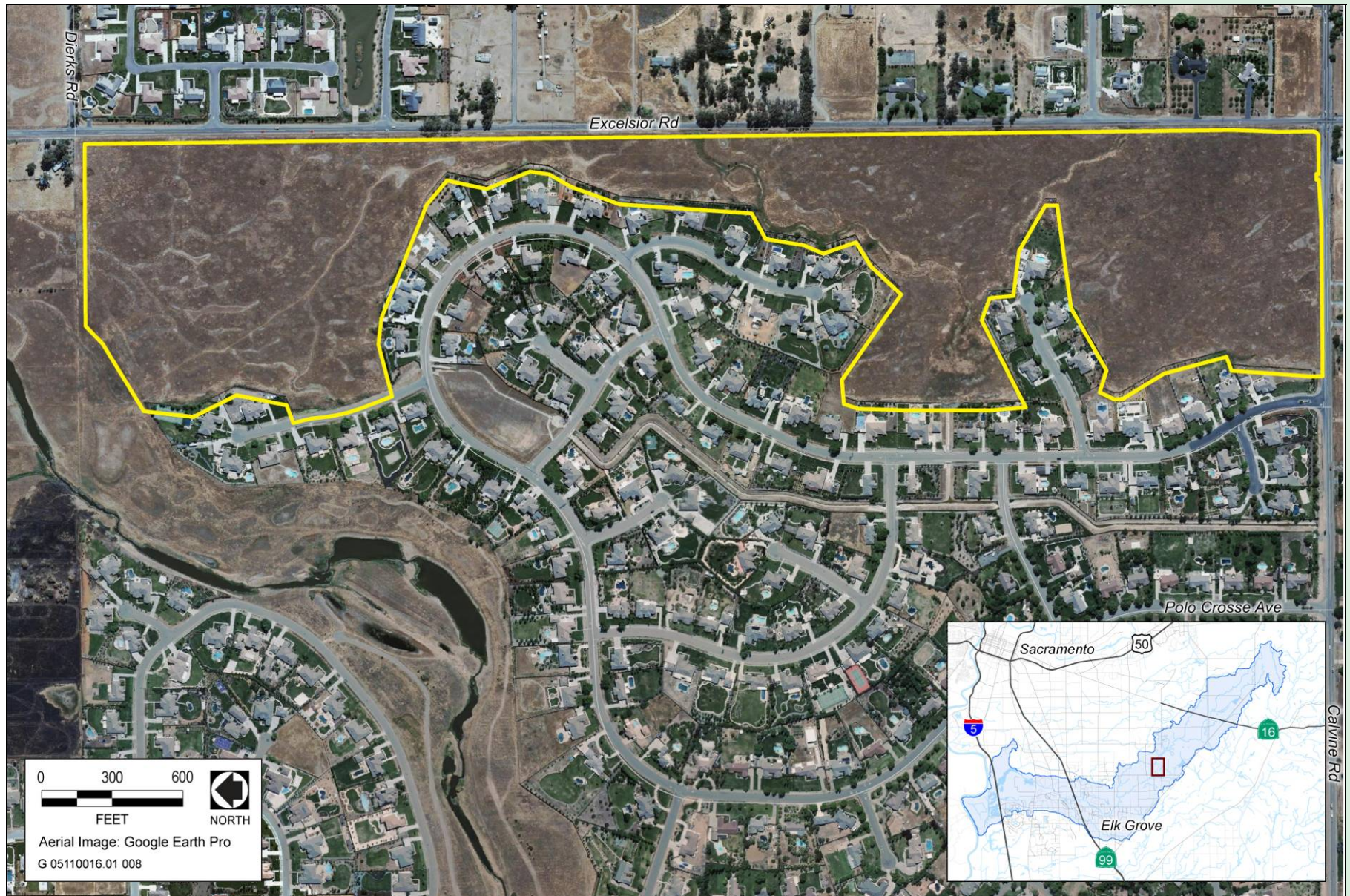




Looking south into Lot P.

Recommended Action No. 10 – Vineyard Area ‘Lot P’

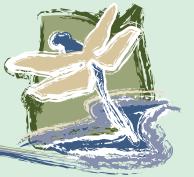
Location	South of Laguna Creek, along west side of Excelsior Road and north of Calvine Road in unincorporated Sacramento County. APN#122-0110-019-0000.		
Description	<ul style="list-style-type: none"> ▶ “Lot P” is 85-acre parcel created in 1991 when the Silver Springs tentative subdivision map was approved by Sacramento County. The property includes vernal pools and is referred to in the Silver Springs conditions of approval as a “vernal pool preserve.” ▶ Sacramento County Planning staff proposed an overlay designation of “Resource Conservation Area” for this property in its draft General Plan 2030. There are currently questions regarding original intent to preserve the land as open space or leave the potential open for future development. The land is currently zoned AR-2. The property owner (AKT Development) has submitted an application to the County to amend the original conditions of approval and develop the property as residential land use (re-zone to AR-1). There is a drainage connection between Lot P and the Dierkes Ranch development across Excelsior Road. 		
Recommendations	<ul style="list-style-type: none"> ▶ Monitor the application and development review process. If the owner’s application/re-zone is approved, ensure that the creek is protected and recreational connections are provided from the Lot P development to the creek trail system which runs west toward Vineyard Road as per Southgate’s recommendations. If drainage connection(s) to the creek are planned, runoff discharge (quantity and quality) should not adversely impact the creek and its resources. 		
Potential Partners	Lot P developer, Sacramento County Depts. Of Community Development and Planning and Water Resources (drainage), Southgate Recreation and Park District (land owner/manager of creekside land to north/west), Silver Springs Homeowners’ Association, equestrian trail users		
Watershed Objectives	<input type="checkbox"/> Flood Protection <input type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide connections? Yes, open space and potential trail connections to Vineyard Reach. ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ A conservation easement in the area along the creek west of this project may affect this action. ▶ Environmental permitting needs are currently unknown; need further project definition. 		





Recommended Action No. 11 – Vineyard Storm Drain Daylighting

Location	South side of Laguna Creek, between Excelsior and Vineyard Roads in unincorporated Sacramento County.		
Description	<ul style="list-style-type: none"> ▶ Two piped storm drain outfalls were installed in the early 1990s to carry urban runoff from the Silver Springs development under a large open space corridor to the creek. ▶ These two piped storm drain outfalls convey untreated urban runoff to Laguna Creek. This segment of the creek is currently being incised (due to head-cutting) as a result of past downstream channel modifications. The incision has resulted in the undermining of the concrete aprons. The issues at the source of the head-cutting problem are being addressed in Recommended Action No. 12. 		
Recommendations	<ul style="list-style-type: none"> ▶ Proposed project would daylight the pipes and create new vegetated water quality swales (possibly with grade steps) to filter/detain runoff as it travels to the creek. The proposed swales would improve the area's aesthetics compared to the current pipe and concrete apron design. The existing equestrian trail in the floodplain area would need to cross the swales, but there is no maintenance road conflict in that area. 		
Potential Partners	Southgate Recreation and Park District (land owner/manager), Sacramento County Dept. of Water Resources (drainage system owner/easement), Silver Springs Homeowners' Association, equestrian trail users		
Watershed Objectives	<input type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input type="checkbox"/> Education & Stewardship <input type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide connections? No ▶ Is the action dependent on another? Yes (cessation of downstream channel modifications) ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ A conservation easement in the area east of this project may affect this project. ▶ This project will require CEQA review (most likely Mitigated Negative Declaration). Three permits would likely be needed: DFG 1602, CWA Section 404, Regional Water Board 401 Certification; permitting could take one year or more. 		

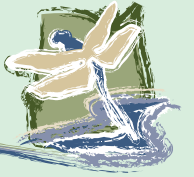




Bank slumping occurs along this unstable reach of Laguna Creek.

Recommended Action No. 12 – Southgate Detention Basins and Trail Oversight of Implementation

Location	North side of Laguna Creek, west of Vineyard Road and east of the old Central California Traction Railroad tracks in unincorporated Sacramento County. APN #122-0130-006, 010, and 011, 122-0120-012, and 122-0120-049.		
Description	<ul style="list-style-type: none"> ▶ Sacramento County and Southgate Recreation and Park District are proposing the construction of three detention basins and a multi-use trail (with pedestrian bridges and three bench/lookout areas with signage) in this location. This project is one component of the “Upper Laguna Creek Drainage Improvement and Trail System” proposed by the County and Southgate. The proposed 15.14 acre flood control basin will include ~10 acres of active recreation (soccer fields). The two water quality basins (5.70 and 0.68 acres in size) are proposed to treat urban runoff from existing residential developments north and south of Laguna Creek. The proposed water quality basin designs include habitat for the giant garter snake. Garfoot Greens Subdivision (RD-4 and 5, 109 lots on 60 acres) is proposed to the north. ▶ The hydrogeomorphology findings for this area indicate unstable creek banks and areas where existing outfalls to the creek are creating erosion problems (see photo above). This is an area of the creek that was reportedly historically dredged, which has created upstream backcutting problems (see Action No. 11). 		
Recommendations	<ul style="list-style-type: none"> ▶ Proposed action is to monitor the application and development review process and ensure that every effort is made to protect the creek during and after construction, and hopefully repair/restore existing problem areas in the process. Discharge from the new basin outfalls (quantity and quality) should not adversely impact the creek and its resources. Other elements could include helping Southgate to design the interpretive signage and possibly developing educational/informational brochure for residents living north/south of the creek. 		
Potential Partners	Sacramento County Dept. of Water Resources (drainage easement), Southgate Recreation and Park District (land owner/manager), LCWC, Central Valley Rails to Trails Foundation, local Homeowners’ Associations		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide connections? Yes ▶ Is the action dependent on another? Yes (other County drainage improvements; Action 11) ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ Environmental permitting needs are currently unknown; need further project definition. 		





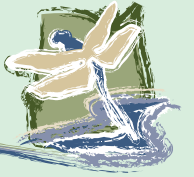
Laguna Creek (January 1, 2006) looking upstream from the Carmencita Avenue bridge.



Laguna Creek one month later (January 30, 2006) looking upstream from the Carmencita Avenue bridge.

Recommended Action No. 13 – Carmencita Reach Oversight of Implementation

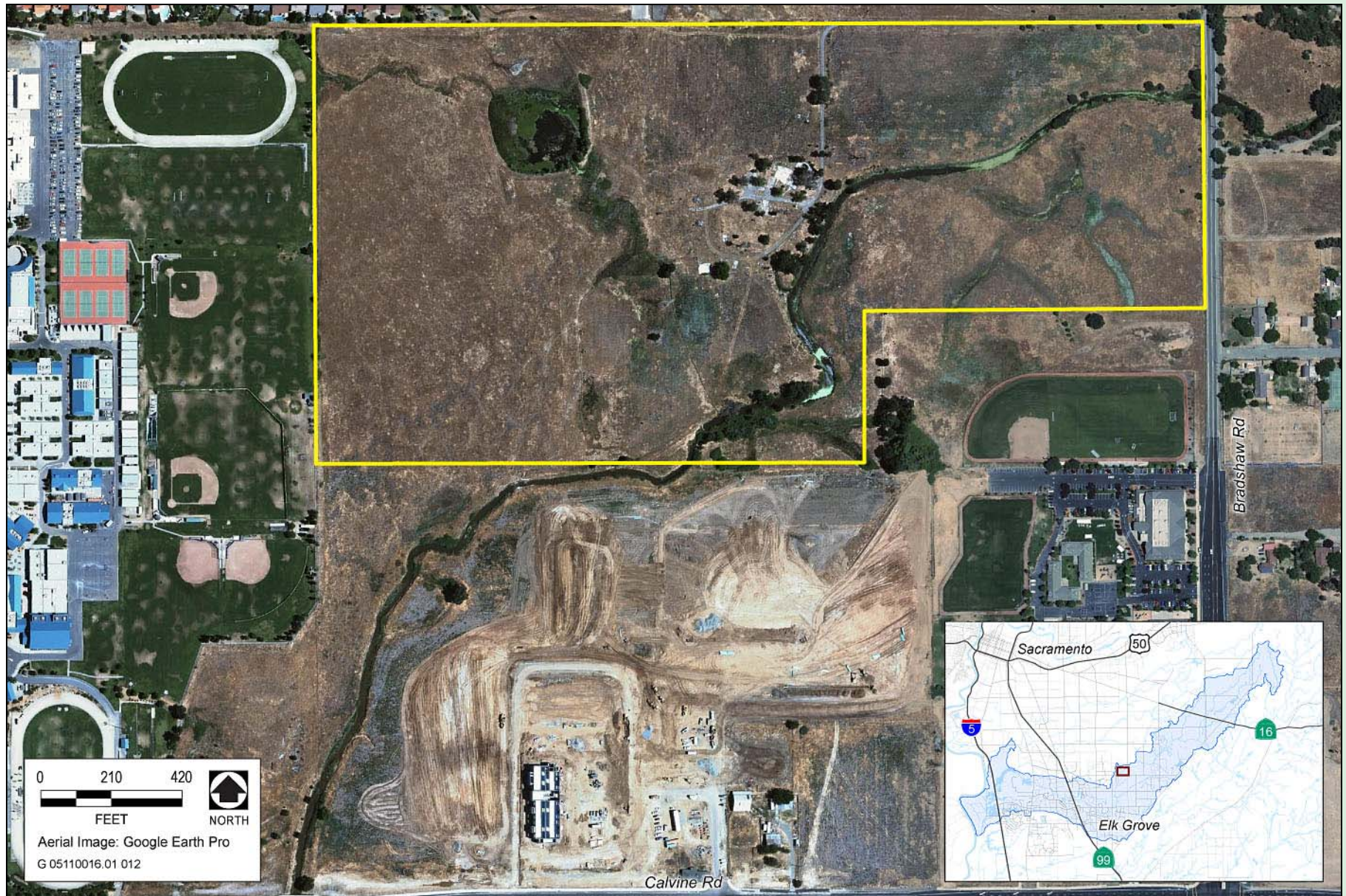
Location	South side of Laguna Creek, north of Calvine Road, east of Bradshaw Road, straddling Carmencita Avenue in unincorporated Sacramento County (Vineyard Community).		
Description	<ul style="list-style-type: none"> Landowners are proposing to develop ~102 acre property as primarily residential land use (single-family, cluster homes and apartments (RD-5 to 20)). Proposed runoff from development would be treated in a new 1.48 acre water quality basin adjacent to proposed park alongside Laguna Creek and in the new Bradshaw Christian School basin, also along the creek (under construction summer/fall 2007). Both basins are part of "Upper Laguna Creek Drainage Improvement and Trail System" proposed by the County and Southgate. It is not clear if additional water quality treatment will be provided. Some wetlands will be preserved in northern open space portion of the project, adjacent to the creek. The Draft EIR for the project was published in spring 2007. The project is currently on hold (May 2009). This area is prone to flooding during high-storm events (see above photos, taken during 45-year event in December 31, 2005). 		
Recommendations	<ul style="list-style-type: none"> Proposed action is to monitor the application and development review process and ensure that every effort is made to protect the creek and provide recreational connections from the development to the creek trail system. For drainage connection(s) to the creek, runoff discharge (quantity and quality) should not adversely impact the creek and its resources. Possible associated action could involve working with Southgate on design of proposed future interpretive center/signage in the "proposed park parcel". 		
Potential Partners	Carmencita developer, Sacramento County Depts. of Planning, Environmental Review and Assessment and Water Resources (drainage), Southgate Recreation and Park District (land owner/manager of creekside land to north), new Homeowners' Association.		
Watershed Objectives	<input type="checkbox"/> Flood Protection <input type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> Does the action provide connections? Yes Is the action dependent on another? Yes (other County drainage improvements) Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> Environmental permitting needs are currently unknown; need further project definition. 		





Recommended Action No. 14 – The Ogden Reach Policies Development

Location	Laguna Creek between Bradshaw Road and Calvine Road on the north side of the creek in unincorporated Sacramento County		
Description	<ul style="list-style-type: none"> ▶ Members of the Ogden family have been active participants in the LCWC and ULCC processes and have prepared a conceptual development plan for their property along Laguna Creek. ▶ Southgate Recreation and Parks District has discussed trail connections to Laguna Creek Parkway that could be part of future development plans. Runoff from the Churchill Downs development to the north contributes water to the ponds on the Ogden property. A beaver management study completed as part of the ULCC Master Plan identified the Ogden reach as active beaver habitat. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends that policies included in the Laguna Creek Watershed Management Plan (Section 6.3 and Appendix H) be considered in future planning efforts for this site, including preservation of the creek corridor, implementation of appropriate stormwater management controls, integration of LID design solutions, and exploration of possible trail connection through the development which will connect the Tillotson Parkway (along north side of the Sheldon High School) to the Laguna Creek Parkway. 		
Potential Partners	The Ogden family, Sacramento County DWR, Southgate Recreation and Park District, EGUSD (Sheldon High School)		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide watershed connections? Yes ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ Future development projects will require CEQA review. Additional permits may be needed, depending on the nature of the project. 		





Laguna Creek upstream of Calvin Road.

Recommended Action No. 15 – Bradshaw Christian School Reach Policies and Interpretive Signage

Location	South of Laguna Creek between Bradshaw Road and Calvin Road in unincorporated Sacramento County		
Description	<ul style="list-style-type: none"> ▶ The Bradshaw Christian School is developing their campus. They have constructed a water quality detention basin and are planning a future streamside trail. The basin receives runoff from the school site and in the future will receive runoff from the southern area of the Carmencita Ranch development to the east. Southgate will coordinate with Sacramento County and Bradshaw Christian School on the development, alignment, ownership and maintenance of trails and open space along the Laguna Creek corridor. ▶ The detention basin is one of several planned and constructed along upper Laguna Creek and it is important that basins are designed, operated, and maintained in a manner that minimizes their impacts to the receiving channel. The trail may provide opportunities for streamside interpretive signage. The school's proximity to the creek increases the potential for student involvement in stewardship activities. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends that policies included in the Laguna Creek Watershed Management Plan (Section 6.3 and Appendix H) be considered in the future planning efforts for this site, including implementation of appropriate stormwater management controls. This action also recommends developing interpretive signage and stewardship opportunities along this reach of Laguna Creek in partnership with the Bradshaw Christian School. 		
Potential Partners	Bradshaw Christian School, Sacramento County DWR, Southgate Recreation and Park District, ULCC, LCWC		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide watershed connections? No ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ It is not anticipated that this project will require regulatory permitting or CEQA review. 		

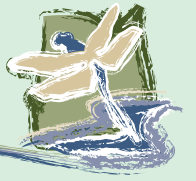




Constructed swale.

Recommended Action No. 16 – Jordan Ranch Swales

Location	Laguna Creek downstream of Calvine Road in the City of Elk Grove		
Description	<ul style="list-style-type: none"> ▶ In 2005, the Jordan Ranch development was built south of Calvine Road, between Laguna Creek and Waterman Road, and water quality swales were constructed to carry runoff from the new development to Laguna Creek (see aerial photo). This project investigates the design of the swales. ▶ Where possible, surface treatment of runoff is preferable to piping water into streams. Some of these swales were designed to achieve water quality treatment. Could they have been better designed? Properly designed vegetated swales can provide both water quality treatment and habitat benefits and their integration into development design plans should be encouraged where appropriate. The Jordan Ranch swales can serve as an example to future streamside developments in the City of Elk Grove and elsewhere of the "do's and don'ts" associated with swale design. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends investigating the efficacy of these swales as water quality treatment BMPs, and the potential to modify them as necessary to increase their water quality benefits. This action also recommends that policies included in this Plan (Section 6.3 and Appendix H) be considered in future planning efforts, including preservation of the creek corridor, implementation of appropriate stormwater management controls, integration of LID design solutions, and trail connection through the development. 		
Potential Partners	City of Elk Grove, ULCC, LCWC, CCSD, future development / home builder entities		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide watershed connections? No ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ Modifications to the existing swales may require CEQA review (most likely Mitigated Negative Declaration). Three permits would likely be needed: DFG 1602, CWA Section 404, Regional Water Board 401 Certification; permitting could take one year or more. 		

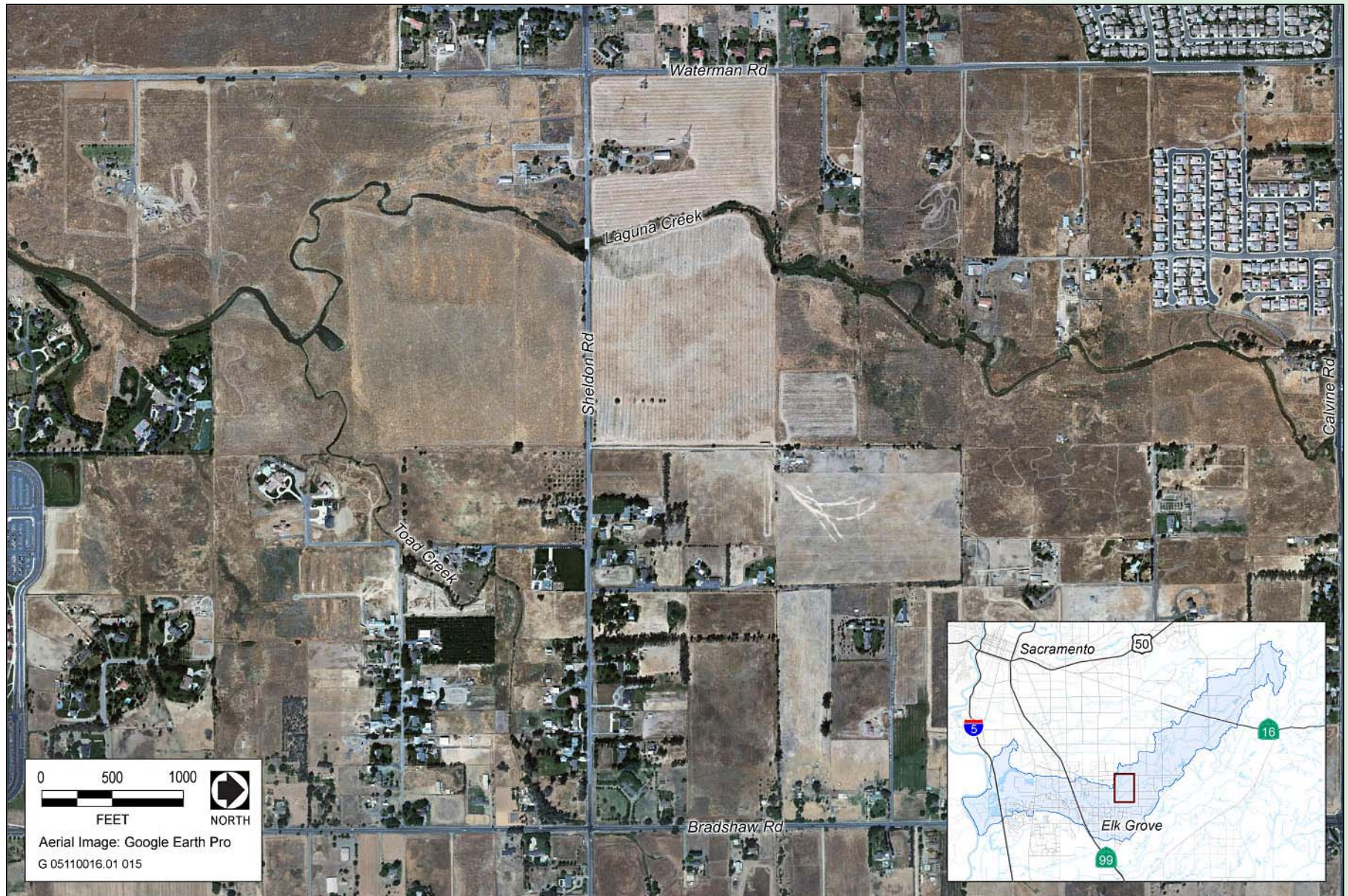
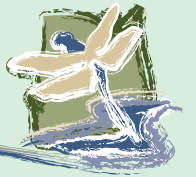




*Looking downstream along
Laguna Creek between Calvine
Road and Sheldon Road*

Recommended Action No. 17 – Elk Grove Rural Block Reach Policies

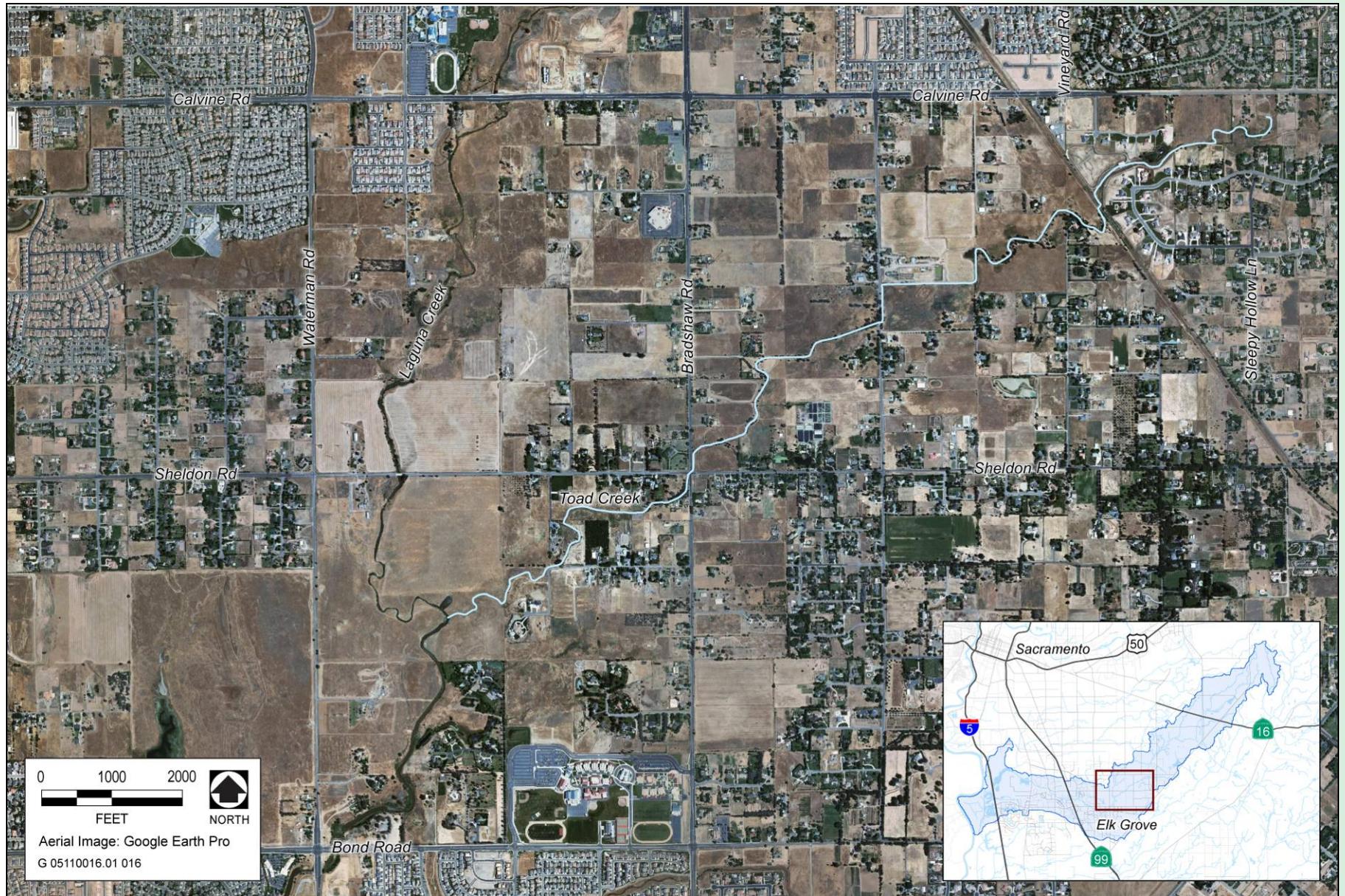
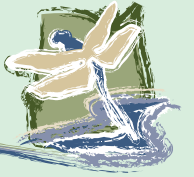
Location	Laguna Creek flows through two parcels of land immediately north and south of Sheldon Road.		
Description	<ul style="list-style-type: none"> ▶ Area is zoned for 2-acre minimum lots. Plans for development of these parcels have been pursued in the past; however, any future plans are currently unknown. ▶ Geomorphic assessment results of the Laguna Creek channel along this reach indicated that the channel is relatively stable. There is some presence of invasive and other nonnative plant species and the channel appears to somewhat disconnected with its floodplain. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends that policies included in this Plan (Section 6.3 and Appendix H) be considered in future planning efforts, including the preservation of a relatively wide creek corridor consistent with ULCC's vision. These parcels can also be considered opportunity sites for tree planting, invasive species removal, and channel restoration projects. 		
Potential Partners	Private Landowners, LCWC, ULCC, City of Elk Grove		
Watershed Objectives	<input type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input type="checkbox"/> Education & Stewardship <input type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action increase watershed connectivity? Hydrologic and habitat connectivity could be preserved and improved. ▶ Is the action dependent on another? No, this can be an independent action. ▶ Is the project visible to community? Yes, the project is visible from Sheldon Road. 		
Other	<ul style="list-style-type: none"> ▶ The policy-based component of this action is not anticipated to require environmental review or permitting. Restoration efforts could require review and permitting depending upon extent of activities. 		





Recommended Action No. 18 – Strategic Plan for Toad Creek (Tributary 1) Subwatershed

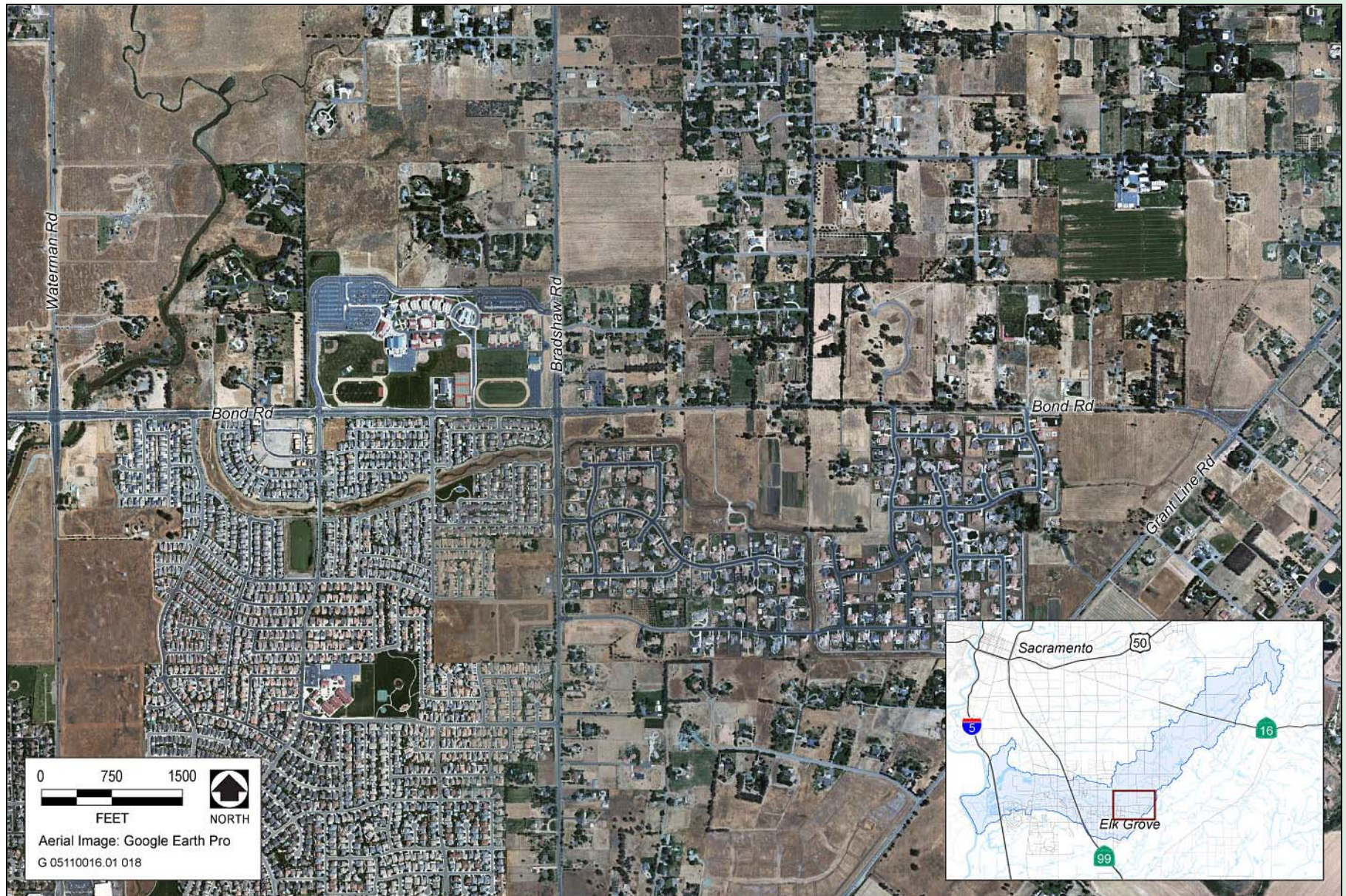
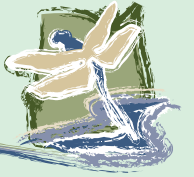
Location	Toad Creek is a 4.2-mile tributary to Laguna Creek. Its point of connection with Laguna Creek is located between Sheldon Road and Bond Road, and Waterman Road and Bradshaw Road.		
Description	<ul style="list-style-type: none">▶ Land uses in the Toad Creek subwatershed consist primarily of large lot rural residential with some undeveloped parcels and other uses (e.g., nursery operations, agricultural activities). Any potential development plans for parcels in the subwatershed are currently unknown.▶ The Toad Creek subwatershed was not fully assessed due to limited resources and time. Any potential issues in the Toad Creek subwatershed are not well understood and will require additional research and stakeholder outreach.		
Recommendations	<ul style="list-style-type: none">▶ This action entails developing a plan for the Toad Creek subwatershed. The plan should include an assessment of resources, issues, and problems and should tier from the Laguna Creek Watershed Plan.		
Potential Partners	Private Landowners, LCWC, City of Elk Grove		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection	<input checked="" type="checkbox"/> Water Quality	<input checked="" type="checkbox"/> Education & Stewardship
	<input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none">▶ Does the action increase watershed connectivity? Yes▶ Is the action dependent on another? No▶ Is the project visible to community? Yes		
Other	<ul style="list-style-type: none">▶ No environmental review or permitting is anticipated for this planning action.		





Recommended Action No. 19 – Strategic Plan for Sheldon Creek Subwatershed

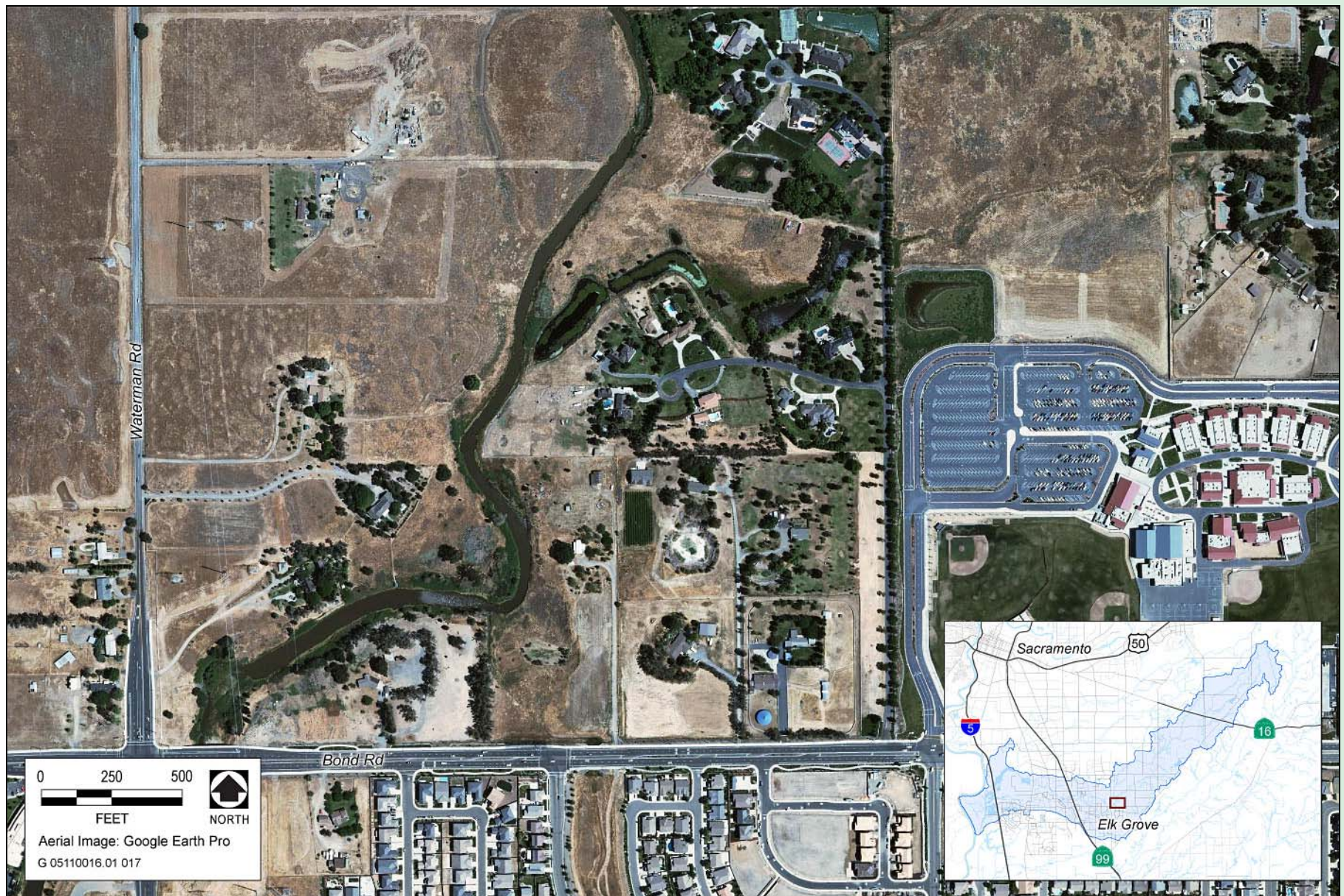
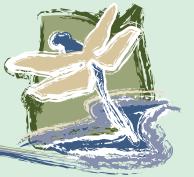
Location	Sheldon Creek is a 3.2-mile tributary to Laguna Creek. Its confluence (point of connection) with Laguna Creek is located just north of Bond Road and east of Waterman Road.		
Description	<ul style="list-style-type: none">▶ Land uses in the Sheldon Creek subwatershed consist primarily of large lot rural residential with some vacant (undeveloped parcels) and other uses. Any potential development plans for parcels in the subwatershed are currently unknown.▶ The Sheldon Creek subwatershed was not fully assessed due to limited resources and time. Any potential issues in the Sheldon Creek subwatershed are not well understood and will require additional research and stakeholder outreach.		
Recommendations	<ul style="list-style-type: none">▶ This action entails developing a plan for the Sheldon Creek subwatershed. The plan should include an assessment of resources, issues, and problems and should tier from the Laguna Creek Watershed Plan.		
Potential Partners	Private Landowners, LCWC, City of Elk Grove		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection	<input checked="" type="checkbox"/> Water Quality	<input checked="" type="checkbox"/> Education & Stewardship
	<input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none">▶ Does the action increase watershed connectivity? Yes▶ Is the action dependent on another? No▶ Is the project visible to community? Yes		
Other	<ul style="list-style-type: none">▶ No environmental review or permitting is anticipated for this planning action.		





Recommended Action No. 20 – Poplar Hollow Reach Policies

Location	Laguna Creek just upstream of the Bond/Waterman Road intersection.		
Description	<ul style="list-style-type: none"> ▶ Two development applications have been submitted to the City of Elk Grove for parcels along this reach of Laguna Creek (Creeside Estates and one other). This reach represents the downstream terminus of the Upper Laguna Creek Collaborative's Master Planning Area. ▶ Future development of this area should include trail extensions along Laguna Creek following the alignment of the City of Elk Grove Trails Master Plan and development interests should participate, or at least be aware of the ULCC Planning process. Incorporation of Low Impact Development design practices into any future development project will decrease the project's impacts to Laguna Creek. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends that policies included in the Laguna Creek Watershed Management Plan (Section 6.3 and Appendix H) be considered in future planning efforts for this site, including preservation of the creek corridor, implementation of appropriate stormwater management controls, integration of LID design solutions, and trail connection through the development. More information is needed to complete this Recommended Action. 		
Potential Partners	City of Elk Grove, ULCC, future development / home builder entities		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide watershed connections? Yes ▶ Is the action dependent on another? No ▶ Is the project visible to community? No 		
Other	<ul style="list-style-type: none"> ▶ Future development projects will require CEQA review. Additional permits may be needed, depending on the nature of the project. 		

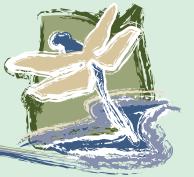




Interpretive kiosk along Laguna Creek near Bond Road.

Recommended Action No. 21 – Jack Hill Park Restoration and Interpretive Signage

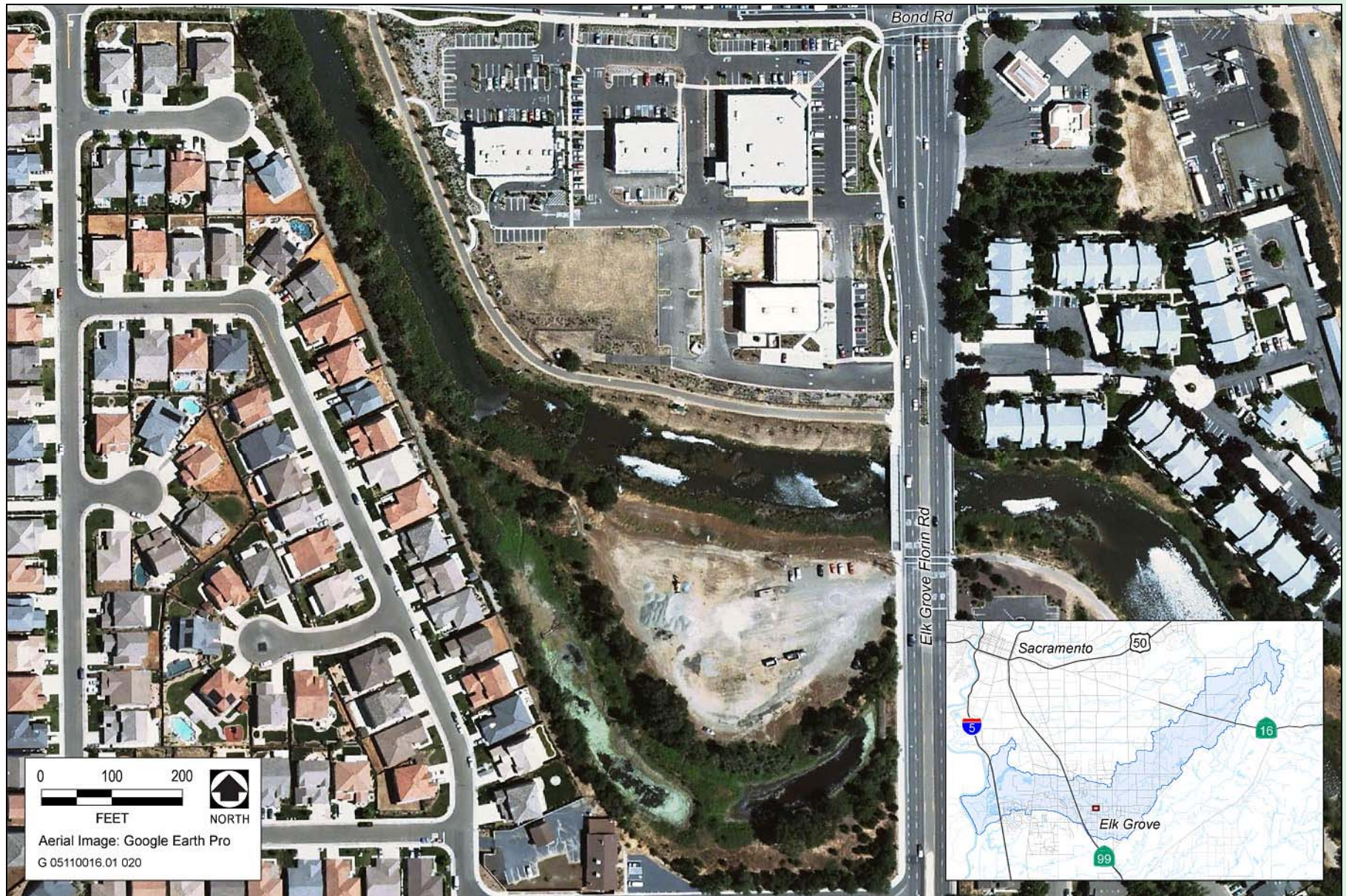
Location	Laguna Creek flows through Jack Hill Park, which is adjacent to Fallbrook development near Porta Rosa Drive within the City of Elk Grove.		
Description	<ul style="list-style-type: none"> ▶ The City of Elk Grove is constructing a new pedestrian bridge over Laguna Creek at Jack Hill Park and will remove the existing at-grade concrete walkway (with three culverts). The existing at-grade walkway floods several times each year and alters hydrology and habitat connectivity of the creek. ▶ The high visibility of this project and the fact that this location represents one of the most highly recreated trail sections in the City of Elk Grove make this a good candidate for effective trailside interpretive signage. 		
Recommendations	<ul style="list-style-type: none"> ▶ As part of the bridge improvement associated with the clear span, the wetland area within the existing footprint of the bridge could be restored. Restoration elements could include setting back and re-grading banks, stabilizing the channel as necessary (to prevent head cut incision that may result from removal of concrete trail and culverts), and restoring, enhancing, and expanding wetland and riparian habitat. Additionally, this project could serve to focus potential mitigation requirements in a meaningful way, and include opportunities to install interpretive signage along the Laguna Creek trail. 		
Potential Partners	City of Elk Grove, LCWC, Fallbrook Neighborhood Association		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action increase watershed connectivity? Yes, the project increases hydrologic, habitat, and human connectivity. ▶ Is the action dependent on another? No, this can be an independent action. ▶ Is the project visible to community? Yes, the project is highly visible. 		
Other	<ul style="list-style-type: none"> ▶ This project will require CEQA review (most likely Initial Study/Mitigated Negative Declaration). Three permits would likely be needed: DFG 1602, CWA Section 404, Regional Water Board 401 Certification; permitting could take one year or more. 		





Recommended Action No. 22 – Creekside Wetland Restoration

Location	South side of Laguna Creek at Creekside Plaza on Bond Road, west of Elk Grove-Florin Road and east of Creekside Estates in the City of Elk Grove. (also known as “Bell South”)		
Description	<ul style="list-style-type: none">▶ This island-like piece of property is surrounded by an old oxbow for Laguna Creek (see aerial photo on reverse) which was cut off when the creek was realigned in the 1950s to build the bridge on Elk Grove Florin Road. Pumped groundwater is used to keep this system wet during summer (Cosumnes CSD operates the well/pump).▶ The U.S. Army Corps of Engineers (Corps) is requiring the Bell South developer to restore wetlands in this area. The conditions of approval for the development project require the land to be deeded to the City of Elk Grove and preserved as open space. A conceptual drawing for the wetland restoration project prepared by ECORP Consulting was found in the Corps' files, but no detailed plans are available and final information has not been submitted by the developer. Current status is uncertain. LCWC has submitted questions to the City related to the proposed design, including whether the future water balance for the site has been studied and addressed properly. In 2008, the City upsized the Bond Road outfall to the creek from 36 to 54 inches (see 2006 draft Drainage Master Plan). During the December 2005 45-year event, there was virtually no freeboard under the Bond Road bridge.		
Recommendations	<ul style="list-style-type: none">▶ Proposed action is to monitor status of this project, get involved in design review and possibly negotiate with the Corps for other beneficial uses of the site, such as interpretive watershed center. If that is not possible, work with the City to ensure long-term financing for open space management, develop open space management plan (include element addressing how to keep site from becoming an attractive nuisance).		
Potential Partners	Developer/land owner, City of Elk Grove (future land owner/manager), Cosumnes CSD, Girl Scout Troop 1563 (has adopted this reach).		
Watershed Objectives	<input type="checkbox"/> Flood Protection	<input checked="" type="checkbox"/> Water Quality	<input checked="" type="checkbox"/> Education & Stewardship
	<input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Habitat	<input type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none">▶ Does the action provide connections? No▶ Is the action dependent on another? No▶ Is the project visible to community? Yes		
Other	<ul style="list-style-type: none">▶ Reportedly this site is subject to a DFG conservation easement (need to locate/review).▶ This project would require CEQA review.		

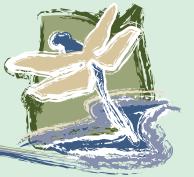




The Camden Lake weir.

Recommended Action No. 23 – Lower Camden Lake and Weir

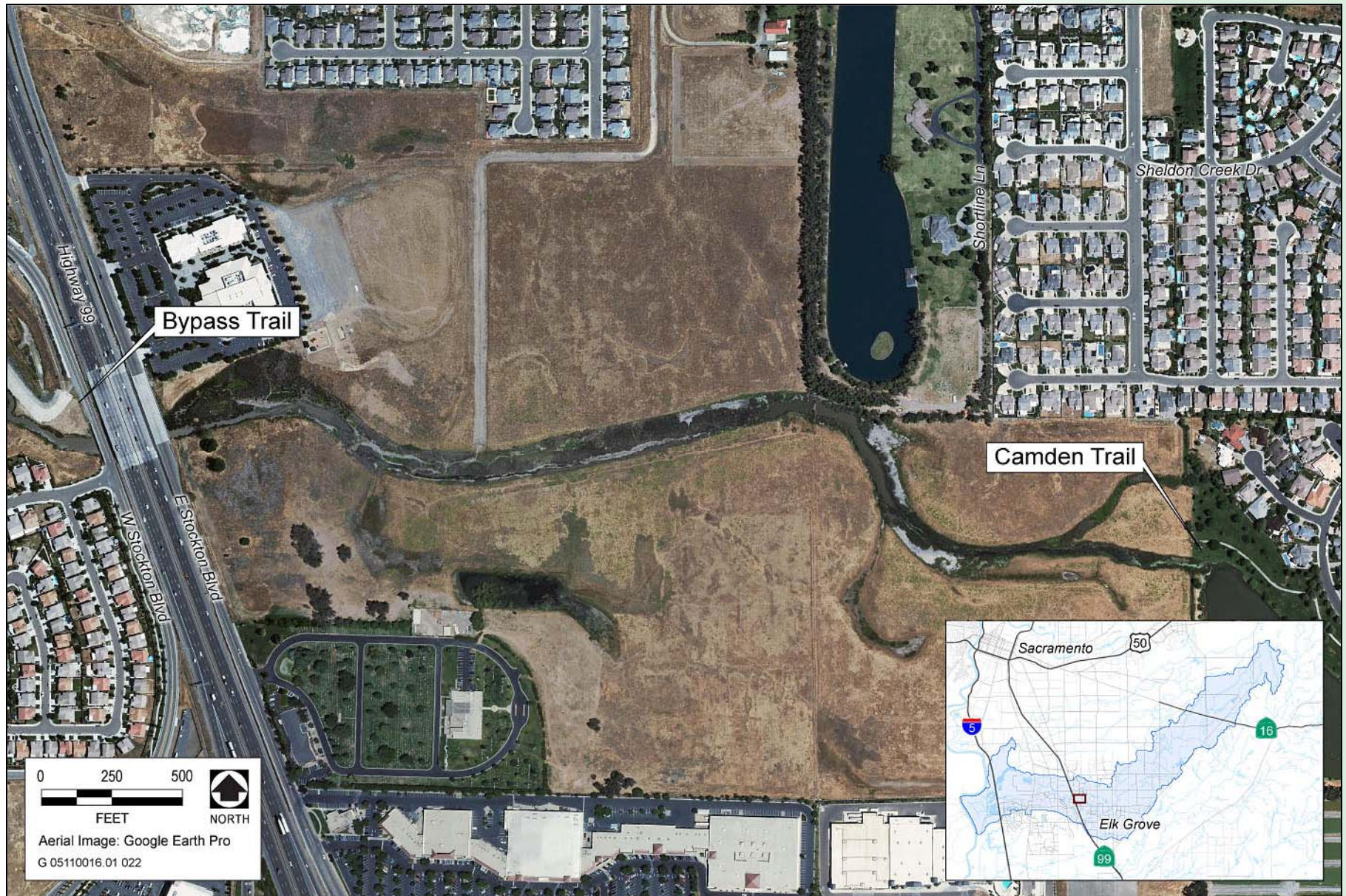
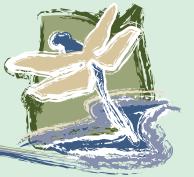
Location	Lower Camden Lake is the downstream lake in a series of three lakes located along the main stem of Laguna Creek, north of Bond Road and is best accessed via Allister Way in the Camden Passage neighborhood.		
Description	<ul style="list-style-type: none"> ▶ The multi-lake/weir system was constructed by the Camden Passage developer in the late 1980s. The greenbelts around the lake system serve as the floodplain during high-storm events; private property has never flooded. Supplemental water is provided via pumped groundwater during summer. Residential development runoff into the lake is not treated. ▶ Seepage is occurring on both ends of the concrete overflow weir creating erosion of the embankments that tie into the weir. There is a history of waterfowl overpopulation problems. Nuisance algal growth in the lake has increased in recent years (CSD removes algae every year). Testing of lake sediments in 2006 by UC Davis shows elevated pyrethroid levels. 		
Recommendations	<ul style="list-style-type: none"> ▶ Reconstruction of the weir and adjacent levee system would stop the seepage and erosion problems, prevent possible failure of the levees, restore the weir's intended function, and protect the downstream creek/wetland habitat. Additional elements could be added to this action to address more watershed objectives: a) control algae problems and reduce irrigation runoff by retrofitting some lakeside vegetation and/or promoting use of "River Friendly" landscaping practices by CSD landscape contractors and residents, b) construction of trail connection behind the weir, and c) coordination with the Sacramento Stormwater Quality Partnership's (SSQP's) proposed future monitoring in this area. Girl Scout Troop #1563 has adopted this stretch of Laguna Creek and will remove trash and report problems. 		
Potential Partners	Cosumnes CSD Parks (landowner, lake/weir/greenbelt maintenance), City of Elk Grove (drainage), Camden Neighborhood Association, SSQP, Vector Control District, East Lawn Cemetery		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide connections? Possibly (if trail behind weir is connected) ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ Permitting needs have not yet been defined, but this action will require CEQA review (Mitigated Negative Declaration). 		





Recommended Action No. 24 –East Lawn Cemetery Property Trails

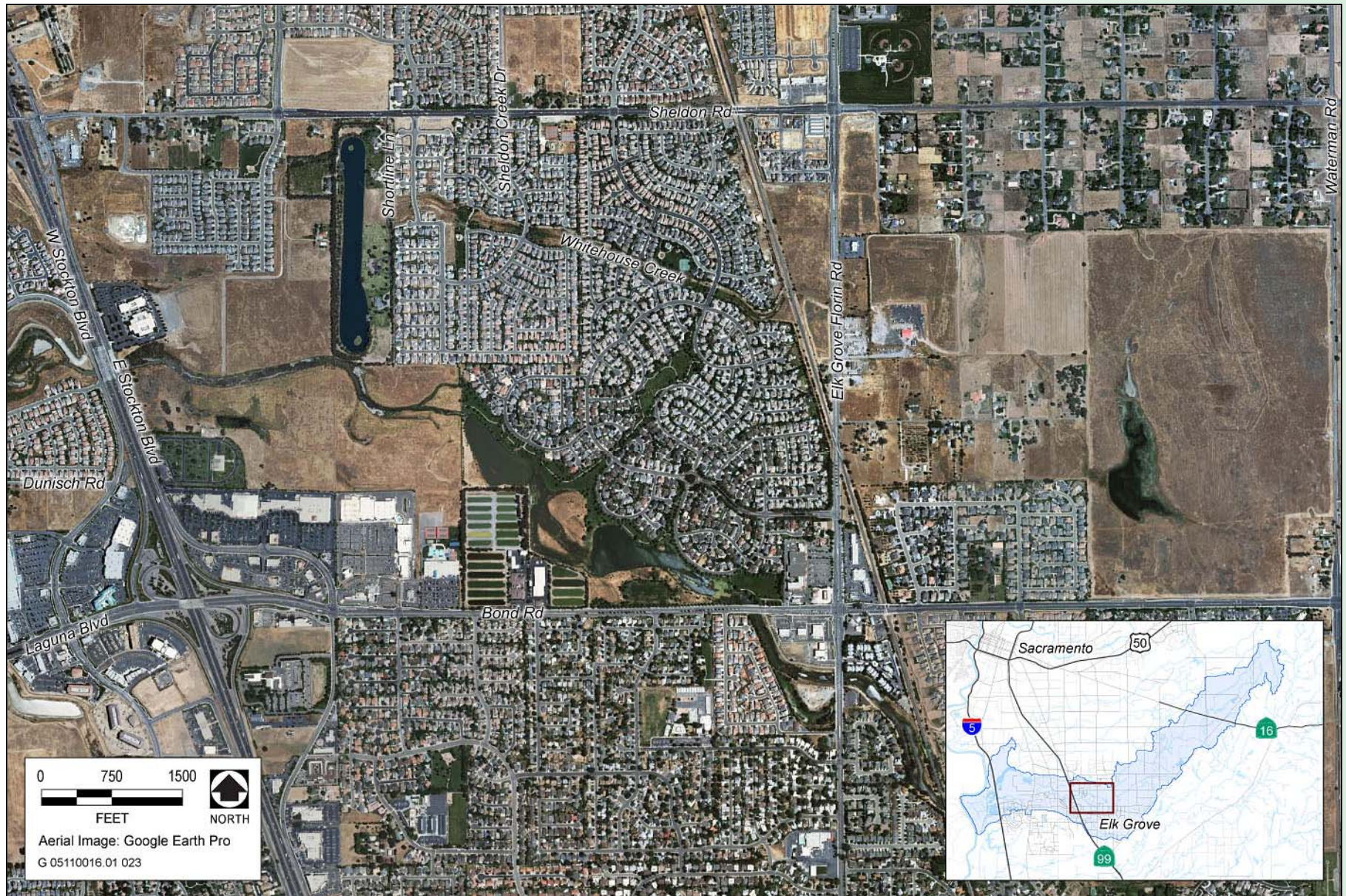
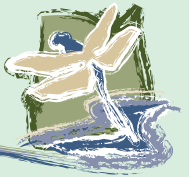
Location	Property straddles Laguna Creek, west of Lower Camden Lake and east of Hwy 99.		
Description	<ul style="list-style-type: none">▶ Property is owned by East Lawn Cemetery which has previously put forth conceptual plans for developing the eastern portion of the property (cemetery plans to expand on western portion). However, development is constrained by many factors: presence of floodplain and wetlands, condition by City of Elk Grove to construct extended Laguna Creek Bypass (as described in Lower Laguna Creek Drainage Master Plan), and limited site access.▶ The Camden Passage recreational trail dead ends at the eastern boundary of the cemetery property and there is a great desire to connect the trail to the creek west of Hwy 99, to the Sheldon Pointe development, and to the Elk Grove Marketplace mall. These proposed linkages are shown in the 2007 Elk Grove Trails Master Plan. Residents and children currently use the Camden Lake weir (Action #23) to cross the creek; this is a safety issue. CSD has been granted a temporary easement by the cemetery to connect the trail to Sheldon Pointe, but efforts to get grant funding for the project have failed.		
Recommendations	<ul style="list-style-type: none">▶ The main focus of this action is to work to secure trail connections. Since the connection through the land will be constructed as a condition of development, the action entails monitoring any development proposals to ensure trails are provided and the creek and its resources are protected. The trail connections will require two pedestrian bridge crossings: one over the Sheldon Pointe tributary to Laguna Creek, and the other over Laguna Creek at or near the lake weir. Grant funding may require permanent easements.		
Potential Partners	East Lawn Cemetery (land owner/manager), City of Elk Grove, Cosumnes CSD, LCWC, Shortline Lake and Camden Neighborhood Assns		
Watershed Objectives	<input type="checkbox"/> Flood Protection	<input type="checkbox"/> Water Quality	<input type="checkbox"/> Education & Stewardship
	<input type="checkbox"/> Ecosystem Processes	<input type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none">▶ Does the action provide connections? Yes▶ Is the action dependent on another? Yes (Action 26)▶ Is the project visible to community? Yes		
Other	<ul style="list-style-type: none">▶ This project will require CEQA review (most likely Mitigated Negative Declaration).		





Recommended Action No. 25 – Strategic Plan for Whitehouse Creek Subwatershed

Location	Approximately 2.5-mile tributary creek starts at the Vintara Park project site in Elk Grove and travels west across Elk Grove-Florin Road, through Camden Park and Sheldon Pointe developments, around Shortline Lake, to its confluence with Laguna Creek just east of Hwy 99.		
Description	<ul style="list-style-type: none"> ▶ Headwaters (Vintara Park) is proposed for residential development, with conversion of a pond to a detention basin, preservation of some wetlands and removal of others. Project environmental review is currently being re-evaluated. Another project (Lawson Plaza) has been denied; current status unknown. 100 year floodplain limits upstream of Elk Grove-Florin Rd being remeasured. Possible future Railstop along the creek along the Union Pacific RR alignment. The lower reaches of the watershed are mostly built out and most of the channel has been dredged, straightened and widened. ▶ Problems include excessive in-channel vegetative growth, sediment accumulation, beaver activity (especially at Garrity Drive), and illegal dumping at bridges, contributing to increased maintenance costs and decreased channel flow capacity/increased flood risk. Urban runoff into the creek from Camden and Sheldon Pointe is not treated before discharge, so education about pollution prevention is needed. No water quality data exist. Dixon Pit Landfill (closed) is located adjacent to the creek downstream of Vintara. 		
Recommendations	<ul style="list-style-type: none"> ▶ Recommend developing a strategic plan for an integrated approach to creek maintenance and management, maintained flood capacity, and protection of water quality and habitat. Encourage participation by creekside property owners in upstream planning and development efforts, so that downstream impacts are considered and mitigated, trail connections are secured, and stewardship is encouraged. 		
Potential Partners	City of Elk Grove, Cosumnes CSD (Parks and Fire), Florin RCD, Sacramento-Yolo Vector Control District, Camden and Shortline Lake and Quail Ranch Neighborhood Associations, LCWC		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide connections? Yes ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ This plan and/or individual projects will require CEQA review; several easements need to be reviewed/mapped as part of plan development. 		

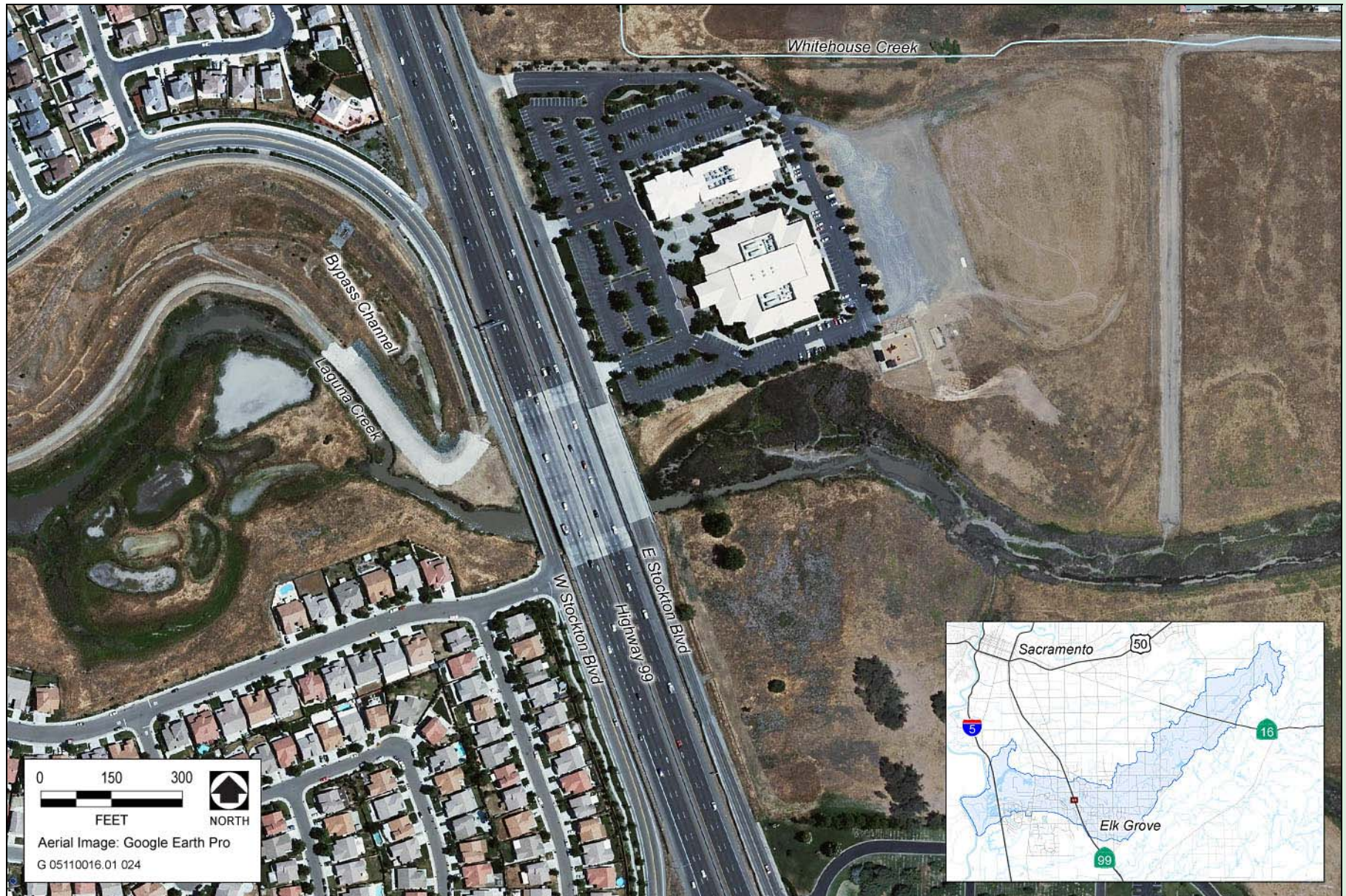
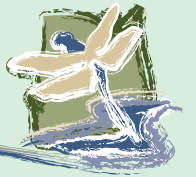




Laguna Creek upstream of the West Stockton Road bridge.

Recommended Action No. 26 – Laguna Bypass Extension Alternatives

Location	West Stockton Boulevard bridge over Laguna Creek west of Highway 99 within the City of Elk Grove and upstream undeveloped parcels along Laguna Creek.		
Description	<ul style="list-style-type: none"> ▶ The existing West Stockton Boulevard bridge crossing over Laguna Creek is scheduled to be lengthened and widened by the City of Elk Grove in the spring of 2009. In accordance with the Lower Laguna Creek Drainage Master Plan prepared by the County of Sacramento, the West Stockton bridge would need to be lengthened in order to accommodate completion of the Laguna Creek Bypass extension. ▶ The purpose of the bypass channel extension would be to decrease the current 100 year floodplain limits of Whitehouse Creek and Laguna Creek upstream of Hwy 99. A bypass extension would result in the removal of wetland habitat, a more constrained Laguna Creek floodplain, and increased runoff flows being delivered downstream. Completion of the Laguna Creek Bypass extension is uncertain as the permit issued by the US Army Corps of Engineers for this work has expired. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends that stakeholders work collaboratively to explore alternatives to the Laguna Creek Bypass extension that would accomplish obtaining equivalent flood control benefits without sacrificing the potential multiple benefits of preserving open space. In addition, this action recommends utilizing policies included in this Plan (Section 6.3 and Appendix H) in future planning efforts including preservation of the creek corridor and implementation of appropriate stormwater management controls. 		
Potential Partners	City of Elk Grove, LCWC, Eastlawn Cemetery, First Baptist Church of Elk Grove		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action increase watershed connectivity? Yes, the project increases hydrologic connectivity. ▶ Is the action dependent on another? No, this can be an independent action. ▶ Is the project visible to community? Yes, the project is highly visible. 		
Other	<ul style="list-style-type: none"> ▶ The project will require CEQA review (most likely Initial Study/Mitigated Negative Declaration). Three permits would likely be needed: DFG 1602, CWA Section 404, Regional Water Board 401 Certification; permitting could take one year or more. 		

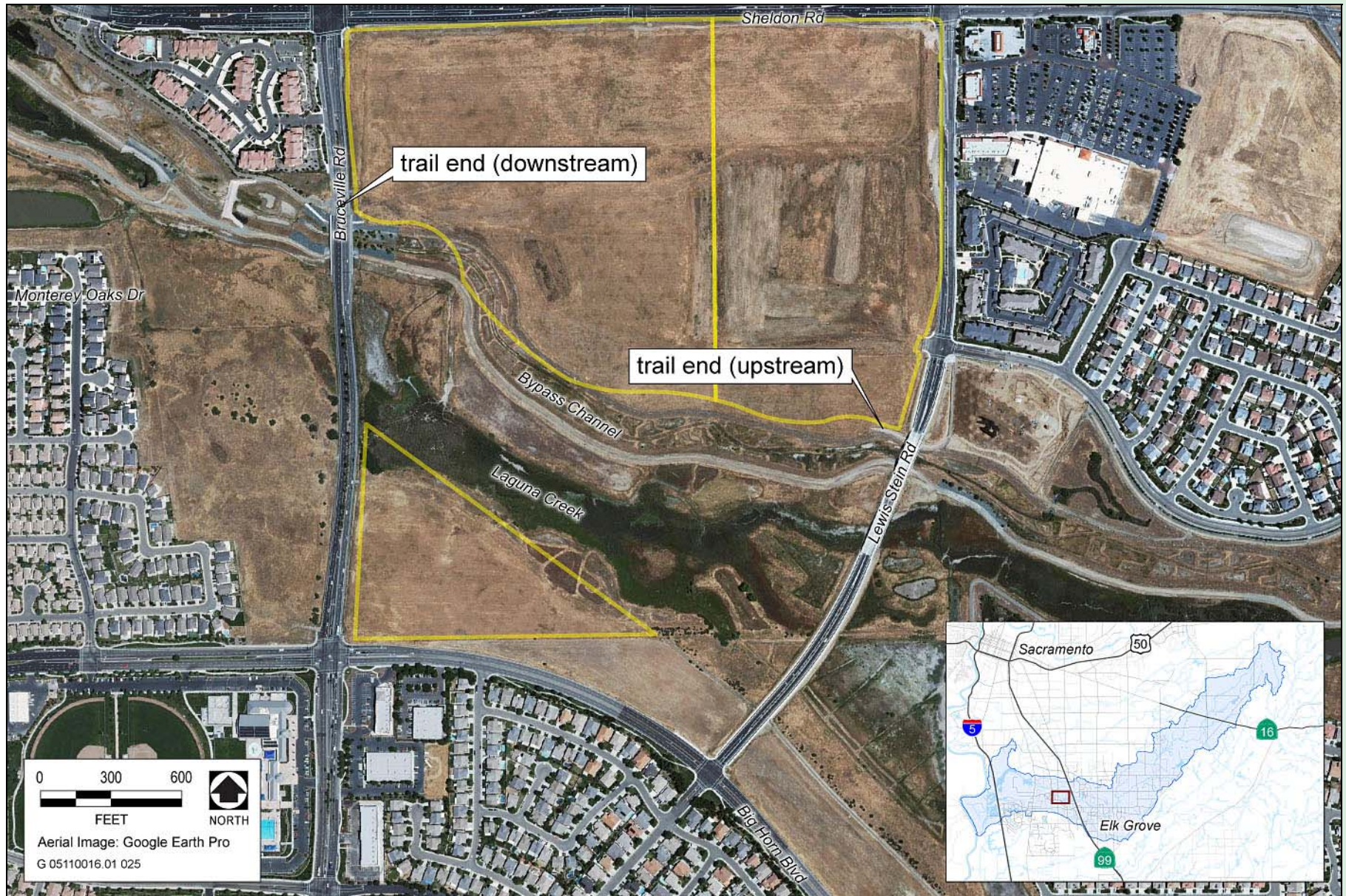
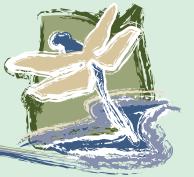




Laguna Creek upstream of Bruceville Road.

Recommended Action No. 27 – Lower Bypass Area Reach Policies

Location	Laguna Creek between Lewis Stein Bridge and Bruceville Road, south of Sheldon Road, north of Big Horn Boulevard in the City of Elk Grove		
Description	<ul style="list-style-type: none"> ▶ Currently undeveloped land borders Laguna Creek in the region of the confluence of Laguna and Elk Grove Creeks. The downstream half of the bypass channel constructed in the 1990s, parallels Laguna Creek through this area, which is one of several identified by the City of Elk Grove for high-density housing. A recent development application (Sheldon Farms/Villages) has been withdrawn by the development group. ▶ Any future development of this area will complete the connection of the Laguna trail between the Lewis Stein Road and Bruceville Road bridges and add significant amounts of impervious surface to an area once named Magoon Slough. The natural stream channel is home to several active beaver dens and is giant garter snake habitat. Incorporation of Low Impact Development design practices into any future development plans will decrease the impacts to Laguna Creek. Future development need to factor in the presence of beaver in the channels when considering vegetation planting choices. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends that policies included in the Laguna Creek Watershed Management Plan (Section 6.3 and Appendix H) be considered in future planning efforts for this site, including preservation of the creek corridor, implementation of appropriate stormwater management controls, integration of LID design solutions, and trail connection through the development. 		
Potential Partners	City of Elk Grove, LCWC, future development / home builder entities		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide watershed connections? Yes ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ There is a conservation easement in the area of this project which may affect projects at this site. 		

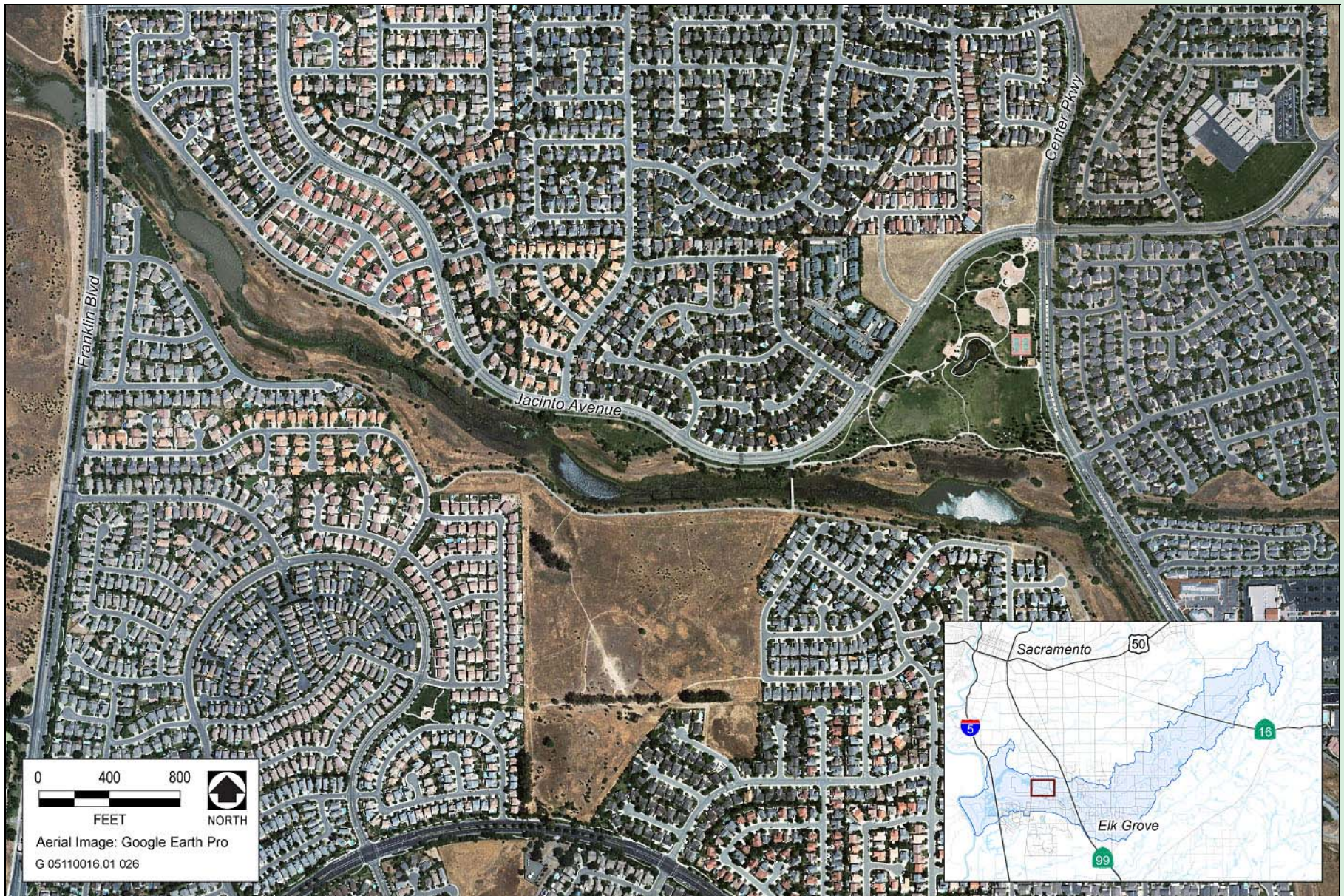
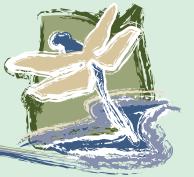




Water quality monitoring mentors.

Recommended Action No. 28 – North Laguna Creek Wildlife Area Education and Stewardship Program

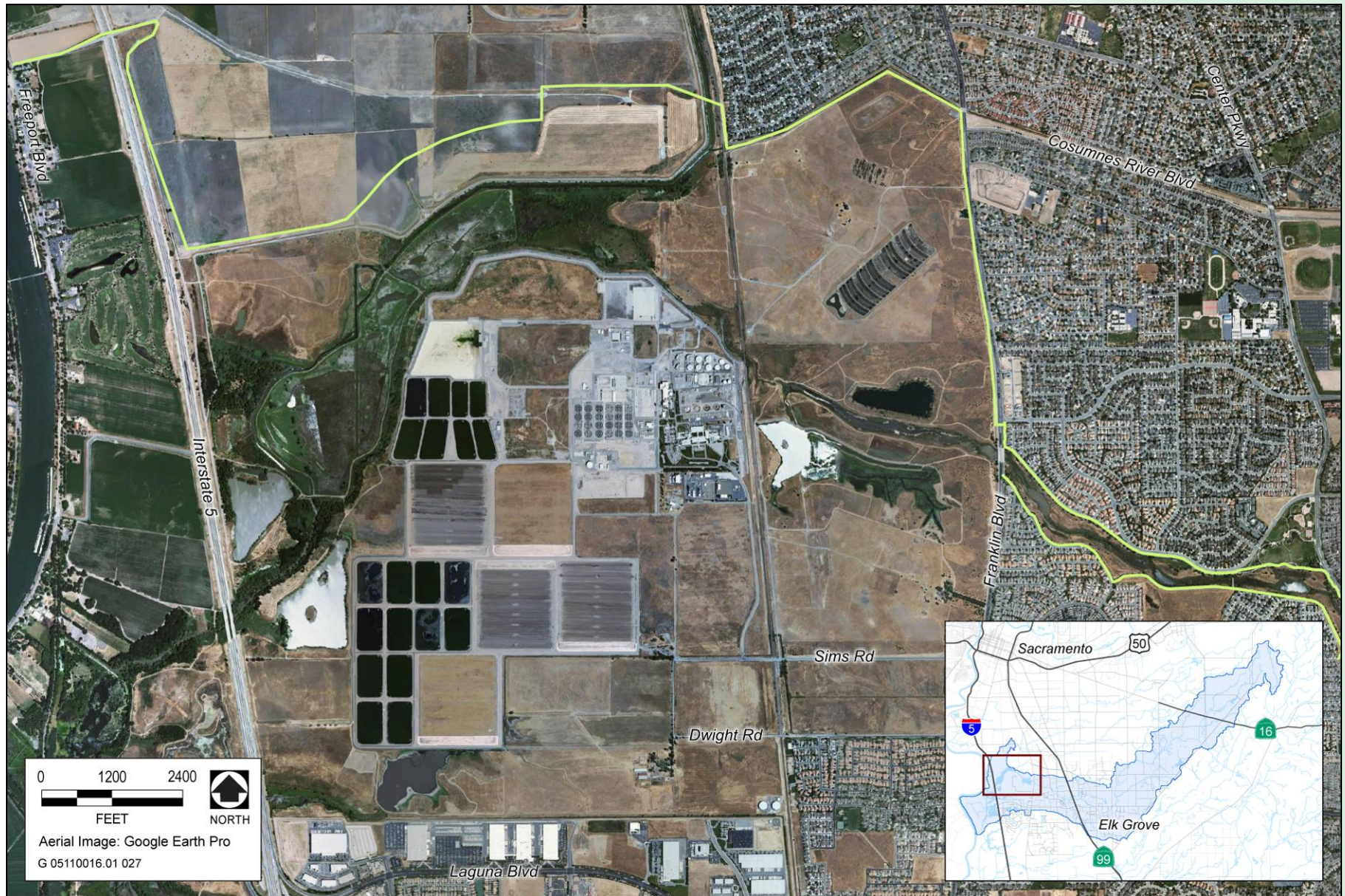
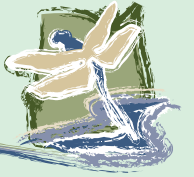
Location	Along Laguna Creek, between Bruceville Road and Franklin Road, including North Laguna Park and the North Laguna Neighborhood.		
Description	<ul style="list-style-type: none"> ▶ During the 1980s, Laguna Creek between Bruceville and Franklin Roads was reshaped to provide greater capacity for flood water conveyance while maintaining a wide buffer between the stream channel and upland land use. This allowed the upland areas, now out of the floodplain, to be developed. Since then, the human population along both sides of this riparian nature area has changed in both size and demographics. ▶ The trail-lined natural buffer area provides recreational and educational opportunities. The local neighborhood association would like to promote stewardship of the area among local residents. The City of Sacramento Parks Department and the North Laguna Neighborhood Association (NLNA) are interested in developing an after-school program featuring creek-related education and stewardship at North Laguna Park. Developing a broad and consistent advertising campaign and a sustainable docent staff will be keys to the success of this program. The program can build on current efforts by LCWC and the Elk Grove Unified School District to develop a watershed-based curriculum for nearby Barbara Comstock Morse Elementary school. This curriculum has been implemented by the school's B-Track K-6 teachers. The NLNA participates in the annual Creek Week event. 		
Recommendations	<ul style="list-style-type: none"> ▶ Increased watershed education and stewardship among neighborhood residents and local schools will likely affect how local residents value this natural resource area, and decrease pollution and graffiti in the area. 		
Potential Partners	City of Sacramento Parks Department (land owner/manager), LCWC, Sacramento Splash, North Laguna Neighborhood Association, Elk Grove Unified School District		
Watershed Objectives	<input type="checkbox"/> Flood Protection <input type="checkbox"/> Ecosystem Processes	<input type="checkbox"/> Water Quality <input type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide watershed connections? Yes ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ There is a conservation easement in the area of this project which may affect this project. ▶ This plan will not require CEQA review. 		





Recommended Action No. 29 – North Laguna Trail Improvement and Extension

Location	Along Laguna Creek, from North Laguna Park downstream into the SRCSD Bufferlands		
Description	<ul style="list-style-type: none">▶ During the 1980s, Laguna Creek between Bruceville and Franklin Roads was reshaped to provide greater capacity for flood water conveyance while maintaining a wide buffer between the stream channel and upland land use. This allowed upland areas to be developed and established the first section of the Laguna Creek trail system.▶ There is an opportunity to extend the downstream end of the Laguna Creek trail from North Laguna to the Sacramento River Levee trail system, via the northeast area of the Bufferlands, the planned Delta Shores development, the Cosumnes River Boulevard extension, to Stonecrest Avenue.▶ In the future, the North Laguna reach of Laguna Creek may be impacted from Franklin Road upstream to near North Laguna Park to accommodate a sewer interceptor pipe. The SRCSD is still evaluating the need, timing, and potential alignment for this interceptor. Mitigation of project impacts could be utilized to improve habitat, interpretive and recreational opportunities in this area.		
Recommendations	<ul style="list-style-type: none">▶ This action recommends that policies included in the Laguna Creek Watershed Management Action Plan (Section 6.3 and Appendix H) be considered in future planning of sewer interceptor alignment, stream restoration and trail connections in this area.		
Potential Partners	City of Sacramento, SRCSD, North Laguna Neighborhood Association		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection	<input checked="" type="checkbox"/> Water Quality	<input checked="" type="checkbox"/> Education & Stewardship
	<input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none">▶ Does the action provide watershed connections? Yes▶ Is the action dependent on another? No▶ Is the project visible to community? Yes		
Other	<ul style="list-style-type: none">▶ There is a conservation easement in the area of this project which may affect this project.▶ Elements of this plan will require CEQA review. Three permits would likely be needed: DFG 1602, CWA Section 404, Regional Water Board 401 Certification		

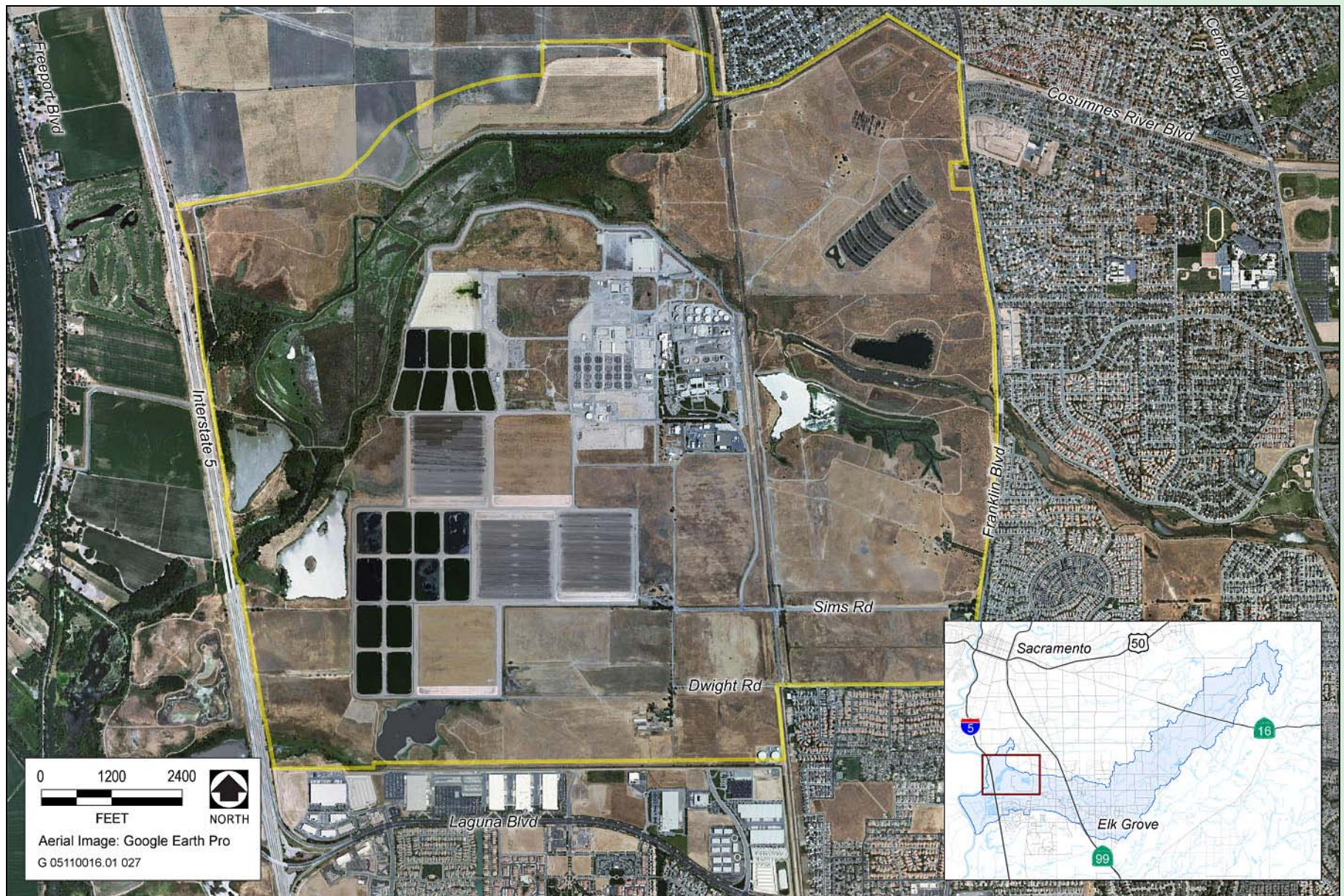
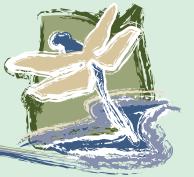




Wildlife survey field trip at the Bufferlands.

Recommended Action No. 30 – SRCSD Bufferlands Education Program

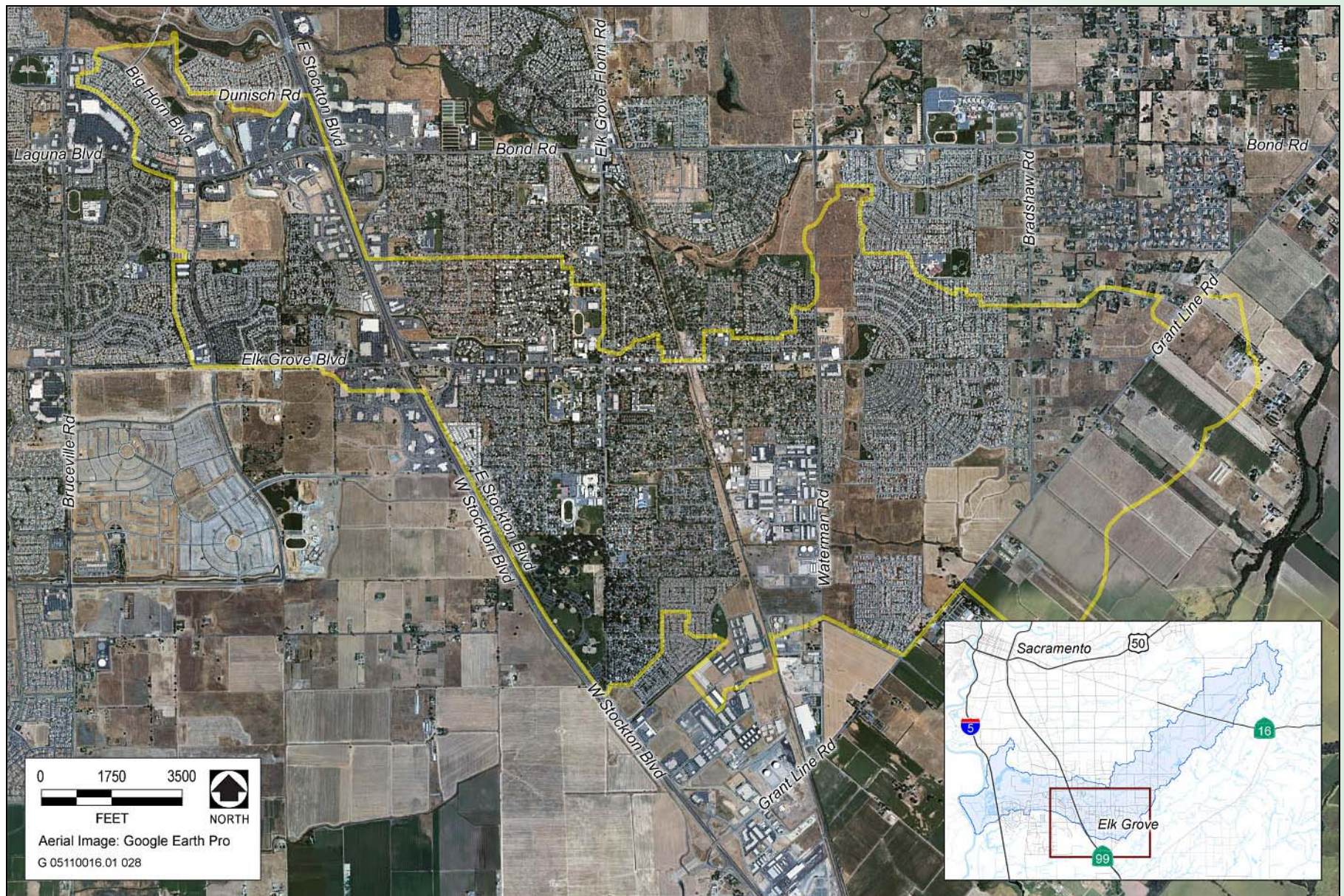
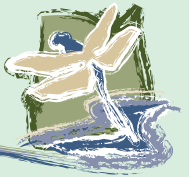
Location	SRCSD Bufferlands adjacent to Laguna Creek.		
Description	<ul style="list-style-type: none"> ▶ Sacramento Splash, the SRCSD Bufferlands, and LCWC are exploring an education program partnership for high school fieldwork on the Bufferlands. Pilot field trips were conducted with several EGUSD high schools classes at the Bufferlands in Spring 2008. ▶ There are several historic structures on the SRCSD Bufferlands that could potentially be restructured and/or renovated to provide a base for this educational program as well as congregating opportunities for other education and outreach programs that promote responsible stewardship in the watershed and neighboring waterways. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends that an education program partnership strategy be developed and grant funding sources be identified. 		
Potential Partners	SRCSD, LCWC, Sacramento Splash, LCWC		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide watershed connections? Yes ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ This project is not anticipated to require CEQA review or regulatory permitting. 		





Recommended Action No. 31 – Strategic Plan for Elk Grove Creek Subwatershed

Location	Elk Grove Creek is a 6.5-mile tributary creek that runs through the City of Elk Grove, beginning near Grant Line Road and traveling west to its confluence with Laguna Creek, near the Lewis Stein Bridge.		
Description	<ul style="list-style-type: none">▶ Headwaters (east of Waterman Road) is undergoing development (natural creek channel, some modifications proposed and off-line detention basins). The reach from Waterman Road west to Hwy 99 was realigned, straightened, and channelized behind homes and businesses since the 1930s as Elk Grove developed and does not have a public trail. The creek channel west of Hwy 99 to Laguna Creek confluence was straightened/modified in “naturalistic” fashion.▶ Problems include excessive in-channel vegetative growth, sediment accumulation, and beaver dams, all contributing to increased maintenance costs and decreased channel flow capacity/increased flood risk. Low dissolved oxygen has been a problem in the past near Laguna Boulevard.		
Recommendations	<ul style="list-style-type: none">▶ A plan should be developed and implemented for a system-wide approach to integrate strategies to address flood control, floodway maintenance, environmental (water quality, habitat), and recreation/access needs on Elk Grove Creek. The plan would also propose a strategy for working with the environmental regulators on a coordinated permitting approach. Potential projects for the plan include channel retrofit (adding low-flow channels/benches), adding off-line flood storage/detention, adding recreational trails and interpretive signs, tree planting, and stewardship. Girl Scout Troop 1955 has adopted a 1-mile creek reach upstream of Elk Grove Boulevard and is removing trash and reporting problems such as invasive weed growth.		
Potential Partners	City of Elk Grove (lead), Cosumnes CSD (Parks and Fire), Florin RCD, Sacramento-Yolo Vector Control District, Elk Grove Unified School District		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection	<input checked="" type="checkbox"/> Water Quality	<input checked="" type="checkbox"/> Education & Stewardship
	<input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none">▶ Does the action provide connections? Yes▶ Is the action dependent on another? No▶ Is the project visible to community? Yes		
Other	<ul style="list-style-type: none">▶ This plan and/or individual projects will require CEQA review.▶ There are several easements that need to be reviewed/mapped as part of plan development.		

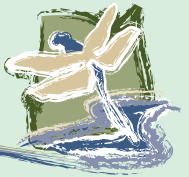




Yellow primrose and water hyacinth choke Laguna Creek below the North Laguna Wildlife Area bridge.

Recommended Action No. 32 – Invasive Weed Removal Strategy

Location	Watershed-wide invasive weed removal strategy		
Description	<ul style="list-style-type: none"> ▶ Locations and densities of invasive weed species have been mapped for several reaches of Laguna Creek (North Laguna, Bypass, Camden, Bell South, Fallbrook, and Vineyard reaches), and for Elk Grove Creek between Waterman Road to its confluence with Laguna Creek. ▶ If left unmanaged, invasive weed species can out compete other plant species for surrounding space and resources and decrease local diversity to levels that impair habitat quality. Some species can cause significant decreases in stream channel conveyance capacity. Removal strategies for each species need to be identified. The timing and methods of removal will help determine the work force needed to establish a successful removal strategy. Removal of some weed species could provide volunteer stewardship opportunities whereas removal of other weed species may require the hiring of professional services. Suppression and/or eradication of invasive weeds requires long-term stewardship of affected areas. Successful management of invasive weed species prevents decreased riparian habitat quality and stream channel function. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends extending the weed mapping effort to the upper watershed; involving citizen volunteers to assist with the removal and monitoring of invasive weeds; educating residents to the benefits of landscaping with native plants; discouraging the use of non-native, invasive plants in their yards; and pursuing grants to fund professional removal of weeds when necessary. 		
Potential Partners	City of Sacramento Parks Department, City of Elk Grove, Cosumnes Community Services District, Southgate Recreation and Parks District, LCWC, the California Native Plant Society (Sacramento Weed Warriors Program).		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide community connections? Yes ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ Projects are not anticipated to require CEQA review or regulatory permitting. ▶ There are conservation easements along reaches of this project which may affect this project. 		



Recommended Action No. 33 – Tree Planting Program

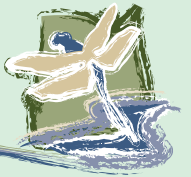
Location	Watershed-wide including riparian, upland, and urban areas		
Description	<ul style="list-style-type: none"> Urban and open space tree planting projects provide many benefits including: heat island cooling, riparian and stream shade (water cooling and nuisance species management), wildlife habitat, stream bank stability, detritus and woody debris for aquatic food web, and runoff reduction. The Sacramento Tree Foundation offers several programs which can be implemented in the Laguna Creek Watershed including: the Greenprint program for doubling the region's tree canopy over the next 40 years; Shade Tree program for schools, parks, and other places; Nature program for restoring native tree woodlands; and the Seed-to-Seedling program for growing acorns into oaks in classrooms throughout the watershed. The Tree Foundation, through its programs, also offers technical support for species selection, planting and maintenance (planting and irrigation), and planting supplies. 		
Recommendations	<ul style="list-style-type: none"> Opportunities exist to work with the Sacramento Tree Foundation on a tree planting program to address the entire Laguna Creek Watershed. This action recommends working in coordination with the Tree Foundation to develop a comprehensive plan to identify and implement urban and open space tree planting and maintenance projects throughout the watershed. 		
Potential Partners	Sacramento Tree Foundation, LCWC, and Sacramento County, City of Elk Grove, Southgate Recreation and Park District, and City of Rancho Cordova through the Tree Foundation's Greenprint Program		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> Does the action increase watershed connectivity? Yes, projects would increase habitat connectivity. Is the action dependent on another? No, these can be independent actions. Is the project visible to community? Yes, the projects have the potential to be highly visible. 		
Other	<ul style="list-style-type: none"> Projects are not anticipated to require CEQA review or regulatory permitting. 		





Recommended Action No. 34 – Watershed Open Space / Conservation Easement Catalogue

Location	Watershed-wide map-based inventory and decision support system.		
Description	<p>► A GIS-based mapping database is being developed as part of the Laguna Creek Watershed Assessment and Management Plan. As part of this effort, all open space areas and conservation easements are being catalogued to the extent information is currently available. Because open space areas and conservation easements throughout the watershed are changing as new land becomes dedicated, the database will need to be maintained and updated on an ongoing basis to keep it current. Additionally, as development continues to occur throughout the watershed, mitigation commitments are being made to address impacts on sensitive resources. A tool to track mitigation requirements/commitments throughout the watershed should be developed to identify areas where commitments have already been made and to allow for more strategic mitigation planning throughout the watershed.</p>		
Recommendations	<p>► Develop and maintain a watershed-wide open space, conservation easement, and mitigation land commitment catalogue for the Laguna Creek Watershed. This action will serve as a tool to identify and document conservation lands, track mitigation requirements and commitments, and identify lands/projects that could be opportunity sites for future conservation easements, mitigation areas, and open space targets. Important plans and/or projects to consider in the development of this planning tool are the South Sacramento County Habitat Conservation Plan, Sacramento Valley Conservancy's Twenty First Century Open Space Vision, and other regional/general plans in the watershed.</p>		
Potential Partners	Private Landowners, LCWC, City of Elk Grove, Sacramento County, City of Rancho Cordova, Sacramento Valley Conservancy		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<p>► Does the action increase watershed connectivity? Yes, indirectly</p> <p>► Is the action dependent on another? No</p> <p>► Is the project visible to community? Yes, indirectly</p>		
Other	<p>► No environmental review or permitting is anticipated for this planning / tool development action.</p>		



Recommended Action No. 35 – Laguna Creek Watershed Stewards Program

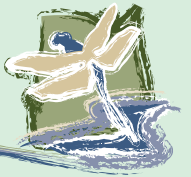


Location	Watershed-wide stewardship program focused especially in more urbanized areas.		
Description	<ul style="list-style-type: none"> LCWC has developed a Stream Stewards program that identifies, trains, and helps maintain volunteer stewardship groups committed to adopting lengths of their local stream. In order to increase the range of the program from a Stream Stewards to a Watershed Stewards Program, LCWC has expanded the focus of stewardship project development from those occurring in or along watershed streams to any project that increases community awareness of their connection to local surface and groundwater resources and associated habitat. Adopting a stream reach requires a willing group of volunteers to maintain a presence on their local stream by performing a regularly occurring stewardship activity. Stewardship activities have varied depending on a group's interests and abilities, and overall Stewardship Program success depends on recruitment and training (if necessary) of volunteer groups, and project coordination. Past and current Stewards groups that have adopted stream reaches include Girl Scout Troops and school classes. Projects have included photo-documenting the growth of an invasive aquatic plant, removing trash occurring in and along their stream reach, removing invasive weeds, and using the stream as an outdoor classroom for at least one lesson per year. 		
Recommendations	<ul style="list-style-type: none"> This action recommends developing ways to increase the outreach and recruitment of this program, continuing to identify and develop projects that make the connection between surface and groundwater conditions, habitat, and human behavior, and identify funding sources to sustain program coordination. 		
Potential Partners	City of Elk Grove, City of Sacramento Parks Department, Southgate Recreation and Park District, Cosumnes Community Services District, Elk Grove Unified School District, Neighborhood Associations, Boy Scout and Girl Scout Troops, watershed residents		
Watershed Objectives	<input type="checkbox"/> Flood Protection <input type="checkbox"/> Ecosystem Processes	<input type="checkbox"/> Water Quality <input type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> Does the action provide community connections? Yes Is the action dependent on another? No Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> This project is not anticipated to require CEQA review or regulatory permitting. 		



Recommended Action No. 36 – Laguna Creek Walk Program

Location	Creek walks along Laguna Creek at Jack Hill Park with potential for other locations		
Description	<ul style="list-style-type: none"> ▶ The Cosumnes Community Services District's (CCSD's) Environmental Education program consisted of elementary and preschool tour programs along Laguna Creek at Jack Hill Park but lacked adequate staff support to maintain the program. LCWC has conducted regular creek walks at Jack Hill Park as part of the Stream Stewards Program, and used the Park location for several K-12 environmental educational events. ▶ LCWC would be responsible for training and maintaining docents, coordinating and conducting the stream walks. This arrangement would create a strong partnership between CCSD and LCWC. CCSD has proposed to discontinue their stream walk program and collaborate with LCWC by advertising LCWC's programs in the CCSD Activity Guide and maintaining partnership with LCWC. LCWC needs to develop a plan for recruiting, training, and coordinating docents. Southgate Recreation and Park District has expressed interest in developing a similar partnership. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends that LCWC integrate CCSD's creek walk program into LCWC's Watershed Stewards Program, partner with CCSD to advertise the program to CCSD's customer base, and expand the program by partnering with Southgate Recreation and Park District. 		
Potential Partners	Cosumnes Community Services District, LCWC, Southgate Recreation and Park District		
Watershed Objectives	<input type="checkbox"/> Flood Protection <input type="checkbox"/> Ecosystem Processes	<input type="checkbox"/> Water Quality <input type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide community connections? Yes ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ This project is not anticipated to require CEQA review or regulatory permitting. 		



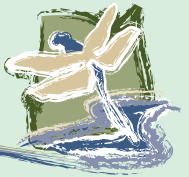
Recommended Action No. 37 – Connected Creek Trails and Interpretive Signage

Location	Watershed-wide trail system along creeks connecting neighborhoods, schools, parks, and business/retail centers with creeks.		
Description	<ul style="list-style-type: none">▶ Pedestrian and multi-use trails already serve portions of the watershed; some of the trails are in good shape and others would benefit from enhancement (e.g. vegetation management, tree planting, replaced/new signage, adding pet waste bag dispensers/signs and garbage cans, etc.). There are many areas where trails are not connected. A continuous connected multi-use trail system will promote watershed stewardship and reduce the community's dependence on the automobile, thereby helping to reduce pollution. Trailside interpretive signage added in some areas in 2006-08 provides trail users opportunities to learn about the natural history of the watershed, and how land-use practices affect the local ecology.▶ In the lower watershed, the City of Elk Grove's Trails Master Plan (January 2007) includes various goals and implementation strategies which align well with the goals of the Laguna Creek Watershed Management Action Plan. In the portion of the watershed above Calvine Road, Southgate Recreation and Park District is responsible for many streamside trails. In the future, Cordova Recreation and Park District (extreme upper watershed) may have jurisdiction over some trails connecting to Laguna Creek and its tributaries.		
Recommendations	<ul style="list-style-type: none">▶ LCWC will work with the responsible agencies to identify disconnected trail segments, discuss priorities, and pursue funding for constructing linkages. For example, LCWC will work to promote the trail extension in the area east of Sheldon High School to link Laguna Creek through the Ogden Family property to the Churchill Downs Community Park and the Donna Dean Water Conservation Garden. LCWC will also identify community stewards (e.g., local Girl Scouts troops) to adopt trail reaches, and assist with interpretive signage projects to ensure accurate and consistent themes and educational messages of watershed natural history, local ecology, and watershed stewardship.		
Potential Partners	City of Elk Grove Parks, Cosumnes CSD, Southgate Recreation and Park District, Sacramento Regional Parks, Cordova Recreation and Park District, LCWC		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection	<input checked="" type="checkbox"/> Water Quality	<input checked="" type="checkbox"/> Education & Stewardship
	<input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none">▶ Does the action provide connections? Yes▶ Is the action dependent on another? Depends on location▶ Is the project visible to community? Yes		
Other	<ul style="list-style-type: none">▶ Permitting needs to be determined depending on project.		



Recommended Action No. 38 – Beaver Management Plan

Location	Watershed-wide planning project for Laguna Creek and tributaries.		
Description	<ul style="list-style-type: none"> ▶ A watershed-wide plan for managing stream channels in the Laguna Creek Watershed must account for beaver activity and behavior. A Beaver Management Plan is being developed for the upper watershed in advance of future development, and this planning effort should be extended through the lower watershed to be most effective. ▶ Over the last several decades, Laguna Creek and its tributary streams have been modified from once intermittent streams to perennial channels capable of supporting beaver populations. Perennial water sources supporting vegetation preferred by beavers for both diet and dam building along with a decline in occurrence of natural predators have led to an increase in beaver populations throughout the watershed, and the management problems associated with their behavior. The Upper Laguna Creek Collaborative is including a Beaver Management Plan as part of the Upper Laguna Creek Corridor Master Plan. Laguna Creek, from its headwaters downstream to the Bond/Waterman Road intersection, is being surveyed and evaluated for existing and potential beaver habitat. This information will be available to inform management practices, vegetation restoration choices, and other planning decisions whose outcomes may be affected by beaver activity. The migratory behavior of beavers requires that the Beaver Management Plan cover the entire system of channels in the watershed. 		
Recommendations	<ul style="list-style-type: none"> ▶ This action recommends extending the Beaver Management Plan currently being developed by ULCC for the upper watershed to the entire length of Laguna Creek and major tributaries. 		
Potential Partners	City of Elk Grove, Sacramento County, City of Sacramento, City of Rancho Cordova, Southgate Recreation and Park District, Cosumnes Community Services District, ULCC		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action provide community connections? No ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ This project is not anticipated to require CEQA review or regulatory permitting. 		



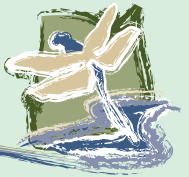
Recommended Action No. 39 – Watershed Water Quality Monitoring Plan

Location	Watershed-wide water quality monitoring plan.		
Description	<ul style="list-style-type: none">▶ A draft watershed-wide water quality monitoring plan has been developed for this Laguna Creek Watershed Management Action Plan. The monitoring plan describes important water quality parameters, methods for sampling and analysis, data interpretation, and reporting and use. The plan will also identify potential groups that could participate in data collection and provides recommendations for data management, adaptive management, and coordination with other efforts in the watershed.		
Recommendations	<ul style="list-style-type: none">▶ Finalize and implement the watershed-wide water quality monitoring plan for the Laguna Creek Watershed. This action will serve to document ambient conditions, identify trends, evaluate project effectiveness, and inform adaptive management of the watershed. The draft watershed-wide water quality monitoring plan is included in Appendix G.		
Potential Partners	LCWC, City of Elk Grove, Sacramento County, City of Rancho Cordova, Cosumnes CSD, Southgate Recreation and Park District		
Watershed Objectives	<input type="checkbox"/> Flood Protection	<input checked="" type="checkbox"/> Water Quality	<input checked="" type="checkbox"/> Education & Stewardship
	<input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none">▶ Does the action increase watershed connectivity? No▶ Is the action dependent on another? No▶ Is the project visible to community? Yes, indirectly		
Other	<ul style="list-style-type: none">▶ No environmental review or permitting is anticipated for this monitoring action.		



Recommended Action No. 40 – River Friendly Demonstration Gardens

Location	Watershed-wide implementation effort.		
Description	<p>► The extensive impervious areas that now cover the watershed have increased stormwater flows, causing channel instability and the degradation of the aquatic habitat and water quality. Summer nuisance flows bring pollutants into the creeks and support vegetative overgrowth which impairs aquatic health and creates flood hazards for local residents. The 2007 watershed assessment identified excessive nutrients, low dissolved oxygen, and the absence of sensitive benthic macroinvertebrate species as some of the keys indicators of the current marginal conditions in Laguna Creek. Water use efficiency measures, such as low impact development practices, can increase stormwater infiltration, improve recharge of the shared aquifer, and reduce the harmful effects of excessive winter and summer runoff into Laguna Creek.</p>		
Recommendations	<p>► Work with watershed stakeholder agencies and private landowners to plant rain gardens at locations throughout the watershed to serve multiple purposes by combining water efficient landscapes, LID practices, stormwater treatment, and shade trees where possible. Encourage private landowners to incorporate rain gardens into their lawn landscapes. Establish garden sites at public locations with at least one large enough to accommodate tour groups and hold River Friendly Landscaping workshops. Demonstration sites can demonstrate water-efficient native plantings, turf alternatives, and LID runoff source-control practices such as rain gardens, swales, and pervious pavement.</p>		
Potential Partners	LCWC, City of Elk Grove, Sacramento County, City of Rancho Cordova, Cosumnes CSD, Southgate Recreation and Park District, Elk Grove Unified School District, local water purveyors		
Watershed Objectives	<input type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Education & Stewardship <input checked="" type="checkbox"/> Recreation
Watershed Context	<p>► Does the action increase watershed connectivity? No</p> <p>► Is the action dependent on another? No</p> <p>► Is the project visible to community? Yes</p>		
Other	<p>► No environmental review or permitting is anticipated for this monitoring action.</p>		



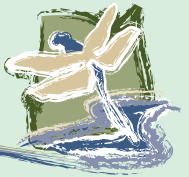
Recommended Action No. 41 – Water Use Efficiency Outreach and Education

Location	Watershed-wide outreach and education effort.		
Description	<ul style="list-style-type: none">▶ Current watershed outreach materials and watershed education curriculum lack messages that educate residents and students about the links between efficient uses of water and groundwater/surface water conditions, and how these links affect habitat. Public service announcements and printed materials targeting clean water messages to watershed residents have been developed and distributed by local stormwater agencies in the past. Watershed education curriculum focused on clean water and habitat lessons for students is currently being used by Elk Grove Unified School District (EGUSD) K-12 teachers throughout the watershed. New lessons involving water use efficiency information could developed by modifying existing curriculum already in place within watershed schools and building on the successful partnership history between the Sacramento Splash program and the EGUSD.		
Recommendations	<ul style="list-style-type: none">▶ Work with municipal agencies to develop and deploy water use efficiency messages and materials to watershed residents. Modify existing Splash elementary and high school curriculum to include information linking surface and groundwater, the effects of this connection on habitat, and details on efficient water methods such as building and maintaining rain gardens for schools and homes.		
Potential Partners	LCWC, City of Elk Grove, Sacramento County, Elk Grove Unified School District, local water purveyors		
Watershed Objectives	<input type="checkbox"/> Flood Protection	<input checked="" type="checkbox"/> Water Quality	<input checked="" type="checkbox"/> Education & Stewardship
	<input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Habitat	<input type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none">▶ Does the action increase watershed connectivity? Yes▶ Is the action dependent on another? No▶ Is the project visible to community? Yes		
Other	<ul style="list-style-type: none">▶ No environmental review or permitting is anticipated for this monitoring action.		



Recommended Action No. 42 – Review/Amend Policies & Codes Related to Watershed Protection

Location	Watershed-wide. This action will particularly affect the Upper Laguna Creek Watershed, upstream of Calvine Road, and undeveloped land in the north and east Elk Grove areas, as well as new construction anywhere in the watershed by the schools, parks and sewer districts, as well as local water purveyors.		
Description	<ul style="list-style-type: none"> ▶ Stakeholder agencies with land use authority, including development planning and approval responsibilities, will be processing, conditioning and approving proposals for new development and redevelopment in the Laguna Creek Watershed in the future. Special districts such as the school, park and sanitation districts will be developing and constructing new facilities that could impact the creek and its resources. ▶ Where possible, new or enhanced policies, codes, design guidelines, standards and procedures/processes related to land use planning, development, facility management, and maintenance will help to better achieve watershed protection objectives. 		
Recommendations	<ul style="list-style-type: none"> ▶ The local agencies and districts with land use and development authority in the watershed are encouraged to analyze their existing planning processes, policies, codes, standards and other documents, and identify/implement amendments using the recommendations in Appendix H. Appendix H includes recommended policies, codes, etc. and describes a process used by the Local Government Commission and Ventura County to evaluate the County's policies and codes in 2007-08. ▶ Proposition 84 and other grant opportunities could be pursued to fund this work. ▶ Sacramento County, the City of Rancho Cordova and SRCSD could conduct this work in conjunction with consideration of adoption (or similar action) or the Upper Laguna Creek Corridor Master Plan (see Action 43). 		
Potential Partners	Sacramento County, City of Rancho Cordova, City of Elk Grove, SRCSD, Elk Grove Unified School District, Southgate Recreation and Park District, Cosumnes CSD, local water purveyors		
Watershed Objectives	<input type="checkbox"/> Flood Protection <input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Water Quality <input checked="" type="checkbox"/> Habitat	<input type="checkbox"/> Education & Stewardship <input type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none"> ▶ Does the action increase watershed connectivity? Yes ▶ Is the action dependent on another? No ▶ Is the project visible to community? Yes 		
Other	<ul style="list-style-type: none"> ▶ No environmental review or permitting is anticipated for this monitoring action. 		



Recommended Action No. 43 – Integration of Upper Laguna Creek Collaborative (ULCC) Process and Products into Overall Watershed Management Efforts

Location	Watershed-wide planning effort.		
Description	<ul style="list-style-type: none">▶ The culmination of the multi-year, grant-funded Upper Laguna Creek Collaborative (ULCC) planning process (described in Chapter 3) will be the completion of a Corridor Master Plan in 2009 to guide creation of a multi-functional corridor along Upper Laguna Creek as development proceeds. The Master Plan will propose ways to preserve the stream and its surrounding habitat, manage urban runoff from new development, provide an easement for future sanitary sewer infrastructure, and complete a regional wildlife corridor and bikeway. The Master Plan needs to be integrated into the overall watershed planning and management process (coordinated by LCWC) to fulfill the vision of effectively connecting the Upper Laguna Creek corridor to the existing corridor along Lower Laguna Creek.		
Recommendations	<ul style="list-style-type: none">▶ This action recommends that the LCWC integrate the processes, plans and tools developed by ULCC into overall watershed management efforts. LCWC should oversee implementation of the Corridor Master Plan. This role might include tasks such as:<ul style="list-style-type: none">(1) encouraging and maintaining stakeholder involvement in adopting (if appropriate) and implementing the Master Plan;(2) managing a website to maintain broad access to the Master Plan's web-based planning tools;(3) conducting workshops/presentations to gain broader community awareness and acceptance of the Master Plan;(4) pursuing and securing grants and other funding to develop additional critical products recommended in the Master Plan, including: (a) Restoration Plan to guide future stream and habitat restoration/enhancement along Upper Laguna Creek; (b) Finance Plan to identify funding mechanisms to acquire, monitor and manage the corridor; (c) Implementation Plan for the final Corridor Master Plan, including identification of pilot project(s) to test and refine the Master Plan.		
Potential Partners	ULCC stakeholders (see Chapter 3 for description), private landowners, LCWC		
Watershed Objectives	<input checked="" type="checkbox"/> Flood Protection	<input checked="" type="checkbox"/> Water Quality	<input checked="" type="checkbox"/> Education & Stewardship
	<input checked="" type="checkbox"/> Ecosystem Processes	<input checked="" type="checkbox"/> Habitat	<input checked="" type="checkbox"/> Recreation
Watershed Context	<ul style="list-style-type: none">▶ Does the action increase watershed connectivity? Yes▶ Is the action dependent on another? No▶ Is the project visible to community? Yes		
Other	<ul style="list-style-type: none">▶ No environmental review or permitting is anticipated for this monitoring action.		