City of Roseville Open Space Preserve Overarching Management Plan

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CITY OF ROSEVILLE CALIFORNIA

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1.0 OPEN SPACE PRESERVE OVERARCHING MANAGEMENT PLAN BACKGROUND

Since the 1990's, the City of Roseville (City) has managed its Open Space Preserves according to individual operations and management plans. While this approach was reasonable when only a few Open Space Preserves existed, the number of preserves has steadily increased overtime, generating the need for an overarching plan. As natural resource Agency requirements and management requirements have changed, the individual management plan requirements have changed, leading to different requirements for different preserves.

On 18 August 2000, the City entered into a memorandum of understanding (MOU) with the U.S. Fish and Wildlife Service (Service) as a result of the issuance of a biological opinion for the Pleasant Grove Wastewater Treatment Plant (PGWTP) (Appendix 1). The Service MOU required an interim conservation strategy to minimize the future adverse effects to federally listed species due to future development served by the Phase 1 operations of the PGWTP and located on land under the jurisdiction of the City (Appendix 2). Additionally, the Service MOU required that the City work with the Service to develop a long-term habitat conservation plan (HCP) or an equivalent document to minimize the future adverse effects to federally listed species in areas served by the Phase 2 operations of the PGWTP. An interim strategy was developed, and it was ultimately decided that an HCP was not needed. However, the Service requested that the City standardize the monitoring and management of its system of vernal pool and wetland preserves. The City agreed to an overarching management plan concept that became the City of Roseville Open Space Preserve Overarching Management Plan (OSPOMP, Plan).

1.1 Purposes of the Plan

The purposes of the OSPOMP are:

1. To provide a City-wide approach to open space management, maintenance, and monitoring.
2. To provide specific goals for open space management, maintenance, and monitoring.
3. To consolidate existing Open Space Preserve monitoring and reporting requirements to allow for more comprehensive data gathering and preparation of a single annual monitoring report.
4. To consolidate existing Operation and Management Plans and update the approved list of Open Space Preserve area allowed uses.
5. To eliminate the need for additional management plans when new open space is dedicated through the development process or habitat conservation efforts.
6. To gain approval of necessary open space management and maintenance tasks that might adversely affect federally listed species (threatened or endangered) protected by the Endangered Species Act (ESA).
7. To reduce Agency and City staff workload by providing an agreed-upon method for corrective actions.
8. To provide a platform for grant funding.

The OSPOMP is intended to apply to all City designated open space currently owned and managed by the City or that will be managed by the City following dedication as outlined in an approved Development Agreement. However, with the approval of the Service and the U.S.

Army Corps of Engineers (Corps), the City may also elect to manage Open Space Preserves located outside the City limits owned or controlled by the City according to the OSPOMP.

1.2 Existing Open Space Documents and Related Guidelines

1.2.1 City General Plan Policy

It is important that the OSPOMP be consistent with relevant portions of existing City Policy. The Goals of the OSPOMP were developed to be consistent with the stated goals of the General Plan 2035 related to open space and recreation (City of Roseville 2020). The most relevant sections of the General Plan are Open Space and Conservation, Parks and Recreation, Public Facilities, Safety, and Circulation elements. These sections are included for reference in Appendix 3 of this Plan. These sections focus on the preservation and enhancement of a network of open space that not only provides habitat linkages, but also provides connections between neighborhoods. The General Plan recognizes that there is a balance between habitat protection and public use. Therefore, sensitive native communities such as those that support endangered species have limited or supervised access whereas other areas have regular access points such as bike trails. Both must be considered for successful open space management. The General Plan lays out several mechanisms for achieving its goals. These include land use designations, zoning ordinances, specific plans, the development review process, resource inventories, preservation mechanisms, tree preservation regulations, the flood damage prevention ordinance, the grading ordinance, the stormwater ordinance, wetland mitigation guidelines, community design guidelines, public education programs, and intergovernmental coordination.

1.2.2 Roseville Creek and Riparian Management and Restoration Plan

The Roseville Creek and Riparian Management and Restoration Plan (RCRMRP) was developed in 2005 and resulted from a collaborative planning effort that included input from members of the community (Foothill Associates 2005). As stated in the RCRMRP, "The purpose of the Roseville Creek and Riparian Management and Restoration Plan is to provide a vision for the future appearance and function of Roseville creeks."

The Goals and Actions outlined in the OSPOMP for riparian and associated wetland systems are intended to be representative of, and complementary to, the goals of the RCRMRP. Many of these were incorporated directly from the RCRMRP. The RCRMRP is intended to be the guiding document for riparian and adjacent wetland management under the OSPOMP unless specific Agency restrictions dictated otherwise. Please see Section 2.5 of the RCRMRP for the applicable goals (Appendix 4).

1.2.3 Roseville Creek Maintenance Guidelines

The City of Roseville Creek Maintenance Guidelines (Creek Maintenance Guidelines) (GANDA 2001) outline and define the routine maintenance activities that the City undertakes as needed each year to maximize flow conveyance, to ensure adequate storm drainage, and to protect public safety (Appendix 5). The Creek Maintenance Guidelines place a strong emphasis on utilizing procedures that minimize potential impacts to biological resources, in particular, special-status species. Additionally, they identify proactive maintenance activities that can

improve and enhance creek habitat. The activities outlined in the Guidelines must be implemented in accordance with the City's current Streambed Alteration Agreement for Routine Maintenance with California Department of Fish and Wildlife (CDFW) (Appendix 6).

1.2.4 California Department of Fish and Wildlife Streambed Alteration Agreement For Routine Maintenance Activities

The City conducts routine annual creek maintenance and utility maintenance within areas subject to CDFW's jurisdiction consistent the CDFW Streambed Alteration Agreement For Routine Maintenance Activities (SAAFRMA) (March 22, 2017). (See Appendix 6). The SAAFRMA allows the City to undertake its annual creek maintenance activities for a variety of channel types, ranging from improved channels without significant riparian vegetation to unimproved channels with significant riparian vegetation. The CDFW SAAFRMA outlines the mitigation measures that are required prior to, during, and after the maintenance takes place (as appropriate). The CDFW SAAFRMA also outlines schedules and constraints for when the various types of work can be done as well as notification requirements to CDFW.

1.2.5 Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon

In 2005, the Service finalized the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Service 2005, Recovery Plan). The Recovery Plan features 33 federally listed plants and animals, including one species known to occur within the City of Roseville, the vernal pool fairy shrimp (*Branchinecta lynchi*) and one species (*Lepidurus packardi*) that was observed during monitoring for a vernal pool restoration project within the City, but it was not determined if a viable population was present. Cysts were likely present in inoculum material used for the project. Thirteen additional species of concern are included in the Recovery Plan, including four known to occur within or in the immediate vicinity of the City of Roseville. These are: Boggs Lake hedge hyssop (*Gratiola heterosepala*), Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), legenere (*Legenere limosa*), and western spadefoot toad (*Spea hammondii*).

This Recovery Plan was developed as an ecosystem-level strategy as opposed to a species-level strategy, since the featured species co-occur in the same ecosystem and are faced with similar threats from human activity. The recovery strategy includes five key elements. These are: 1) habitat protection, 2) adaptive management, restoration, and monitoring, 3), status surveys, 4) research, and 5) participation and outreach. Further defined actions needed to meet the recovery criteria are: 1) protect habitat within core areas and all other areas that contribute to recovery, 2) refine vernal pool conservation areas by additional analyses, 3) restore habitat and implement adaptive management strategies to manage conservation areas, 4) standardize survey and monitoring protocols to determine recovery success, 5) conduct research as part of the adaptive management, 6) develop and implement cooperative programs and partnerships through regional working groups, and 7) outreach and education.

Zone 1, 2, and 3 Core Areas have been designated so the Recovery Plan is implemented in a logical progressive manner. Zone 1 Core Areas are the highest priority areas, and include Mather (approximately 8 miles south of Roseville), Phoenix Field and Phoenix Park (approximately 4 miles south of Roseville), and Cosumnes/Rancho Seco (approximately 17 miles south of Roseville). The Western Placer County (Zone 2) Core Area is situated primarily west

and north of the City of Roseville (see Figure 1-1. *Western Placer County Core Area*). As shown in Figure 1-1, approximately 1275 acres of the City's Open Space Preserve system fall within this Core Area. Note that the total acreage does not include the City's Reason Farm Preserve (217 acres))), as that preserve area is managed independent of this Plan. There are no Zone 3 core areas near the City of Roseville.

Figure 1-1

The OSPOMP has been developed with the goals and strategies of the Recovery Plan in mind. Specifically, each of the five key elements of the vernal pool species recovery strategy is implicit within the OSPOMP. For example, the OSPOMP includes significant elements for habitat preservation and long term success (or sustainability). These elements address minimizing alterations to hydrology, invasive plant control, review of public access to reduce potential disturbance, among others. The OSPOMP also includes provisions to address habitat restoration where human activities have altered or destroyed habitat or vegetation communities. The adaptive management strategy is critical to allow for ongoing research and implementing alternative site-specific management techniques in order to attain the Goals of the OSPOMP and the Recovery Plan.

1.2.6 City of Roseville Bicycle Master Plan

The Bicycle Master Plan is intended to guide and influence bikeway policies, programs and development standards to make bicycling in Roseville more safe, comfortable, convenient, and enjoyable for all bicyclists. The ultimate goal of this effort is to increase the number of persons who bicycle in Roseville for transportation to work, school, and errands, and for recreation. The Bicycle Master Plan is developed within the context of the Circulation Element of the City's General Plan, which includes goals and policies to develop a balanced transportation system for automobiles, transit, bicycles, and pedestrians.

The Bicycle Master Plan includes plans for a Class I bike trail system. Class I bike trails are intended for use by bicyclists, pedestrians and other non-motorized users. Class I trails are typically 10' wide paved asphalt, with 2' shoulders of decomposed granite or aggregate base, for a total width of 14 feet. Class I trail appurtenances may include signs, striping, informational kiosks, fencing, bollards, bridges, roadway over or under-crossings with lighting, benches, water fountains, bike racks, and trailheads with paved parking, lighting and restrooms. Bike trails throughout the City's open space double as maintenance roads to lessen open space impacts.

The City of Roseville has an extensive bike trail system, much of which is located within the City's open space system. The Bicycle Master Plan details the planning and construction of additional trail miles within the City, primarily within open space. If and when the City expands, additional trail projects may be identified in or adjacent to growth areas. See Section 9.1.1 for more information on proposed trails and their locations.

1.3 Individual Open Space Preserves Combined Under the Plan

Although this Plan has been developed to provide one management strategy for all of the previously protected open space preserves, it is important to retain past knowledge regarding the specific locations of the individual preserves. Table 1-1. *Individual Open Space Preserve*s below outlines information regarding each of these open space preserves. Figure 1-2 shows the location of all Open Space Preserves that have been combined under this Plan. While Table 1-1 is updated during each OSPOMP update, a "live" version of Table 1-1 and accompanying map showing the current ownership and management status is maintained by the City as OSPOMP Appendix 7.

Table 1-1. Individual Open Space Preserves

Preserve Name/Map Number	Preserve Acreage	Current Owner/Manager	Funding Mechanism	Service File Number
Amoruso Ranch Specific Plan (39)	108.53±	Project Proponent	CFD	2008-F-0474-6
Antelope Creek Bridge [1] (25)	19±	City	N/A	n/a
Commerce Center 65 (01)	19±	City	Endowment	1-1-96-F-0001, 1-1-98-F-0175
Creekview Specific Plan (37)	87±	Project Proponent	CFD	
Del Webb (27)	112±	City/HOA	HOA	n/a
Diamond Oaks East	4±	City	N/A	n/a
Fiddyment 44, a.k.a. Woodlake Village (10)	6±	City	Infill CFD 4/HOA Funds	1-1-05-F-0037
Foothill Business Park (02)	46± (including new floodplain area)	City	Infill CFD 4	n/a
Highland Reserve North (11)	43±	City/Project Proponent	HRN CFD 2/Endowment	1-1-00-F-0016
Highland Reserve South/Heritage at Diamond Oaks [2] (12, 34)	140±	City	LLD	1-1-97-F-142, 1-1-99-I-1518
Johnson Ranch East [1] (19)	18±	City	N/A	n/a
Johnson Ranch Parcel 9 [1] (20)	7±	City	N/A	n/a
Kerry Downs [1] (21)	8±	City	N/A	n/a
Mahany Park [1] (22)	68±	City	N/A	n/a
Mourier 140, a.k.a. Roseville 140 (13)	13±	City	North Roseville CFD/Endowment	1-1-97-F-130
Mourier 160, a.k.a. Roseville 160 (14)	38±	City	Crocker Ranch CFD 2	1-1-99-F-0147
Olympus Oaks/Olympus Pointe/ Stoneridge Cavitt Ranch/Vista Oaks [3] (06,07, 16, 32)	301±	City/Project Proponent	Various CFD	96-F-0066 n
Pheasant Run [1] (28)	4±	City	N/A	n/a
Ridgewood [1] (23)	25±	City	N/A	n/a
Rose Park (04)	15±	City	Infill CFD 4	1-1-04-F-0220
Roseville 150 [1] (31) (33)	21±	City	N/A	n/a
Roseville Technology Park, a.k.a. Longmeadow (05)	8±	City	Longmeadow CFD 2	1-1-98-F-0171
Sierra Crossing [1] (29)	2±	City	N/A	n/a
Sierra Vista Specific Plan (38)	299±	Project Proponent	CFD	
Silverado Oaks Urban Reserve [2] (15)	59±	City	LLD/Endowment	n/a
West Roseville Specific Plan [2] (08)	737±	Project Proponent	WRSP CFD	1-1-03-F-0013
Woodcreek East, a.k.a. Diamond Woods (09)	59± (77± including buffer)	Project Proponent	Woodcreek East CFD 2 / Endowment	1-1-99-F-0075
Woodcreek North [2] (17)	45±	City	NRSP CFD 2/ Endowment	1-1-97-0006
Woodcreek Oaks, a.k.a. Hewlett Packard (26)	43±	City	Infill CFD 4	1-1-96-I-1433
Woodcreek Oaks/City Preserve [1] (24)	20±	City	N/A	n/a
Woodcreek West [2] (18)	52±	City	Woodcreek West CFD 2 / Endowment	1-1-99-F-0111
TOTAL:	2445±	N/A	N/A	

[1] Does not have an operations and management plan
[2] Is known to support vernal pool fairy shrimp
[3] Is known to support Valley elderberry longhorn beetle

Figure 1-2

A subset of these Open Space Preserves had Operations and Management Plans, all of which are superseded by this Plan. These are outlined in Section 1.4, below.

1.4 Operations and Management Plans Superseded by this Plan

Numerous operations and management plans were previously developed for Open Space Preserves throughout the City. As outlined above, one of the goals of the OSPOMP is to present one City-wide approach to open space management, maintenance and monitoring. Therefore, the OSPOMP consolidates these plans as bulleted below:

- Operations and Management Plan for the Commerce Center 65 Open Space Preserve, dated 31 January 2000
- Woodcreek East (a.k.a., Diamond Woods) Open Space Operations and Management Plan, dated 14 August 2002
- Operations and Management Plan for the Fiddyment 44 Open Space Preserve, dated 12 August 2005
- Operations and Management Plan for the West Roseville Specific Plan (a.k.a., Fiddyment Ranch/Westpark) Open Space Preserve, dated 1 October 2004Foothill Business Park 36.5-acre Wetland Preserve and Compensation Areas Operations and Management Plan, dated 18 December 2000
- Highland Reserve North Open Space Preserve Operations and Management Plan, dated 10 April 2001
- Highland Reserve South Open Space Preserve Operations and Management Plan, dated 3 November 1999
- Parkside Industrial Center Open Space Operations and Management Plan (draft), dated 9 August 2002
- Operations and Management Plan for the Rose Park Open Space Preserve, dated 19 April 2005
- Roseville 140 (aka Mourier 140) Operations and Management Plan for the Open Space Preserve Along the North Side of South Branch Pleasant Grove Creek, dated 30 July 1999
- Operations and Management Plan for the Mourier 160 (a.k.a., Roseville 160) Open Space Preserve Areas, dated 19 December 2000
- Operations and Management Plan for Roseville Technology Park (a.k.a., Longmeadow) Open Space Preserve, dated 8 October 2002
- Silverado Oaks Urban Reserve Open Space Preserve Operations and Management Plan, dated 5 September 2003
- Stoneridge/Northeast Roseville Specific Plan Area Open Space Management Plan, dated November 2002
- Woodcreek North Project Operations and Management Plan for the Open Space Preserve/Wetland Compensation Area, dated 11 May 2000
- Operations and Management Plan for Woodcreek Oaks (a.k.a., Hewlett Packard) Preserve, dated 5 June 2008
- Woodcreek West Project Wetland Compensation Area Operations and Management Plan, dated 25 April 2000

The OSPOMP is not intended to supersede the Operations and Management Plan for the Reason Farms Environmental Preserve, dated 14 June 2005, the Operations and Management Plan for

the Del Webb/Sun City Preserve (City only owns the preserve, but does not manage it) or any preserve area within the City that falls under private or conservancy ownership/management.

1.5 Private Open Space Preserves

A number of privately owned Open Space Preserves are present within the City. These areas may or may not be zoned open space. Typically, the City does not have any responsibility with respect to these areas and they are not covered under this Plan. A map showing the privately held Open Space Preserves will be developed and added to the Plan when available (Appendix 8). This will allow the City to identify and coordinate with the owners or managers of these areas, if needed.

1.6 Preserve Areas Appended as Part of the 2017 Plan Update

As discussed in Section 1.1 above, one purpose of this Plan is to eliminate the need for additional management plans when new open space is established through the development process or habitat conservation efforts. As conditioned by related Section 404 Permits, the following Preserve areas have appended to this Plan. Management of these areas is conducted by the landowner/project proponent in accordance with OSPOMP Chapter 5. Following transfer of ownership to the City consistent with Chapter 5, the City assumes Preserve management responsibilities and related monitoring and reporting is carried out consistent with the balance of this Plan.

2.0 OPEN SPACE DESCRIPTION

The City of Roseville's Open Space system consists of an approximately 2,026-acre, primarily City-owned Open Space Preserve system (see Figure 1-2) and an approximately 532-acre primarily City-owned General Open Space system (Figure 2-1. *General Open Space*, Appendix 9), resulting in a total of approximately 2,558 acres of Open Space covered by this Plan.

2.1 Surrounding Land Uses

While historically vernal pool grassland and oak woodland/savannah dominated the landscape, the City of Roseville was developed in recent history as a railroad junction surrounded by agricultural areas. As the City expanded, additional business/commercial and industrial, to mixed density residential areas were developed and annexed into the City from adjacent agricultural areas. A 1937 aerial of the City is available in Figure 2-2. *City of Roseville - 1937* and a 2007 aerial is shown in Figure 2-3. *City of Roseville - 2007*. The land uses surrounding the City's Open Space range from agricultural, business/commercial and industrial, to mixed density residential development, schools, and parks. The City is currently roughly divided into these use categories as indicated on Figure 2-4. *Land Use* (Note: There are differences in the Open Space land use acreages and OSPOMP Open Space acreages due to zoning and ownership).

2.2 Topography and Soils

According to the Natural Resource Soil Conservation Service (NRCS) there are several soil types that occur within the Open Space areas as shown in Figure 2-5. *Natural Resources Conservation Service Soil Types*. Soil types include:

- *Alamo-Fiddyment complex, 0 to 5 percent slopes (104)*
  "These nearly level to undulating soils are on low terraces at elevations of 50 to 130 feet. The unit is about 50 percent Alamo soil and 30 percent Fiddyment soil. The Alamo soil is in nearly level basins and drainageways, and the Fiddyment soil is on side slopes and ridges…The Alamo soil is a poorly drained clay that is moderately deep over a hardpan…The Fiddyment soil is well drained and is moderately deep over hardpan. It formed in old valley fill indurated siltstone or sandstone" (U.S. Department of Agriculture, Soil Conservation Service (USDA) 1980). Permeability and surface runoff is slow for this soil type.

- *Alamo Variant clay, 2 to 15 percent slopes (105)*
  "This is a moderately deep, gently sloping, somewhat poorly drained clay on alluvial bottoms and rolling foot slopes in valleys between volcanic ridges. It formed over alluvium from mixed sources and colluvium and residuum from volcanic mudstone and andesite. Elevations are 100 to 200 feet. Permeability is very slow" (USDA 1980).

- *Andregg coarse sandy loam, 2 to 9 percent slopes (106)*
  "This is a moderately deep, gently rolling, well drained soil underlain by weathered granitic bedrock. It formed in residuum on low hills in the Loomis Basin. Elevations are 200 to 1,000 feet. Permeability is moderately rapid" (USDA 1980).

Figure 2-1

Figure 2-2

Figure 2-3

Figure 2-4

Figure 2-5

- *Caperton-Andregg coarse sandy loams, 2 to 15 percent slopes (130)*
  "These undulating to rolling soils are on the granitic foothills in the Folsom Lake-Loomis Basin area at elevations of 200 to 1,000 feet. The unit is about 50 percent Caperton soil, and about 30 percent Andregg soil. The Caperton soil is on rounded knolls, and the Andregg soil is on foot slopes. The Caperton is a shallow, somewhat excessively drained soil that formed in residuum from granitic rock. The Andregg is a moderately deep, well drained soil that also formed in residuum from granitic rock. Permeability is moderately rapid" (USDA 1980).

- *Cometa sandy loam, 1 to 5 percent slopes (140)*
  "This is a deep, well drained claypan soil on low terraces at elevations of 75 to 200 feet. It formed in alluvium, mainly from granitic sources…Permeability is very slow" (USDA 1980).

- *Cometa-Fiddyment complex, 1 to 5 percent slopes (141)*
  "These undulating soils are on low terraces…They occur at elevations of 75 to 200 feet. The unit is about 35 percent Cometa soil and 35 percent Fiddyment soil…The Cometa is a deep, well drained claypan soil that formed in alluvium, mainly from granitic sources… The Fiddyment soil is well drained and is moderately deep over hardpan. Permeability is very slow" (USDA 1980).

- *Cometa-Ramona sandy loams, 1 to 5 percent slopes (142)*
  "These undulating soils are on low terraces…They occur at elevations of 75 to 200 feet. The unit is about 50 percent Cometa soil and 30 percent Ramona soil. The Cometa soil is on short side slopes and bottoms, and the Ramona soil is on fingerlike ridges and younger land surfaces…The Ramona soil is very deep and well drained. It formed in alluvium from predominantly granitic sources…Permeability is moderately slow" (USDA 1980).

- *Exchequer very stony loam, 2 to 15 percent slopes (144)*
  "This is shallow, somewhat excessively drained very stony soil underlain by hard andesitic breccia. It formed in residuum on long, broad volcanic ridges at elevations of 100 to 2,000 feet…Permeability is moderate" (USDA 1980).

- *Exchequer-rock outcrop complex, 2 to 30 percent slopes (145)*
  "The map unit is on long, broad volcanic ridges and their side slopes. It is about 60 percent Exchequer soil and 15 percent andesitic breccia (lava cap). Elevations are 100 to 1,000 feet…the Exchequer is a shallow, somewhat excessively drained very stony soil that formed in residuum from hard andesitic breccia…Permeability is moderate…Surface runoff is very rapid. There is no hazard of erosion" (USDA 1980).

- *Fiddyment loam, 1 to 8 percent slopes (146)*
  "This is moderately deep, well drained soil on low terraces of siltstone at elevations of 75 to 135 feet…Permeability is very slow" (USDA 1980).

- *Fiddyment-Kaseberg loams, 2 to 9 percent slopes (147)*
  "These undulating to gently rolling soils are on low siltstone terraces at elevations of 75 to 135 feet. The unit is about 50 percent Fiddyment soil and 30 percent Kaseberg soil"

(USDA 1980). The Fiddyment soil is a well drained soil that is moderately deep over a hardpan, and the Kaseberg is a well drained soil that is shallow over a hardpan.

- *Inks cobbly loam, 2 to 30 percent slopes (152) and Inks cobbly loam, 30 to 50 percent slopes (153)*
  "This is a shallow, well drained cobbly soil underlain by andesitic conglomerate. It formed in residuum on long broad volcanic ridges and side slopes at elevations of 200 to 1,200 feet…Permeability is moderate" (USDA 1980).

- *Inks-Exchequer complex, 2 to 25 percent slopes (154)*
  "This map unit is on long, broad volcanic ridges and side slopes at elevations of 200 to 1,200 feet. It is about 40 percent Inks soil and 30 percent Exchequer soil. The soil pattern generally follows the pattern of oak trees. The Inks soil supports a denser stand of oaks than does the Exchequer soil…The Inks is a shallow, well drained cobbly soil that formed in residuum from andesitic conglomerate… The Exchequer is a shallow somewhat excessively drained very stony soil that formed in residuum from hard andesitic breccia" (USDA 1980). Permeability for Inks and Exchequer is moderate.

- *Kilaga loam (162)*
  "This is a very deep, nearly level, well drained soil on alluvial bottoms and low terraces. It occurs mainly at elevations of 75 to 150 feet. It formed in alluvium from mixed sources…Permeability is slow" (USDA 1980).

- *Ramona sandy loam, 0 to 2 percents slopes (174) and Romona sandy loam, 2 to 9 percent slopes (175)*
  "This is an undulating, very deep, well drained soil on low terraces at elevations of 100 to 200 feet. It occurs as stringers of higher ground on the terraces. It formed in alluvium from predominantly granitic sources" (USDA 1980). Permeability is moderately slow.

- *Redding and Corning gravelly loams, 2 to 9 percent slopes (176) and Redding and Corning gravelly loams, 9 to 15 percent slopes (177)*
  "These undulating to rolling soils are on high terraces at elevations of 100 to 240 feet. Both soils have a clay hardpan. The Redding soil has a hardpan under the claypan, and the Corning soil has softly consolidated gravelly alluvium under the claypan…The Redding is a well drained claypan soil that is moderately deep over a hardpan. It formed in gravelly old valley fill from mixed sources…The Corning is a well drained, very deep claypan soil that is underlain by gravelly alluvium. It formed in old valley fill from mixed sources" (USDA 1980). Permeability for both soil types is very slow.

- *Rubble land (180)*
  "Rubble land is cobbly and stony mine debris and tailings from dredge or hydraulic mining. It is essentially barren" (USDA 1980).

- *San Joaquin-Cometa sandy loams, 1 to 5 percent slopes (182)*
  "These undulating soils are on low terraces at elevations of 50 to 200 feet. The unit is about 40 percent San Joaquin soil and 30 percent Cometa soil. Both soils have a claypan…The San Joaquin is a well drained claypan soil that is moderately deep over a

hardpan. It formed in alluvium from predominantly granitic sources…The cometa is a deep, well drained claypan soil. It formed in alluvium, mainly from granitic sources" (USDA 1980). Permeability for both soils is very slow.

- *Sierra sandy loam, 9 to 15 percent slopes (184)*
  "This is a deep, rolling, well drained soil underlain by weathered granitic rock. It formed in residuum on low foothills at elevations of 200 to 1,000 feet…Permeability is moderately low" (USDA 1980).

- *Xerofluvents, occasionally flooded (193)*
  "Xerofluvents, occasionally flooded, consist of small areas of moderately well drained loamy alluvium adjacent to stream channels…Permeability is moderate to moderately slow" (USDA 1980).

- *Xerofluvents, frequently flooded (194)*
  "Xerofluvents, frequently flooded, consist of narrow stringers of somewhat poorly drained recent alluvium adjacent to stream channels…Permeability is variable" (USDA 1980).

- *Xerofluvents, hardpan substratum (195)*
  "Xerofluvents, hardpan substratum, consist of small areas of somewhat poorly drained loamy alluvium in minor drainageways on terraces…Permeability is moderately slow" (USDA 1980).

- *Xerorthents, cut and fill areas (196)*
  "Xerorthents, cut and fill areas, consist of mechanically removed and mixed soil material in which horizons are no longer discernible. Most of this material is in the right-of-way of Interstate 80, the town of Auburn, and the Southern Pacific train yard in Roseville. Some fill areas contain rocks, concrete, asphalt, and other debris. Included are small areas of similar soils. Cut and fill areas are typically well drained. Surface runoff is very rapid. The hazard of erosion is moderate. Permeability and available water capacity are variable" (USDA 1980).

- *Xerorthents, placer areas (197)*
  "Xerorthents, placer areas, consist of stony, cobbly, and gravelly material commonly adjacent to streams that have been placer mined. The soil material is derived from a mixture of rocks. It is stratified or poorly sorted" USDA 1980. Permeability is variable.

2.3 Biological Resources

The City's Open Space supports three primary vegetation communities that in turn support a variety of wildlife species, some of them special-status.

2.4 Vegetation Communities and Associated Wildlife

The dominant vegetation community within the City's Open Space is vernal pool grassland with smaller components of riparian woodland/wetlands and oak woodland/savannah. These

communities are the basis for the Habitat Management Units discussed in Section 3.5. Each of these communities is described below and shown on Figure 2-6. *Habitat Management Units*.

2.4.1 Vernal Pool Grassland

The vernal pool grassland consists of uplands and ephemeral wetlands and drainages. Representative photos of this community are included in Figure 2-7. *Vernal Pool Grassland Photos*. The wetland types are further detailed in Section 2.5. The upland portion of the vernal pool grassland community is comprised primarily of non-native naturalized Mediterranean grasses such as ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), wild oats (*Avena fatua*), ryegrass (*Lolium multiflorum*), Mediterranean barley (*Hordeum marinum*), and medusahead grass (*Taeniatherum caput-medusae*). Other herbaceous species in this community may include bur clover (*Medicago polymorpha*), filaree (*Erodium botrys*), clover (*Trifolium* species), blue dicks (*Dichelostemma capitatum*), spikeweed (*Hemizonia fitchii*), and yellow-star thistle (*Centaurea solstitialis*).

The vernal pool grassland supports a modest diversity of wildlife species, including mammals such as California vole (*Microtus californicus*), black-tailed jackrabbit (*Lepus californicus*), deer mouse (*Peromyscus maniculatus*), and pocket gopher (*Thomomys bottae*). These mammals represent potential foraging items for predators such as northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), Swainson's hawks (*Buteo swainsoni*) white-tailed kite (*Elanus leucurus*), gopher snake (*Pituophis catenifer*), western rattlesnake (*Crotalus viridus*), and coyote (*Canis latrans*). Birds that may find the grasslands suitable for nesting include the horned lark (*Eremophila alpestris*) and western meadowlark (*Sturnella neglecta*). Other birds, which do not necessarily nest within the grasslands but may forage in this habitat, include Brewer's blackbirds (*Euphagus cyanocephalus*) and tricolored blackbird (*Agelaius tricolor*).

2.4.2 Oak Woodland/Savannah

Dominant trees within the City's oak woodland/savannah include blue oak (*Quercus douglasii*), Valley oak (*Quercus lobata*), and interior live oak (*Quercus wislizenii*). Representative photos of this community are included in Figure 2-8. *Oak Woodland/Savannah Photos*. Other woody species found in oak woodland can include hoary coffeeberry (*Rhamnus tomentella*), coyote brush (*Baccharis pilularis*), toyon (*Heteromeles arbutifolia*), and poison oak (*Toxicodendron diversilobum*). Herbaceous understory plants include a variety of non-native grasses such as ripgut brome, medusahead grass, soft brome, wild oats, Mediterranean barley, and Italian ryegrass. Purple needle grass (*Nassella pulchra*), a native perennial bunch grass, may be found scattered amongst the non-native species.

Oak woodlands and savannahs provide important wildlife resources, including food, cover, shade, roosting, and breeding sites. Acorns are preferred or essential food items in the diets of acorn woodpecker (*Melanerpes formicivorus*), western scrub-jay (*Aphelocoma californica*), western gray squirrel (*Sciurus griseus*), and many other species. Insects found in association with oak foliage and bark also attract insectivorous birds such as yellow-rumped warbler (*Dendroica coronata*) and Hutton's vireo (*Vireo huttoni*). Larger, dead, and/or decaying trees provide nesting sites for cavity-nesting birds such as American kestrel (*Falco sparverius*), western bluebird (*Sialia mexicana*), tree swallow (*Tachycineta bicolor*), and white-breasted nuthatch (*Sitta carolinensis*).

Figure 2-6

Figure 2-7

Figure 2-8

Other wildlife species that may be found in the oak woodland/savannah include coyote, western gray squirrel, mule deer (*Odocoileus hemionus*), Mexican free-tailed bat (*Tadarida brasiliensis*), big brown bat (*Eptesicus fuscus*), pallid bat (*Antrozous pallidus*), Pacific chorus frog (*Pseudacris regilla*), western fence lizard (*Sceloporus occidentalis*), California kingsnake (*Lampropeltis getulus*), sharp-tailed snake (*Contia tenuis*), and striped racer (*Masticophis lateralis*).

2.4.3 Riparian Woodland/Wetlands

Riparian woodland is typically comprised of a canopy of mature trees, an intermediate shrub layer, and herbaceous ground-cover. Wetlands such as marshes are present adjacent to the riparian corridor. The stratified community provides important elements for the completion of the life cycle of many wildlife species and provides important migration corridor for a variety of wildlife, in addition to providing forage and cover. Representative photos of this community are included in Figure 2-9. *Riparian Woodland/Wetlands Photos*. These wetlands are described in Section 2.5.

The canopy of the riparian woodland is comprised primarily of Valley oak with scattered black willow (*Salix gooddingii*), Fremont cottonwood (*Populus fremontii*), and California buckeye (*Aesculus californica*). There is only remnant understory or mid-level vegetation through most of the Pleasant Grove Creek corridor as a result of extensive cattle grazing. The herbaceous understory include Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), tall flatsedge (*Cyperus eragrostis*), hairy willow-herb (*Epilobium ciliatum*), willow-herb (*Epilobium* species), smilo grass (*Piptotherum miliaceum*), prickly sowthistle (*Sonchus asper*), vetch (*Vicia* species), California wild grape (*Vitis californica*), and rough cockle-bur (*Xanthium strumarium*).

The riparian communities in this region typically support a wide variety of wildlife species, including Bewick's wren (*Thryomanes bewickii*), downy woodpecker (*Picoides pubescens*), Swainson's hawk, wood duck (*Aix sponsa*), red-shouldered hawk (*Buteo lineatus*), great horned owl (*Bubo virginianus*), and tree swallow. Several bat species as previously described in the oak woodland community may occur within the riparian areas, as well.

The understory scrub community provides nesting habitat for Bewick's wren, song sparrow (*Melospiza melodia*), and California towhee (*Pipilo crissalis*). Resident and migratory songbirds such as hermit thrush (*Catharus guttatus*), fox sparrow (*Passerella iliaca*), and spotted towhee (*Pipilo maculatus*) also utilize willow scrub community for foraging and cover. Other wildlife species observed within the riparian communities include Pacific chorus frog, western gray squirrel, mule deer, striped skunk (*Mephitis mephitis*), beaver (*Castor canadensis*), common garter snake (*Thamnophis sirtalis*), and raccoon (*Procyon lotor*).

2.5 Waters of the U.S.

A variety of waters of the U.S. occur throughout City within the vegetation communities listed above. Each wetland type is described briefly below. The City is situated primarily within two larger watersheds, the Pleasant Grove Watershed and the Dry Creek Watershed (Figure 2-10. *City of Roseville Watersheds*). Both of these watersheds not only provide habitat for fish, birds, mammals, reptiles, and other species but they also provide flood water storage and conveyance.

Figure 2-9

Figure 2-10

The Pleasant Grove watershed within the City limits is comprised of the north and south forks of Pleasant Grove Creek, Kaseberg Creek, Coyote Creek, and a number of unnamed seasonal drainages and tributaries (see Figure 2-10). The majority of these creeks are perennially inundated due to surface runoff and from upstream activities.

The Dry Creek watershed within the City limits is comprised of Secret Ravine, Miners Ravine, False Ravine, Antelope Creek, Cirby Creek, and Linda Creek (see Figure 2-10). Similar to the Pleasant Grove watershed, the majority of these creeks are perennially inundated. Secret Ravine, Miners Ravine and Linda Creek are all considered potential salmonid habitat, while the main stem of Dry Creek is considered a migratory passage for Chinook and Steelhead salmon.

2.5.1 Intermittent Drainages/Creeks

Intermittent drainages are characterized by the presence of an ordinary high water mark that can have a defined bed and bank. A representative photo of a creek and an intermittent drainage is included on Figure 2-11. *Creek and Intermittent Drainage*). These drainage features convey flows during storm events and through the wet season, but standing water generally does not persist except in areas where deeper pools form. These types of drainages are largely unvegetated due to the scouring effects of fast flowing water, but hydrophytic vegetation may be prevalent at the upper edges of the drainage.

2.5.2 Vernal Pools

Vernal pools are poorly drained, isolated depressions that occur within the annual grassland community. A representative photo of a vernal pool is included on Figure 2-12. *Vernal Pool*. The vernal pools are inundated for several weeks at a time during the rainy season and may dry between storm events. Vernal pools are fed by direct rainfall and/or surface run-off.

In the Mediterranean climate of California's Central Valley, fall rains initiate the "wetting" stage during which seeds germinate and dormant perennials re-sprout. As soils saturate and standing water accumulates, the pool enters the "aquatic" phase. Inundation may be periodic or continuous, and this variability supports a diverse plant and animal community. As water levels recede, thought to be primarily through evaporation, the "drying" phase begins. During this time, pool basins begin drying and plant flowering reaches its peak followed by the setting of seeds. The final phase is the "drought" phase and is characterized by dry soils and dead or dormant vegetation.

Preserved vernal pools throughout the City range from well-defined basins with distinct boundaries to those with indistinct boundaries that may have been affected by historic land practices such as agriculture. Additionally, vernal pools have been constructed as mitigation in several Open Space Preserve areas. Vernal pools are dominated by native plants such as slender popcorn-flower (*Plagiobothrys stipitatus*), annual hairgrass (*Deschampsia danthonioides*), downingia (*Downingia* species), and Vasey's coyote-thistle (*Eryngium vaseyi*). Typical wildlife associated with vernal pools include various aquatic invertebrates and amphibians such as the Pacific chorus frog. On occasion, waterfowl or wading bird species may forage and/or rest within vernal pools during the wet season.

Figure 2-11

Figure 2-12

Vernal pools provide habitat for a variety of endemic and often special-status plant and animal species (see Section 2.6). As such, vernal pools are remnant patches of the native landscape within a grassland community dominated by non-native species.

2.5.3 Seasonal Wetland/Drainage Swales

Within the Open Space, seasonal wetlands and drainage swales occur within the annual grassland and occasionally the oak woodland. A representative photo of seasonal wetland and a drainage swale is included on Figure 2-13. *Seasonal Wetland and Drainage Swale*. Seasonal wetland depressions follow a similar hydrological cycle to that of vernal pools but may be shallower, less well-defined, and/or dominated by non-native generalist plant species. Some of these depressions/swales may support saturated soil only during the wet season.

A variety of plants and wildlife can be found within seasonal wetlands and drainage swale communities. The "drier" seasonal wetlands/drainage swales may be dominated by grasses and annual herbs including Italian ryegrass, Mediterranean barley, and hyssop loosestrife (*Lythrum hyssopifolium*). The "wetter" seasonal wetlands/drainage swales are potentially dominated by species such as baltic rush (*Juncus balticus*), annual rabbit-foot grass (*Polypogon monspeliensis*), Bermuda grass (*Cynodon dactylon*), and creeping spikerush (*Eleocharis macrostachya*). When inundated, these seasonal wetlands and drainage swales provide habitat for aquatic invertebrates and amphibians. For most of the remainder of the year, wildlife usage is similar to that of typical Central Valley non-native annual grassland habitat.

2.5.4 Marsh

The emergent marshes in the City's Open Space are typically perennial systems within or adjacent to riparian areas. A representative photo of a marsh is included on Figure 2-14. *Marsh*. They support wetland species such as cattail (*Typha* species), bulrush (*Scirpus* species), tail flatsedge, soft rush (*Juncus effusus*), annual rabbit-foot grass, curly dock (*Rumex crispus*), and willows.

2.6 Special-Status Species

Several special-status species have been found or have the potential to be found within the City's Open Spaces (Figure 2-15. *CNDDB Occurrences within the City Boundary* and Table 2-1. *Potentially Occurring Special-Status Species*).

2.6.1 Plants

Dwarf Downingia

Dwarf downingia (*Downingia pusilla*) is not listed pursuant to either the federal or California Endangered Species Acts; however, it is designated as a California Native Plant Society (CNPS) List 2 species. This species is a small herbaceous annual that occurs in vernal pools and mesic areas in valley and foothill grasslands (CNPS 2001). This species also appears to have an affinity for slight disturbance since it has been found in man-made features such as tire ruts, scraped depressions, stock ponds, and roadside ditches (Placer County 2003).

Figure 2-13

Figure 2-14

Figure 2-15

Table 2-1 (pg 1 of 2)

Table 2-1 (pg 2 of 2)

This species blooms from March through May, and is known to occur at elevations ranging from sea level to 1,460 feet above mean sea level (CNPS 2001). The current range of this species in California includes Merced, Mariposa, Napa, Placer, Sacramento, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties (CNPS 2001).

Boggs Lake Hedge-Hyssop

Boggs Lake hedge-hyssop (*Gratiola heterosepala*) is not listed pursuant to the federal ESA; however it is listed as endangered pursuant to the California Endangered Species Act. It is also designated as a CNPS List 1B species. This species is a small, semi-aquatic, herbaceous annual that occurs on clay soils in vernal pools, marshes, and swamps of lake margins (CNPS 2001, CDFG 2003). Boggs Lake hedge-hyssop blooms from April through August, and is known to occur at elevations ranging from 30 to 7,790 feet above mean sea level (CNPS 2001). The current range of this species in California includes Fresno, Lake, Lassen, Madera, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, San Joaquin, Solano, and Tehama counties (CNPS 2001, CDFG 2003).

Ahart's Dwarf Rush

Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*) is not listed pursuant to either the federal or California Endangered Species Acts; however, it is designated as a CNPS List 1B species. This species is an herbaceous annual that occurs in mesic areas in valley and foothill grasslands (CNPS 2001). This species also appears to have an affinity for slight disturbance since it has been found on farmed fields and gopher turnings (Placer County 2003). Ahart's dwarf rush blooms from March through May, and it is known to occur at elevations ranging from 100 to 330 feet above mean sea level (CNPS 2001, Placer County 2003). Ahart's dwarf rush is endemic to California, and the current range of this species includes Butte, Calaveras, Placer, Sacramento, Tehama, and Yuba counties (CNPS 2007).

Legenere

Legenere (*Legenere limosa*) is not listed pursuant to either the federal or California Endangered Species Acts; however, it is designated as a CNPS List 1B species. This species is an herbaceous annual that occurs in a variety of seasonally inundated environments including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (CNPS 2001, Placer County 2003). Legenere blooms from April through June, and it is known to occur at elevations ranging from sea level to 2,900 feet above mean sea level (CNPS 2001). Legenere is endemic to California, and the current range of this species includes Alameda, Lake, Napa, Placer, Sacramento, Santa Clara, San Joaquin, Shasta, San Mateo, Solano, Sonoma, Stanislaus, Tehama and Yuba counties (CNPS 2007). However, the species is believed to be extirpated from Sonoma and Stanislaus counties (CNPS 2001).

Slender Orcutt Grass

Slender Orcutt grass (*Orcuttia tenuis*) is listed as threatened and endangered pursuant to the federal and California Endangered Species Acts, respectively, and it is designated as a CNPS List 1B species. This species is an herbaceous annual that occurs in vernal pools

(CNPS 2001) primarily on substrates of volcanic origin (Crampton 1959, Corbin and Schoolcraft 1989; as cited in Service 2003). This species is known to occur in the same type of vernal pool complexes as Sacramento Orcutt grass in Sacramento County; however, these species have not been observed co-existing in the same vernal pool (Service 2003). The median area of pools occupied by populations studied by Stone et al. (1988, as cited in Service 2003) was 1.6 acres and ranged from 0.2 acre to 111.0 acres (Service 2003). Slender Orcutt grass blooms from May through September, and it is known to occur at elevations ranging from 115 to 5,775 feet above mean sea level (CNPS 2001). Slender Orcutt grass is endemic to California, and the current range for this species includes Butte, Lake, Lassen, Plumas, Modoc, Plumas, Sacramento, Shasta, Siskiyou, and Tehama counties (CNPS 2007).

Sacramento Orcutt Grass

Sacramento Orcutt grass (*Orcuttia viscida*) is listed as endangered pursuant to both the federal and California Endangered Species Acts, and it is designated as a CNPS List 1B species. This species is an herbaceous annual that occurs in vernal pools (CNPS 2001). The median area of occupied pools discovered prior to 1988 was 0.69 acre and ranged from 0.25 acre to 2.03 acres (Service 2003). Sacramento Orcutt grass blooms from April through July, and it is known to occur at elevations ranging from 100 to 330 feet above mean sea level (CNPS 2001). Sacramento Orcutt grass is endemic to California and to the southeastern Sacramento Valley (Keeler-Wolf et al. 1998, as cited in Service 2003), with all known occurrences restricted to Sacramento County. Known occurrences of this species within the general region are limited to a small area east of Mather Field, Phoenix Field Ecological Reserve, Phoenix Park (introduced population), and an area near Rancho Seco Lake (Service 2003).

Sanford's Arrowhead

Sanford's arrowhead (*Sagittaria sanfordii*) is not listed pursuant to either the federal or California Endangered Species Acts; however, it is designated as a CNPS List 1B species. This species is a rhizomatous, herbaceous perennial that occurs in shallow marshes and freshwater swamps (CNPS 2001). Sanford's arrowhead blooms from May through October, and it is known to occur at elevations ranging from sea level to 2,000 feet above mean sea level (CNPS 2001). Sanford's arrowhead is endemic to California, and the current range of this species includes Butte, Del Norte, Fresno, Merced, Mariposa, Orange, Placer, Sacramento, San Joaquin, Shasta, Tehama, and Ventura counties (CNPS 2007). However, this species is believed to be extirpated from Orange and Ventura counties (CNPS 2007).

2.6.2 Invertebrates

Conservancy Fairy Shrimp

The Conservancy fairy shrimp (*Branchinecta conservatio*) was listed as an endangered species in accordance with the federal Endangered Species Act of 1973, as amended, on 19 September 1994 (Service 1994). Critical Habitat units were designated for this species in the following counties: Butte, Colusa, Mariposa, Merced, Solano, Stanislaus, Tehama, and Ventura (Service 2006). This species is usually associated with cool-water pools, which are

low to moderate in dissolved solids (Eriksen and Belk 1999). The species appears to be most commonly associated with relatively large, turbid vernal pools (Service 1994, Eriksen and Belk 1999, Service 2007). Conservancy fairy shrimp have been netted from November to late April, at water temperatures ranging from as low as 41°F (5°C) early in the ponding cycle, to as high as 75°F (24°C) near the end of the season (Syrdahl 1993, *as cited in* Eriksen and Belk 1999). Hatching generally occurs in the week following inundation of the pool at temperatures around 50°F (10°C). Maturation takes at least 19 days; if pool temperatures slowly increase to at least 68°F (20°C); however, the average time to maturity is 49 days (Eriksen and Belk 1999).

The distribution of Conservancy fairy shrimp is limited to the northern two-thirds of the Central Valley at an elevation range of approximately 16 – 475 feet (5 – 145 meters) above mean sea level (Eriksen and Belk 1999). Populations of this species have been documented at eight widely separated locations, which include Vina Plains, Butte and Tehama counties; Sacramento National Wildlife Refuge, Glen County; Yolo Bypass Wildlife Area, Yolo County; Jepson Prairie, Solano County; Mapes Ranch, Stanislaus County; University of California Merced area, Merced County; Grasslands Ecological Area, Merced County; and Los Padres National Forest, Ventura County (CDFG 2003, Service 2007).

The species was also reported at Beale Air Force Base, Yuba County in 1991 (CDFG 2003). According to the California Natural Diversity Database occurrence record (Occurrence No. 2), one specimen was collected and deposited in the personal collection of D.G. Alexander (CDFG 2003). However, the specimen collected at Beale Air Force Base was later determined to have been misidentified and was correctly identified as a vernal pool fairy shrimp (*Branchinecta lynchi*) (C. Rogers, EcoAnalysts, Inc., *in litt.*, 2007 *as cited in* Service 2007). The Service has determined that Conservancy fairy shrimp are not likely to occur within Beale Air Force Base as the species has not been detected on-site during subsequent surveys and the previous occurrence record was determined to be a misidentification (Service 2007).

A single male Conservancy fairy shrimp was identified at the Mariner Vernal Pool Conservation Bank, Placer County, in the spring of 2007 by Brent Helm (Service 2007). At present, it is not known whether this occurrence represents a sustainable population or an anomaly. Additional surveys are needed to determine the status of the species at this location.

Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp (*Branchinecta lynchi*) is listed as threatened in accordance with the federal Endangered Species Act. Vernal pool fairy shrimp may occur in seasonal ponds, vernal pools, and swales during the wet season, which generally occurs from December through May. This species can be found in a variety of pool sizes, ranging from less than 0.001 acre to over 24.5 acres (Eriksen and Belk 1999). The shrimp hatch from cysts when colder water (10°C [50°F] or less) fills the pool and mature in as few as 18 days, under optimal conditions (Eriksen and Belk 1999). At maturity, mating takes place and cysts are dropped. Vernal pool fairy shrimp occur in disjunct patches dispersed across California's Central Valley from Shasta County to Tulare County, the central and southern Coast Ranges

from northern Solano County to Ventura County, and three areas in Riverside County (Service 2003).

Vernal pool fairy shrimp have been documented within the following Open Space Preserves: West Roseville Specific Plan, Highland Reserve South, Silverado Oaks Urban Reserve, Woodcreek North, Woodcreek West, HRS/Heritage at Diamond Oaks, and the SVSP Westbrook Preserve.

Midvalley Fairy Shrimp

The Midvalley fairy shrimp (*Branchinecta mesovallensis*) is not listed pursuant to either the California or federal Endangered Species Acts, but occurrences of this species are tracked by the California Natural Diversity Database (CNDDB). The Midvalley fairy shrimp was formally described as a species in 2000 (Belk and Fugate 2000). This species typically occurs in small, shallow vernal pools, swales, and various artificial ephemeral wetland types (e.g., roadside puddles, scrapes and ditches, and railroad toe-drain pools) (Belk and Fugate 2000, Service 2004). Midvalley fairy shrimp have been collected from late January to early April (Eriksen and Belk 1999). The cysts typically hatch in the first week of pool filling if water temperatures are near 10°C (50°F) (Eriksen and Belk 1999). This species has been documented in several California counties including: Sacramento, Solano, Contra Costa, San Joaquin, Madera, Merced, Fresno, and Yolo (Belk and Fugate 2000, CDFG 2003, Service 2004).

California Linderiella

California linderiella (*Linderiella occidentalis*) is not listed pursuant to either the California or federal Endangered Species Acts; however, occurrences of this species are tracked by the CNDDB. This species is endemic to California's vernal pools and seasonal ponds. California linderiella inhabit a variety of seasonal ponds, vernal pools, and swales. The shrimp hatch from cysts during late December when water temperatures are below 20°C (68°F), more commonly at 10°C (50°F) (Eriksen and Belk 1999). California linderiella, due to its tolerance for warmer water, may persist until the pools evaporate completely (Helm 1998). This species ranges from Tehama County south through the Central Valley to Fresno County with disjunct populations in Mendocino and Lake Counties south to Ventura and Santa Barbara Counties (Eriksen and Belk 1999).

Vernal Pool Tadpole Shrimp

The vernal pool tadpole shrimp (*Lepidurus packardi*) is listed as endangered pursuant to the federal Endangered Species Act. This species inhabits vernal pools containing clear to highly turbid water, ranging in size from 0.001 to 89.0 acres (Service 1994). Vernal pool tadpole shrimp are distinguished from other vernal pool branchiopods discussed in this report by a large, shield like carapace that covers the anterior half of their body (Service 2003). Cysts hatch during the wet season and the shrimp reach maturity in a few weeks. This species matures slowly and is long lived, relative to other species. Vernal pool tadpole shrimp will continue to grow as long as the pools they occur in remain inundated, and in some instances can survive for six months or longer (Service 2003). The geographic range of vernal pool tadpole shrimp extends from Shasta County to northern Tulare County in

California's Central Valley, and in the central coast range from Solano County to Alameda County (Service 2003).

Valley Elderberry Longhorn Beetle

The Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is listed as threatened in accordance with the federal Endangered Species Act (Service 1980). The Valley elderberry longhorn beetle (VELB) is completely dependent on its host plant, elderberry (*Sambucus* species), which occurs in riparian and other woodland and scrub communities (Service 1999). Elderberry plants, located within the range of the beetle, with one or more stems measuring 1.0 inch or greater in diameter at ground level are considered to be habitat for the species (Service 1999). The adult flight season extends from late March through June. During that time the adults feed on foliage and perhaps flowers, mate, and females lay eggs on living elderberry plants (Barr 1991). The first instar larvae bore into live elderberry stems, where they develop for one to two years feeding on the pith. The fifth instar larvae create exit holes in the stems and then plug the holes and remain in the stems through pupation (Talley et al. 2007). The beetle's current distribution is patchy throughout California's Central Valley, from Shasta County to Kern County, and associated foothills up to an elevation of approximately 3,000 ft (Service 1999).

Valley elderberry longhorn beetle habitat has been documented within the Olympus Oaks/Olympus Pointe/Stoneridge Cavitt Ranch/Vista Oaks Open Space Preserve.

2.6.3 Fish

Chinook Salmon

Several evolutionary significant units (ESU) of Chinook salmon (*Oncorhynchus tshawytscha*) have special-status in California. Of these, two ESU's may occur within Roseville Open Space sites. The Central Valley spring-run Chinook salmon has been listed and protected as a threatened species under the California and Federal Endangered Species Acts, and the fall/late-fall Chinook salmon is currently considered a species of special concern by the California Department of Fish and Wildlife. Typical habitat in the Central Valley include freshwater rivers and streams that are tributaries to the Sacramento and San Joaquin River systems as well as the rivers themselves. They also travel through the Delta and San Francisco Bay on their way to the ocean. Spawning takes place in shallow riffles. Spawning runs begin in early fall and into the spring with a peak in activity during November and December.

Steelhead

The Central Valley steelhead (*Oncorhynchus mykiss*) is currently listed and protected as a threatened species under to the federal Endangered Species Act. The Central Valley steelhead's typical habitats are freshwater rivers and streams that are tributaries to the Sacramento and San Joaquin River systems. Runs occur from July through May with spawning runs from December through April. Spawning takes place in shallow swift moving riffles with small gravel and cobble as the primary substrate needed for spawning.

2.6.4 Amphibians

Western Spadefoot

The western spadefoot (*Spea hammondii*) is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a CDFW species of special concern. Necessary habitat components of the western spadefoot toad include suitable underground retreats and breeding ponds. Suitable breeding sites include temporary rain pools, such as vernal pools and seasonal wetlands, or pools within portions of intermittent drainages (Jennings and Hayes 1994). Spadefoot toads spend most of their adult life within underground burrows or other suitable refugia, such as rodent burrows. In California, western spadefoot toads are known to occur from the Redding area, Shasta County southward to northwestern Baja California, at elevations below 4,475 ft (Jennings and Hayes 1994).

2.6.5 Reptiles

Western Pond Turtle

The western pond turtle (*Clemmys marmorata marmorata*) is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a CDFG species of special concern. Western pond turtles occur in a variety of fresh and brackish water habitats including marshes, lakes, ponds, and slow moving streams (Jennings and Hayes 1994). This species is primarily aquatic; however, they typically leave aquatic habitats in the fall to reproduce and to overwinter (Jennings and Hayes 1994). Deep, still water with abundant emergent woody debris, overhanging vegetation, and rock outcrops is optimal for basking and thermoregulation. Although adults are habitat generalists, hatchlings and juveniles require specialized habitat for survival through the first few years. Hatchlings require shallow water habitat with relatively dense submergent or short emergent vegetation in which to forage.

Western pond turtles are typically active between March and November. Mating generally occurs during late April and early May and eggs are deposited between late April and early August (Jennings and Hayes 1994). Eggs are deposited within excavated nests in upland areas, with substrates that typically have high clay or silt fractions, usually in the vicinity of aquatic habitats (Jennings and Hayes 1994). The majority of nesting sites are located within 650 ft (200 m) of the aquatic habitat; however, sites have been documented as far as 1,310 ft (400 m) from the aquatic habitat.

2.6.6 Birds

Colonial Nesting Water Birds

The CNDDB tracks colonial nesting water bird rookery sites of great egret (*Ardea alba*) and great blue heron (*Ardea herodias*), among others. These species are not formally listed and protected pursuant to either state or federal Endangered Species Acts, but are of interest to CDFW. As such, colonial water bird rookery sites are subject to California Environmental Quality Act (CEQA) review. Colonial nesting waterbirds nest within riparian and other

woodland habitats typically near water. Foraging habitat includes a variety of upland and wetland habitats, such as annual grassland, vernal pools, and emergent marsh.

White-Tailed Kite

White-tailed kite (*Elanus leucurus*) is not listed pursuant to either the California or federal Endangered Species Acts; however, the species is fully protected pursuant to Section 3511 of the California Fish and Game Code. This species is a common resident in the Central Valley and the entire length of the California coast (Dunk 1995). In northern California, white-tailed kites typically nest from March through June. Nesting occurs in trees within riparian, oak woodland, savannah, and agricultural communities that are found in or near foraging areas such as open grasslands, meadows, farmlands, savannahs, and emergent wetlands.

Northern Harrier

The northern harrier (*Circus cyaneus*) is not listed pursuant to either the California or federal Endangered Species Acts; however, it is considered to be a species of special concern by the CDFG. This species is known to nest within the Central Valley, along the Pacific Coast, and in northeastern California. The northern harrier is a ground nesting species, and typically nests in emergent wetland/marsh, open grasslands, or savannah communities usually in areas with dense vegetation (Macwhirter and Bildstein 1996). Foraging occurs within a variety of open environments such as marshes, agricultural fields, and grasslands.

Cooper's Hawk

The Cooper's hawk (*Accipiter cooperii*) is not listed pursuant to either the California or federal Endangered Species Acts. However, active nest sites are currently tracked in the CNDDB by CDFW. Typical nesting and foraging habitats include riparian woodland, dense oak woodland, and other woodlands near water. Cooper's hawk nest throughout California from Siskiyou County to San Diego County, and includes the Central Valley (Rosenfield and Bielefeldt 2006).

Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species and are protected pursuant to the California Endangered Species Act. This species nests in North America (Canada, western United States, and Mexico) and typically winters from South America north to Mexico. However, a small population has been observed wintering in the Sacramento-San Joaquin River Delta (England et al. 1997). In California, the nesting season for Swainson's hawk ranges from mid-March to late August.

Swainson's hawks nest within tall trees in a variety of wooded communities including riparian, oak woodland, roadside landscape corridors, urban areas, and agricultural areas, among others. Foraging habitat includes open grassland, savannah, low-cover row crop fields, and livestock pastures. In the Central Valley, Swainson's hawks typically feed on a combination of California vole, California ground squirrel (*Spermophilus beecheyi*), ring-

necked pheasant (*Phasianus colchicus*), many passerine birds, and grasshoppers (*Melanopulus* species). Swainson's hawks are opportunistic foragers and will readily forage in association with agricultural mowing, harvesting, disking, and irrigating (Estep 1989). The removal of vegetative cover by such farming activities results in more readily available prey items for this species.

Ferruginous Hawk

Ferruginous hawks (*Buteo regalis*) are not listed pursuant to either the California or federal Endangered Species Acts. However, they are currently tracked in the CNDDB by CDFW. This species typically occurs in open environments and nests from Oregon to Canada, though nesting has recently been documented in Lassen County, California (Small 1994). For the remainder of the state, including the Central Valley, ferruginous hawk occurrences are restricted to the non-breeding season (September through April) (Small 1994). Winter foraging occurs within a variety of open communities including annual grasslands, agricultural areas, and savannahs. Ferruginous hawks do not nest in the region but may occasionally forage within grassland and other open vegetation communities on-site during winter or migration.

Merlin

The Merlin (*Falco columbarius*) is not listed pursuant to either the California or federal Endangered Species Acts, but is currently tracked in the CNDDB by CDFW. This falcon breeds in Canada and Alaska and occurs in California as a migrant and during the non-breeding season (August through April). Foraging habitat includes a wide range of open environments including seacoast estuaries, desert, open grasslands, and semi-open woodlands. Merlin do not nest in the region but may occasionally forage within grassland and woodland communities on-site during winter or migration.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a bird of conservation concern by the Service and a species of special concern by the CDFW. Burrowing owls inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. They can also inhabit developed areas such as golf courses, cemeteries, roadsides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds (Haug, et al.1993). This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel, but may also use man-made structures such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement (CDFG 1995). The breeding season extends from February 1 through August 31 (California Burrowing Owl Consortium 1993, CDFG 1995).

Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is not listed pursuant to either the California or federal Endangered Species Acts; but is considered a bird of conservation concern by the Service and a species of special concern by the CDFW. Loggerhead shrikes nest throughout

California except the northwestern corner, montane forests, and high deserts (Small 1994). Loggerhead shrikes nest in small trees and shrubs in open country with short vegetation such as pastures, old orchards, mowed roadsides, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands (Yosef 1996). The nesting season extends from March through June.

Lark Sparrow

The lark sparrow (*Chondestes grammacus*) is not listed and protected pursuant to either California or federal Endangered Species Acts. However, this species nest sites are tracked by CDFW in the CNDDB. Consequently, it is subject to review during the CEQA process. Lark sparrows can be found throughout California, from Siskiyou County south to Nevada County through the Central Valley and Coast Range to the Pacific Coast (Martin and Parrish 2000). They nest within a wide variety of communities including oak woodland, chaparral, and oak savannah, among others. Their nests are constructed on the ground, in small trees, or shrubs. The nesting season generally occurs from April through June.

Song Sparrow "Modesto" Population

The song sparrow (*Melospiza melodia*) is considered one of the most polytypic songbirds in North America (Miller 1956 as cited in Arcese 2002). The subspecies *Melospiza melodia heermanni* includes as synonyms *M. m. mailliardi* (the "Modesto song sparrow") and *M. m. cooperi* (Arcese 2002). The "Modesto song sparrow" is not listed and protected pursuant to either the California or federal Endangered Species Acts, but is considered a CDFW species of special concern. The subspecies *M. m. heermanni* can be found in central and southwestern California to northwestern Baja California (Arcese 2002). Song sparrows in this group may have slight morphological differences but they are genetically indistinguishable from each other. The "Modesto song sparrow" occurs in the Central Valley from Colusa County south to Stanislaus County, and east of the Suisun Marshes (Grinnell and Miller 1944). Nesting habitat includes riparian thickets and freshwater marsh communities, with nesting occurring from April through May.

Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a species of special concern by the CDFW. This colonial nesting species is distributed widely throughout the Central Valley, Coast Range, and into Oregon, Washington, Nevada, and Baja California (Beedy and Hamilton 1999). Tricolored blackbirds nest in colonies that can range from several pairs to several thousand pairs, depending on prey availability, the presence of predators, or level of human disturbance. This nomadic species typically nests in emergent marsh, riparian thickets, and blackberry brambles, usually with some nearby standing water or ground saturation. Open grassland and agricultural fields are typical foraging areas with nesting generally occurring from April through June.

2.6.7 Mammals

Yuma Myotis

The Yuma myotis (*Myotis yumanensis*) is not listed pursuant to either the California or federal Endangered Species Acts; however, this species is currently tracked by the CDFW in the CNDDB (CDFG 2003). Yuma myotis occurs throughout California in a variety of communities including riparian, arid scrublands and deserts, and forests. This species roosts in bridges, buildings, cliff crevices, caves, mines, and trees (WBWG 2005). Yuma myotis feed primarily on emergent aquatic insects and thus forage mainly over open water or adjacent riparian vegetation (Philpott 1996). This species can form large maternity colonies in late May early June.

Western Red Bat

The western bat (*Lasiurus blossevillii*) is not listed pursuant to either the California or federal Endangered Species Acts; however, this species is currently tracked by the CDFW in the CNDDB (CDFG 2003). In addition, the Western Bat Working Group has classified the western red bat in California as "imperiled or are at high risk of imperilment" (WBWG 2005). The western red bat is easily distinguished from other western bat species by its distinctive red coloration. This bat occurs from Shasta County to the Mexican border, west of the Sierra Nevada/Cascade crest and deserts, and is typically associated with forested and riparian communities. This solitary species roosts in the foliage of large shrubs and trees in communities bordering forests, rivers, cultivated fields, and urban areas. They feed on a variety of insects, usually foraging in or near riparian areas. This species is a year-round resident of California, however, they do migrate seasonally with the extent of these movements being poorly understood (Shump and Shump 1982, Philpott 1996).

Townsend's Big-Eared Bat

The Townsend's big-eared bat (*Corynorhinus townsendii*) is not listed pursuant to either the California or federal Endangered Species Acts; though it is designated as a species of special concern by the CDFW. In addition, the Western Bat Working Group has classified the Townsend's big-eared bat in California as "imperiled or are at high risk of imperilment" (WBWG 2005). Distribution of this species is strongly correlated with the availability of caves and cave-analogue roosting habitat, including abandoned mines. Townsend's big-eared bats have also been reported to utilize buildings, bridges, rock crevices, and hollow trees as roost sites (WBWG 2005). These bats are highly sensitive to human disturbance at roosting, maternity, and hibernacula sites. This species will roost alone or in groups of 15-100 individuals. They feed primarily on moths and prefer to forage along the edge of clumps of native vegetation. Townsend's big-eared bats are year-round residents in California, and even though they hibernate during the winter, will occasionally forage during the winter months (Kunz and Martin 1982, Philpott 1996).

Pallid Bat

The pallid bat (*Antrozous pallidus*) is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a CDFW species of special concern.

In addition, the Western Bat Working Group has classified the pallid bat in California as "imperiled or are at high risk of imperilment" (WBWG 2005). The pallid bat is a large buff-colored bat, with large ears and broad wings (Orr 1954). The pallid bat occurs in Oregon and Washington and throughout the southwestern United States, south into Mexico (Hermanson and O'Shea 1983). Pallid bats inhabit low elevation rocky arid deserts and canyonlands, shrub-steppe grasslands, oak woodlands, karst formations, and higher elevation coniferous forests (Philpott 1996, WBWG 2005). Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, and trees; and in various human structures such as bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings (WBWG 2005). Pallid bats are primarily insectivores and feed by gleaning prey items from the ground or from vegetation (Bell 1982).

3.0 PLAN IMPLEMENTATION

The following section outlines the implementation of the OSPOMP from how the plan is organized to regulatory approvals. Although it is the City's desire to undertake all of the Actions outlined in the OSPOMP, some items represent a higher level of management than can currently be funded. Plan implementation is dependent on funding availability as discussed in Section 4.6, Open Space Funding and Management Prioritization.

3.1 Plan Organization

To implement the OSPOMP, Goals and detailed Actions have been developed and are presented by chapter. These Goals and Actions were developed primarily to meet regulatory requirements and also to support the City's stated General Plan goals and objectives.

The Goals are statements that encompass broad concepts about the desired management of the City's Open Space. These Goals have either already been achieved and the City desires to maintain the current state or they have not yet been achieved and the City desires to work toward achieving them. The Actions are tasks that will be specifically undertaken to have a direct impact on maintaining or achieving the Goals of the OSPOMP. After an Action is defined in the table, the department or departments responsible for that Action are listed.

Due to the complexity and interwoven nature of open space issues, some Actions are listed twice. To the extent possible, the goals of the RCRMRP have been incorporated into the Goals and Actions outlined in this OSPOMP. It is the intention of the OSPOMP to work in conjunction with the RCRMRP as it is the City's management plan for riparian and adjacent wetland areas. If for any reason the OSPOMP contradicts the RCRMRP, the OSPOMP will be the guiding document within Open Space Preserve areas.

3.2 Open Space Management Areas and Applicability of the Plan

The purpose of this section is to define the difference between the two Open Space Management areas, Open Space Preserve and General Open Space, and how they are treated in this Plan. When both of these areas are being referenced together, the term Open Space is used. At this time, funding is not available to manage the General Open Space to the levels required for Open Space Preserve. As additional funding is obtained, the overall goal is to manage according to Habitat Management Unit (see Section 3.5) rather than Open Space Management Area.

3.2.1 Open Space Preserve

Open space considered by this OSPOMP as Open Space Preserve is land that was required to be set aside as part of a regulatory permitting action and is typically protected by either a Conservation Easement or Declaration of Covenants and Restrictions (Deed Restrictions). Within the City, Deed Restrictions are the primary method of protection. The Open Space Preserve areas are primarily vernal pool grassland or riparian corridors protected due to the presence of waters of the U.S. and/or Service-regulated endangered/threatened species (Endangered Species) habitat (Figure 3-1. *City of Roseville Open Space System*). Mitigation for impacts associated with the individual development projects was often constructed within the

Figure 3-1

associated Open Space Preserve. By the late 1990's management plans and funding for the management of these areas was common, but earlier Open Space Preserves were not required to have management plans or the associated funding.

For Open Space Preserve areas, the OSPOMP calls for a higher level of management and monitoring than the General Open Space due to the requirements previously in place and the funding available. For older Open Space Preserves that were not funded, the City intends to make every effort to monitor, manage, and maintain these areas according to the OSPOMP, but some activities will have to be postponed until funding is obtained (see Section 4.6). Due to the streamlining of Open Space management and reporting activities under the OSPOMP, the City expects that some funding for these areas will become available immediately. The City is open to pursuing additional sources of funding such as grants to augment existing funding sources.

3.2.2 General Open Space

The remainder of the Open Space in the City is General Open Space (see Figure 3-1). General Open Space areas owned by the City were set aside due to City policy or to meet Specific Plan or General Plan requirements and are not subject to any State or Federal permit related restrictions. Ultimately, the City would like to manage the City-owned General Open Space at the level of Open Space Preserve; however, there is currently little funding for that level of management, monitoring, and maintenance. Privately owned General Open Space is only included in this OSPOMP to allow for the maintenance the City occasionally conducts on private property within the General Open Space (see Section 3.4). Figure 2-1 and Appendix 9 show the General Open Space ownership throughout the City. General Open Space areas are not covered by Conservation Easements or Deed Restrictions.

3.3 Legal Protection

Several of the Open Space Preserve areas currently being managed by the City have Deed Restrictions that were recorded many years ago. As there are many different versions of Deed Restrictions recorded on the various Open Space Preserves, the City will record one Deed Restriction over the Open Space Preserve system so that it will have identical protection and consistent management. A sample of this Deed Restriction, as prepared specifically for the Highland Reserve South Preserve, is included as Appendix 10 – *OSPOMP Deed Restrictions*. This Deed Restriction will serve as the template for replacing Deed Restrictions for all existing preserve areas consolidated under this OSPOMP. Consistent with its current status, General Open Space will not be deed restricted.

To ensure consistency as the OSPOMP is implemented over time, any new Open Space Preserve dedicated to the City will use the Appendix 10 Deed Restriction as a preliminary template. It is likely that Agency requirements for the Deed Restrictions will continue to evolve over time. Consequently the Appendix 10 preliminary template will likely be modified consistent with agency requirements in place at the time prior to recordation as part of any new Open Space Preserve area dedication and/or addition to this OSPOMP. In anticipation of this, OSPOMP Appendix 11 has been reserved for this future Template Deed Restriction.

3.4 Transfers

The ownership of the Open Space Preserve areas, as well as the associated water and mineral rights, can be transferred. The Deed Restrictions outline the process for transfer (see Attachments 10 and 11). The transfer process outlined in the Deed Restrictions will apply to both the transfer of fee title and the transfer of water and mineral rights.

3.5 Management and Maintenance Responsibility of Privately Owned General Open Space Parcels

The City occasionally conducts maintenance activities within some private property in the General Open Space. These areas are typically located within the City's infill areas along Dry Creek. The City's current maintenance practices in these areas are limited to flood control maintenance, invasive plant removal, or wildfire prevention. The OSPOMP does not apply to private property beyond allowing these maintenance activities conducted by the City (not the landowner) to occur and including their coverage under the OSPOMP Biological Opinion (Biological Opinion) (see Section 3.7.1).

3.6 Habitat Management Units

Within the Open Space Preserve and General Open Space areas there are three Habitat Management Units. While some management, monitoring, and maintenance tasks transcend the three units, some are specific to the unit. Some units have unique challenges that must be specifically addressed. Therefore, actions associated with Open Space management will be addressed according to the Habitat Management Units. The units are: 1) vernal pool grassland (this includes other ephemeral wetlands such as seasonal wetlands that are not closely associated with a riparian zone), 2) riparian/non-vernal pool wetland, and 3) oak woodland/savannah.

The OSPOMP recognizes that often times the lines between the three Habitat Management Units are not easily defined. In these areas, the Open Space Manager will use his or her best judgment to determine the best management strategies to use. A general map of the habitat management units adapted from Placer County Conservation Plan Data (Placer County Planning Department 2005) is included as Figure 2-6 and will be further refined as funding becomes available.

3.7 Plan Implementation

The OSPOMP became effective the start of the fiscal year after it was approved by the Agencies, in July 2011. The OSPOMP governs all Open Space that the City managed at that time, along with the Open Space Preserves that have since been appended to the Plan. Open space preserves associated with future development will be similarly appended to this Plan. Once "appended" and Preserve ownership is transferred to the City, the City takes management responsibility (usually when the project is built out (as outlined in Chapter 5). At that time, these areas will be managed under the OSPOMP. Plan implementation is dependent on funding availability as discussed in Section 4.6, and for required maintenance of existing preserve areas as discussed in Section 3.5.

3.8 Regulatory Approvals

The OSPOMP was reviewed and approved by the Corps and the Service (Appendix 12 – *Corps OSPOMP Approval Letter) (*Appendix 13 - *USFWS approval/BO*). The City has considered, and in the future may obtain, a General Permit from the Corps under Section 404 of the Clean Water Act for activities requiring a permit that are outlined in the OSPOMP, as well as the RCRMRP. Several other permits would be required or obtained at the same time. A strategy for consolidation of the permitting process was outlined in association with the RCRMRP (see Appendix 4). At this time, any of the activities outlined in this Plan or the RCRMRP requiring a regulatory permit or authorization, other than those dealing solely with endangered and threatened species authorized in the Biological Opinion (see Section 3.7.1), must be permitted separately. If additional impacts to the covered activities are anticipated for the OSPOMP, an amendment to the Biological Opinion must be obtained.

3.8.1 Open Space Management Plan Biological Opinion

A Biological Opinion was issued for the OSPOMP to allow the City to conduct key management and maintenance activities that may have adverse impacts on several Endangered Species regulated by the Service (Appendix 13 – *OSPOMP Biological Opinion*). Specifically, these species are vernal pool fairy shrimp (*Branchinecta lynchi*), Conservancy fairy shrimp (*Branchinecta conservatio*), vernal pool tadpole shrimp (*Lepidurus packardi*), and the VELB (*Desmocerus californicus dimorphus*). If the City desires to conduct routine activities that have the potential to impact anadromous fish, then a separate biological opinion would need to be obtained from the National Oceanic Atmospheric Administration (NOAA Fisheries)/National Marine Fisheries Service (NMFS).

Examples of activities covered under the Biological Opinion are restoring a vernal pool impacted by illegal off-road vehicle use, or pruning elderberry shrubs growing adjacent to bike trails. During each year of the Biological Opinion's ten-year term, the following potential impacts are covered:

Listed Vernal Pool Invertebrates

Temporary direct impacts for the restoration of up to eight acres of listed vernal pool invertebrate habitat during the lifetime of the Biological Opinion, with a maximum of 2 acres in any one year, including:

- Minor grading (using a skip loader or asphalt floater) or hand work required to restore or remediate habitat resulting from human disturbance, emergency firebreaks, altered hydrology, sedimentation, or poor function (created habitat only).
- Mowing and vacuuming no more than 25% of the total area of any selected vernal pool for material to act as inoculum used in the revegetation of restored pools.

Indirect impacts including up to six additional acres during the lifetime of the Biological Opinion, with a maximum of 3 acres in any one year, of listed vernal pool invertebrate habitat for City facility maintenance, replacement, or modification that causes ground disturbance within 250 feet of listed vernal pool invertebrate habitat (e.g., replacement of a

utility pole, re-paving a bike trail, etc.). This does not apply to the installation of new City facilities although such facilities may be addressed in a separate biological opinion.

The human disturbance referenced above refers to such activities as dirt-bike jumps constructed in vernal pools and tire ruts from unauthorized vehicle use. Examples of altered hydrology include stormwater runoff from outfalls or construction sites and excess irrigation. Other potential causes of altered hydrology include children digging ditches to divert drainages and beaver dams. Poorly functioning created wetlands are those that are not inundated for a period sufficient to support appropriate vernal pool or seasonal wetland plant compositions (either too long or too short of an inundation period). Remediation of these poorly-functioning pools may include revegetation of pools after altered hydrology is corrected, making the wetland basins deeper, or creating wetland swales to allow overflow from other wetlands to augment direct precipitation.

Valley Elderberry Longhorn Beetle

Trimming (no further than needed) of up 100 elderberry shrubs during the lifetime of the Biological Opinion, with a maximum of ten elderberry shrubs in any one year, for Open Space and City facility maintenance and replacement purposes and restoration projects under the RCRMRP. No more than 80 stems will be trimmed per year on the ten shrubs, not to exceed the size classes below:

- 50 stems measuring between one and three inches in diameter at ground level.
- 20 stems between three inches and five inches in diameter at ground level.
- 10 stems five inches in diameter or greater at ground level.

No more than half an elderberry shrub can be removed by combining the allowed stem removals. Stems under one inch in diameter at ground level are not considered VELB habitat and may be trimmed in any number, but only as needed to meet the purpose of the maintenance or restoration project.

Indirect impacts to up to an additional 200 shrubs, with a maximum of 20 shrubs per year, for City facility maintenance, replacement, or modification, that causes ground disturbance within 100 feet of an elderberry shrub. This does not apply to the installation of new City facilities, although such facilities maybe addressed in a separate Biological Opinion.

All maintenance activities outlined in the OSPOMP are not likely to affect vernal pool branchiopods or Valley elderberry longhorn beetle, with the exception of elderberry shrub trimming, restoration of vandalism within vernal pools, bike trail maintenance and replacement, and repair and replacement of utilities. The Actions listed throughout the OSPOMP under each Goal section that are designed to minimize impacts to these habitats, must be followed.

In addition, the Biological Opinion lists the following Minimization and Avoidance Measures that are associated with the activities outlined in Table 3-1. These activities were reviewed during consultation on the Biological Opinion to determine which were likely and not likely to adversely affect endangered species.

Table 3-1

General Minimization and Avoidance Measures

1. **Exclusion Zone Fencing/Flagging:** The City will mark the boundaries of environmentally sensitive exclusion zones and sensitive habitat features that are to be avoided (wetlands, vernal pools, elderberry shrubs, etc.) before and during maintenance with highly visible flagging or fencing to prevent impacts from vehicles. All maintenance personnel will be required to conduct work activities within the defined area only.

2. **Work Zone:** Heavy equipment, vehicles, and maintenance work will be confined to existing or designated access roads, road shoulders, and disturbed or designated areas. Ground disturbance and vegetation removal will be confined to the minimum extent necessary to complete the work.

3. **Maintenance Monitoring:** The City will retain a Service-approved biologist(s) or trained City staff member to be on-site during maintenance activities that will result in direct impacts.

4. **Erosion and Dust Control:** The City will implement erosion, sediment, material stockpile, and dust control BMPs on-site to minimize the potential for fill or runoff to enter wetlands or waterways. A biological monitor will be retained as necessary to monitor and inspect the installation and removal of erosion/sediment control devices if applicable.

5. **Spill Prevention/Containment and Refueling Precautions:** The City will maintain all maintenance equipment to prevent leaks of fuels, lubricants, or other fluids into waterways. Appropriate materials will be on-site to prevent and manage accidental spills. City will take appropriate precaution when handling and/or storing chemicals (e.g., fuel and hydraulic fluid) near waterways and wetlands, and any and all applicable laws and regulations will be followed. Service and refueling procedures will take place outside open space areas or at least 100 feet from waterways or in an upland area at least 100 feet from wetland boundaries to prevent spills from entering waterways or wetlands.

6. **Trash Cleanup:** The City will properly contain and remove all trash and waste items generated by maintenance activities.

7. **Post-Maintenance Clean-up:** Following maintenance, each maintenance site will be returned to as good or better condition as it was prior to maintenance, including removal of all maintenance debris.

8. **Staging Areas:** The City will locate all staging areas a minimum of 250 feet from elderberries and habitat for vernal pool crustaceans.

Vernal Pool Crustacean Minimization and Avoidance Measures

9. **Work Window:** The City will perform ground disturbing work within 250 feet of vernal pool habitat or work that will result in direct impacts authorized by the Biological Opinion during the dry season (roughly, May 15–October 15).

10. **Worker Awareness Training:** A Service-approved biologist or trained City staff member will brief maintenance crews about the status of listed vernal pool invertebrates and the need to protect the wetlands they inhabit, including the possible penalties for not complying with these requirements. The briefing will include instruction on how to identify vernal pools and other seasonal wetlands that may provide habitat.

11. **Maintenance Access:** Avoid driving equipment through vernal pools or other wetland habitat while accessing the Open Space for maintenance activities. Stay on bike trials/maintenance roads whenever possible.

Valley Elderberry Longhorn Beetle Avoidance And Minimization Measures

12. **Pre-Maintenance Surveys:** The City will conduct pre-maintenance surveys for elderberries prior to the start of maintenance.

13. **Worker Awareness Training:** A Service-approved biologist or trained City staff member will brief work crews about the status of the beetle and the need to protect its elderberry host plant, including the possible penalties for not complying with these requirements. The briefing will include instruction on how to identify the shrub.

14. **Elderberry Shrub Avoidance:** Where feasible, within maintenance areas the City will maintain a 100-foot buffer around existing elderberry shrubs with stems over 1 inch in diameter at ground height.

15. **Elderberry Trimming:** If possible, leave any trimmed elderberry stems greater than one inch in diameter close to the trimmed shrub rather than removing them from the site. Trimming of elderberry shrubs will be done between November and mid-February, the shrub's dormant period, when possible. Elderberries will not be trimmed during the beetle's emergent period, March 15 through June 15.

16. **Maintenance Near/Trimming Elderberry Shrubs:** A buffer of 100 feet surrounding elderberry shrubs will be established whenever possible during maintenance activities. In areas where maintenance will take place within 100 feet of an elderberry shrub, erosion control and revegetation measures will be implemented where necessary. If mowing is required to reduce fire hazard within 100 feet of an elderberry shrub, mowing activities would comply with the work window requirements of number 17 below. Care will be taken to avoid damaging existing elderberry shrubs with mowing equipment.

17. **Work Window:** Maintenance within 100 feet of any elderberry shrubs will avoid the beetle's emergent period which is March 15 through June 15.

3.9 Regular Plan Updates

The City intends to conduct an update of the OSPOMP every five years as funding allows. As these updates were not initially required as part of the management plans being replaced by the OSPOMP, these updates are not required and funding for this action must be identified. However, the City is committed to a current and applicable management plan and will make a good faith effort to update the OSPOMP every five years. At minimum, these updates will include updating the OSPOMP graphics to show the most recent Open Space additions;

updating the monitoring, management, and maintenance practices based on monitoring data collection, staff feedback, and research indicating that a change in procedures would be beneficial; updating Goals and Actions as tasks are completed; and updating the department or staff responsibility designations for OSPOMP tasks, if they have changed.

Changes in monitoring, management, and maintenance actions within the Open Space Preserve or maintenance actions effecting Endangered Species habitat within the General Open Space will require amending the OSPOMP and approval of the Service and Corps (see Section 3.9). If an amendment is not required when the OSPOMP is updated (e.g., a change in monitoring frequency of General Open Space) the City will not need to contact the Service or Corps.

3.10 Amending the Plan or the Biological Opinion

It is likely that at some point an amendment or revision to the OSPOMP will be needed. The majority of these changes will be adaptive in nature. See Section 3.10 for more information on adaptive management associated with the OSPOMP. As more information is gathered during the various aspects of open space monitoring, management, and maintenance, a change in the way the City carries out these tasks may be beneficial. It is anticipated that the Biological Opinion for the OSPOMP will be re-issued every 10 years. Therefore, it would be ideal to complete a five-year update of the OSPOMP in advance of the date when the Biological Opinion would be re-issued. The City could then determine if an amendment was required. Any changes could be discussed with Service and Corps staff and, if appropriate, could be included in the subsequent Biological Opinion.

If the City needs to amend the OSPOMP and the change does not require an amendment to the Biological Opinion (i.e., it will not increase potential take) the procedure will be as follows:

1. The City contacts the Agencies to discuss the anticipated changes and follows up by submitting the desired changes to the OSPOMP in redline form.
2. The Agencies have 60 days to provide the City comments on the changes.
3. The City discusses the revisions with the Agencies, makes any agreed-upon changes, and resubmits the final version of the changes.
4. The Agencies have an additional 30 days to provide the City with written approval of the agreed-upon changes.
5. Upon receipt of the written approval, the City may implement the changes.

If the City needs to amend the OSPOMP and the change requires an amendment to the Biological Opinion, the City recognizes there will likely be additional effort on the part of the Service. The Service will make a good faith effort to approve the agreed-upon changes along with an amendment to the Biological Opinion within 120 days after the changes are submitted for consideration.

The OSPOMP also includes criteria for inclusion of Open Space Preserves and General Open Space established in the future. In order to include new Open Space Preserves or new General Open Space as part of the Biological Opinion, the City will submit a request for inclusion to the Service which includes, at a minimum: the location of the new area; a map of the new area; the acreage of vernal pool crustaceans within the new area; information on the presence of elderberry shrubs within the new area; any documentation of listed species within the new

area; a commitment that the new area will be managed in accordance with the OSPOMP, and the Service File Number of any associated biological opinion. Based on this information, the Service may re-initiate Section 7 Consultation to provide incidental take coverage for additional Open Space Preserves or General Open Space areas that propose to append to the City's OSPOMP. Re-initiation of Section 7 consultation may also be required if major changes or updates are made to the OSPOMP, new species are listed or critical habitat is designated and is affected by plan activities, and/or if new information reveals new or different effects to listed species or designated critical habitat that were not previously considered.

3.11 Adaptive Management

The long-term management of the City's Open Space will include elements of the U.S. Department of the Interior Adaptive Management technical guide (Williams, et al 2007, Appendix 14). Adaptive Management guidelines will be implemented to achieve the stated OSPOMP Goals.

In summary, Adaptive Management is an iterative process that provides for consensus building among stakeholders, clearly defining goals, identifying management actions to achieve those goals, monitoring/data collection, and determination of alternative management actions given the monitoring results.

For example, using the adaptive management strategy, the long-term success (or sustainability) of vernal pool fairy shrimp populations within the Open Space can be addressed. Identified stakeholders would be the Service, Corps, and the City. The initial management activity is the preservation of natural or constructed vernal pools under the OSPOMP.

Using the principals of adaptive management, the success (sustainability) of fairy shrimp within the City's Open Space would be considered the goal. The objective (i.e., the presence of the shrimp), would be determined during the annual monitoring. If fairy shrimp are detected, it is safe to assume that the current management activities should continue. However, if fairy shrimp are not detected, it is imperative under the principals of adaptive management to have the means to develop an alternative management strategy to attain the goal, which is to sustain fairy shrimp within the preserve. An alternative strategy could include an additional inoculation of seed-bearing soil from a known shrimp-occupied pool within a pre-defined area, preferably nearby. If, in the process of monitoring, the constructed basin is found to not support "typical" vernal pool hydrology, an alternate management strategy could include additional soil analysis and excavation in a different location. As previously stated, this entire process is designed to be iterative and requires collaboration at each step.

A determining factor in the implementation of adaptive management is the funding available to carry out management strategies. The City will work to implement adaptive management strategies as they are identified and as the existing funding allows.

3.12 Climate Change

The potential effects of climate change have come to the forefront in recent years. As this OSPOMP is a plan intended to be implemented in perpetuity, climate change may have an impact on the vegetation communities present in the City, as well as the species supported by them. Open Space management issues that are associated with climate change would be addressed via the adaptive management process described above.

4.0 OPEN SPACE ADMINISTRATION AND FUNDING

4.1 Administrative Goals

Open space management is a complex task that requires significant coordination of financial resources, staff, and often times consultants and contractors. In addition, accepting a new Open Space area is a multifaceted decision. The Goals and Actions outlined in Table 4-1. *Administrative and Funding Goals and Actions* are intended to ensure that decisions are made consistently and that coordination between City departments, as well as within the departments is efficient.

4.2 Open Space Administration - Personnel and Responsibilities

The roles outlined below for Open Space Manager, Urban Forester, and Monitoring Biologist make up the primary personnel that will oversee, monitor, and coordinate the maintenance of the Open Space. They are intended to work together as a team to accomplish the management of the Open Space by exchanging information, problem solving, and generally having a proactive relationship. The City may employ third parties for management, monitoring, and reporting functions.

4.2.1 Open Space Manager

The role of the Open Space Manager is to coordinate and oversee the management and maintenance of the City's Open Space according to this Plan and to be the primary contact for Agency staff. The responsibilities of the Open Space Manager include:

- Applying for and implementing grants and other budgetary actions to advance the OSPOMP and adopted City policies;
- coordinating various departments with Open Space interests and responsibilities;
- ensuring City operations compliment regional watershed planning efforts and comply with federal and state regulations and permits;
- implementing all requirements of the OSPOMP, including monitoring/reporting, adaptive management, and Agency coordination as needed;
- administering contracts;
- managing the Tree Mitigation Fund including oversight of the funding committee and large scale Mitigation Planting Projects;
- educating the public about the value of our natural resources and how to preserve them;
- overseeing a regional approach to invasive weed eradication programs within the City's Open Space and streams;
- coordinating responses to customer/citizen inquires/complaints;
- researching, evaluating, and preparing statistical, financial and demographic data for staff reports, studies, surveys, and analyses;
- preparing administrative studies on organizational and administrative procedures; evaluating existing and proposed administrative policies, practices and techniques; recommending new policies and procedures;

Table 4-1

- acting as a liaison with other departments, governmental agencies, community groups and the general public concerning the coordination of activities related to department or City operations;
- providing interdepartmental coordination for resource management programs and their implementation requiring the balancing of public recreation opportunities with good land stewardship;
- participating in budget preparation and administration; preparing cost estimates for budget recommendation;
- submitting justification for budget items; monitoring and controlling expenditures; preparing requests for proposals, agreements and contracts;
- monitoring quality assurance for programs and facilities; monitoring and processing grant applications for federal and state funding;
- investigating complaints and recommend corrective action as necessary to resolve complaints;
- reviewing construction activities in and adjacent to the Open Space and Preserve areas.

4.2.2 City Urban Forester

The role of the City urban forester is to manage and maintain a healthy urban forest. Responsibilities of the City urban forester that relate to this Plan include:

- Inspecting trees on public property to verify location and determine condition, required maintenance, and suitability for preservation;
- inspecting plant materials to ensure quality; making recommendations and developing plans for the street tree planting program;
- overseeing the development of a city-wide urban forest program to include: an inventory of all public trees, a Heritage Tree Ordinance, tree replacement and regeneration guidelines, care and maintenance of City street and Open Space trees, volunteer tree planting programs, Arbor Day promotions, acorn plantings, wildflower seed plantings, Eagle Scout projects, etc.;
- supervising the Parks Maintenance Tree/Streambed Division;
- administering contracts; serving as a liaison for the City and other public agencies, City departments and the Community;
- implementing and evaluating maintenance activities in area of assignment; evaluate operations and activities of assigned responsibilities;
- recommending improvements and modifications;
- organizing and scheduling tree plantings, streambed cleaning and tree maintenance activities;
- coordinating and cooperating with school officials and community groups regarding program offerings and coordination of services;
- maintaining records and developing reports concerning new or ongoing programs and program effectiveness.

4.3 Use of Qualified Personnel/Monitoring Biologist

If the Open Space Manager does not have the appropriately trained staff to carry out any of the specialized tasks required by the OSPOMP, the City may retain professional biologists, botanists, or other types of specialists (collectively the Qualified Personnel, including the Monitoring

Biologist) to conduct specialized tasks. The Monitoring Biologist shall be familiar with California flora and fauna, and in particular, shall have knowledge of oak woodlands, grassland, and vernal pool species and their ecology.

4.3.1 Qualified Personnel/Monitoring Biologist Potential Responsibilities

Overall, duties of the Qualified Personnel may include but are not limited to:

- Wetland function and erosion monitoring tasks;
- evaluating the accumulation of dead vegetative matter (thatch) and recommending removal, if needed;
- evaluating grazing practices and recommending changes, if needed;
- evaluating the presence of invasive plants and recommending management, if needed;
- conducting surveys and data collection within the Open Space Preserve system and preparing reports required by this Plan;
- evaluating site conditions and recommending remedial action to the Open Space Manager;
- assisting in reviewing or planning restoration activities, use of the Open Space for education, or other tasks such as grant proposals;
- working with the Open Space Manager and Agency staff.

4.4 Changes in Personnel

If timing allows, the outgoing and incoming personnel will meet and the former will advise the latter of trends, problem areas, and any administrative difficulties.

4.5 Administrative Monitoring

The Goal for administrative monitoring is to assess the effectiveness of staff communication, organization, and responsibilities (see Table 4-1). The City will assess staff resources on an on-going basis to determine the effectiveness of the Open Space Division. It is anticipated an annual assessment will take place each year during the annual budget process which begins in January.

4.6 Open Space Funding and Management Prioritization

4.6.1 Funding Goals

The Goals for funding include using existing funding efficiently, maximizing the benefit to the City's Open Space, and acquiring additional funding (e.g., grants) to increase the resources available to the City to implement the OSPOMP.

4.6.2 Funding Availability and Summary

When available, funding for the long-term management, maintenance, and monitoring of the Open Space Preserve areas is provided by either Community Facilities Districts (CFDs), Lighting and Landscape Districts (LLDs), endowments, or a combination thereof (see Table 1-1). In some cases, the intent is to use a CFD or LLD to fund an endowment fund, which when fully

funded will provide a perpetual finance mechanism. When long-term management and maintenance of Open Space is provided for by a CFD or LLD, funds for all tasks (these may include parks maintenance or landscape maintenance, etc.) are collected by the City. A subset of the overall annual assessment is used to fund the perpetual maintenance of the Open Space Preserve system. An estimate of the per-year costs of implementing the now superseded plans for each of the Open Space Preserves was initially determined using the PAR software. The City currently uses the City of Roseville Open Space Maintenance and Manage Plan. This analysis was used as a basis for determining the amount of the annual CFD assessment required to adequately maintain the Open Space Preserve in perpetuity. The total funding available for long-term management and maintenance of the Open Space Preserve areas is approximately $350,000 per year, depending on fund performance.

In addition, the City allocates monies from its General Fund for General Open Space maintenance, creek maintenance, and tree maintenance, etc. Typical uses of these funds are for vehicles, equipment, and contract services for the City's Urban Forest and General Open Space areas. Equipment, vehicles, and other uses of these funds help to augment the budget for the Open Space Preserve system.

4.6.3 Contingency Funds

As part of the funding for the management of the Open Space Preserve a number of the CFD's, LLD's, and endowments have contingency funds. These funds are in place for emergencies such as vandalism of fencing, signage, or other unanticipated needs.

4.6.4 Grant Funding

A number of goals and actions have been identified within this OSPOMP that are not currently funded. The bulk of the increased funding to cover these will not actually come from a new funding source, but rather from increased efficiency. The OSPOMP allows for vernal pool monitoring within all Open Space Preserves in the City of Roseville with a standardized monitoring plan, and submittal of one report to regulatory agencies, as opposed to preparation of reports for each individual preserve. It is hoped that this increase in efficiency will free up sufficient funding to cover these additional goals and actions. In addition, grants will be pursued to attempt to close any remaining funding gap.

4.6.5 Required Tasks and Desired Actions

The City will manage the Open Space Preserve areas in accordance with the OSPOMP based upon the existing funding sources. The funding sources and amounts for the individual Open Space Preserves were previously agreed upon by the involved agencies during project permitting. Collectively, this funding will be use to implement the tasks required by this Plan (Table 4-2. *Required (Funded) Tasks*). These tasks are similar to the Actions, but are designed to maximize the currently available funding and to define what is currently required. When funding becomes available to implement the Actions, then the table of required tasks will no longer be needed. These tasks were developed by reviewing the requirements of the management plans for the individual Open Space Preserves and developing a single set of tasks that could be funded across the City's Open Space Preserve system. For example, some areas

were set aside before monitoring was required, but will now be monitored. In other areas, 10% of the vernal pools will be monitored in detail annually, whereas 20% of the vernal pools

Table 4-2

were monitored previously. These changes allow for a consistent monitoring and management strategy across the City without a significant increase in the required funding. Ultimately, the Action associated with vernal pool monitoring sets a goal of 20% monitoring across the City.

It is the City's desire to implement the remainder of the OSPOMP Actions (e.g., monitoring General Open Space in the same manner as Open Space Preserve) to meet the stated Goals. This will require additional funding that the City does not currently have. While the City is open to pursuing additional funding to implement the OSPOMP, there is no obligation to do so.

4.6.6 Management Prioritization for Required Actions

In the event of extenuating circumstances that require management beyond what was reasonably anticipated within the budget for the required tasks, the City may be obligated to defer taking action until funding is available. The Open Space Manager will coordinate with the Agencies to discuss task priorities and funding availability to determine which tasks will be implemented. In general, tasks are prioritized in this order: 1) tasks required by a local, state, or federal Agency; 2) tasks necessary to maintain or enhance habitat quality; and 3) tasks that monitor resources, particularly if past monitoring has not shown downward trends. Equipment and materials necessary to implement priority tasks will also be considered priorities.

5.0 ADDING NEW OPEN SPACE PRESERVES AND MANAGEMENT PRIOR TO TRANSFER

The OSPOMP is intended to be the guiding document for the management of both existing City Open Space and future Open Space dedicated through the development process or through habitat conservation efforts. One of the purposes of the OSPOMP is consistent management of the City's Open Space Preserves and the elimination of the need for the preparation of separate management plans for each new preserve area proposed within the City. Implementation of the OSPOMP will minimize Agency and City staff time, which in turn, will result in a shortened timeline for Open Space Preserve related project approvals.

5.1 Development Project Proponent Responsibilities

Once appended to the OSPOMP, the project proponent is responsible for Preserve management, monitoring and reporting as outlined in this chapter. The City takes management and maintenance responsibility following property dedication as discussed in Section 5.3 below. The project proponent is responsible for accomplishing or providing the following in order to be appended to the OSPOMP:

- A copy of the final 404 permit and any related Biological Opinion(s).
- Identification of the final Open Space Preserve boundary approved by the Corps and/or Service.
- Dedication of a 50-foot transition zone (which will be considered part of the Open Space Preserve), adjacent to the development (Figure 5-1. *Typical 50-Foot Transition Zone*). This zone will not be required on adjacent property (i.e., the project proponent does not have to acquire property to dedicate) or at the City's discretion, where it is not needed (e.g., along a road that bisects a preserve). Landscape easement areas must occur outside of the transition zone. The 50-foot transition zone may contain public utility easements. All waters of the U.S. within the 50-foot transition zone must be considered directly impacted (except adjacent to road crossings over linear water features when appropriate). Indirect impacts to habitat adjacent to the 50-foot transition zone assessed by the Agencies must be mitigated by the project proponent along with the direct impacts to habitat within the 50-foot transition zone. Mitigation of these impacts will allow the project proponent to install and the City to maintain the following within the 50-foot transition zone in perpetuity:
    - Outfalls and constructed swales/ditches (see Appendix 15 – *Outfall and Drainage Swale Typical Details*)
    - Water quality best management practices (BMPs) including water quality basins and maintenance access ramps to the basins (Appendix 16 – *Water Quality BMP and Maintenance Ramp Typical Details*)
    - Bike trails/interpretive trails
    - Slopes up to the full 50 feet
    - Utility lines/utility line crossings
    - Benches
    - Trash cans
    - Preserve fencing, open space signs, and interpretive signs

Figure 5-1

- Mowing (includes fire breaks)
- Identification of and mitigation for (direct and indirect impacts assessed by the Agencies) the installation and maintenance in perpetuity of allowed uses within the Open Space Preserve outside of the 50-foot transition zone as proposed by the project including but not limited to: bridges, utility lines, maintenance roads, bike trails, flood control facilities, etc. The project proponent will provide digital Geographic Information Systems (GIS) mapping showing these structures. In addition to mapping, the project proponent will also provide documentation to show that any impacts that may result from infrastructure constructed within the Open Space will have been permitted by the appropriate Agencies.
- Digital and hard copy Open Space Preserve maps prepared in a format prescribed by the City for incorporation into the OSPOMP.
- Digital GIS mapping/data associated with the biological resources within the Open Space Preserve (e.g., wetland delineation, habitat mapping, and known special-status species occurrences).
- Recordation of Deed Restrictions approved by the City (a template Deed Restriction is contained in Appendix 11).
- Identification of a perpetual funding mechanism (endowment, Lighting and Landscape District, or Community Facilities District) for management, maintenance, and monitoring required by the Goals and Actions identified in the OSPOMP in the amount indicated by an accompanying PAR analysis approved by the City, Corps and/or Service. Due to the extra time needed to patrol Open Space, the budget must include provisions for a "fair share" portion of safety and security staff.
- Management and maintenance of the Open Space Preserve from the time that construction adjacent (within 250 feet) to the Open Space Preserve begins (earthmoving), or as required by the Corps and/or Service, to the time that the Open Space Preserve is transferred to the City for management.
- In addition, when adding a new Open Space Preserve that requires an amendment to the Plan, the project proponent must provide the City a list of special permit requirements for management and funding to amend the Plan. (This could include special grazing practices, placement or maintenance of utilities, reduction or increase of buffer areas etc.).

The project proponent may also be responsible for payment of a one-time fee to the City to append to the OSPOMP. In addition, the project proponent will be responsible for reimbursement of the City's administrative costs for appending an Open Space Preserve to the OSPOMP. These items will be negotiated through the City's Planning Entitlement and Development Agreement process.

5.2 Management During Adjacent Project Construction

Past experience has shown that biological resources in Open Spaces are vulnerable to disturbance during construction (including new private development or modifications to improvements within existing Open Space undertaken by the City such as a sewer line connection). In general, the minimum area necessary for construction and access will be used. Construction limits will be set that do not allow fill within any preserved waters of the U.S. and habitat for Endangered Species unless permitted by the Agencies. To avoid impacts to the Open Space and the protected resources, the OSPOMP requires the following protective measures be taken during project construction.

5.2.1 Improvement Plans

The City will require that improvement plans for projects adjacent to Open Space show the boundaries and label the Open Space areas. This will allow those working adjacent to these protected areas to be aware of the presence of the Open Space.

5.2.2 Pre-Construction Meetings

Pre-construction meetings for construction occurring adjacent to (within 250 feet) or within Open Space will address the presence of the Open Space, the sensitive habitats present, minimization of disturbance to the Open Space, and the Plan requirements if preserved habitat within the Open Space is impacted. See Sections 8.3.2 and 8.3.3. City inspectors can also conduct a post-construction inspection to determine if post-construction remediation is needed.

5.2.3 Biological Monitor

A qualified biologist will be retained by the project proponent to monitor construction activities occurring within 250 feet of adjacent Open Space Preserve unless there is clearly not foreseeable impact to Open Space habitats. For example, if existing development or a roadway is within 250 feet of Open Space Preserve and all construction will occur within the roadway or on the non-Preserve side of the roadway or other development, a biological monitor would not be required.

When a biological monitor is required for construction activities, the monitoring biologist will be on-site on the first day of ground disturbing activities during the initiation of each construction phase (e.g., start of the installation of a new sewer line). Prior to ground disturbance, the monitor will lead a pre-construction meeting as discussed in Section 5.2.2. After that, the construction monitor will make regular daily visits to the site to observe construction activities (minimum twice a day). A journal should be kept of observations made during the construction monitoring. The construction monitor will immediately report to the Open Space Manager and appropriate project manager or inspector any activities that might result in un-permitted impacts to the Open Space areas. If work is stopped due to construction activities within, or affecting an Open Space Preserve, the Corps and Service will be notified within 72 hours.

For construction projects occurring within or adjacent to General Open Space areas, the need for a monitoring biologist will be based on the individual project's State and Federal permit requirements. Monitoring frequency and reporting requirements for construction projects

occurring within or adjacent to the General Open Space areas will be as prescribed within the project's plans and specifications.

5.2.4 Grading Within the Open Space

Grading for new development projects will likely include grading necessary to install roads, pads, bike trails, utility lines, and constructed wetlands, constructed swales/ditches, outfalls, etc. within and along Open Space boundaries. Projects that include these activities within Open Space will have obtained permits as needed from the Corps, Service, and City prior to initiation of construction activities. The only exception would be for outfalls and constructed swales/ditches which are discussed in Section 9.1.4 and activities that occur within the 50-foot transition zone where direct and indirect impacts will have already been identified and mitigated for in accordance with the development project's 404 permit (see Section 5.1). Grading will not disturb or modify existing waters of the U.S. unless the appropriate regulatory permits are obtained. Portions of the Open Space areas that are graded will be hydroseeded with native seed as described in Section 5.2.9 to re-establish vegetation.

5.2.5 Temporary Construction Fencing

Prior to construction adjacent to or within any Open Space Preserve area, high visibility temporary construction fencing will be installed (Figure 5-2. *Temporary Construction Fencing*).

Temporary construction fencing will be installed along all Open Space boundaries that border the new development. The fencing can be installed by project phase if the project is large (such as a specific plan) and there are Open Space Preserve areas that are not adjacent to the phase under construction.

The temporary construction fencing will be installed either along the Open Space Preserve boundary or at the inner edge of the 50-foot transition zone. It will be installed at the Open Space Preserve boundary if no work will occur within the 50-foot transition zone and it will be installed at the inner edge of the 50-foot transition zone if work will occur within the 50-foot transition zone (see Figure 5-2). Open Space boundaries that are contiguous with other Open Space areas need not be temporarily fenced.

Additional temporary construction fencing will be installed to protect sensitive resources and features based on the City's Grading Ordinance, Tree Preservation Ordinance, and State and Federal permit requirements when improvements such as bike trails, outfalls, etc., are installed. This will be a requirement for Open Space within new developments or for City projects within or adjacent to existing Open Space.

The temporary fencing will be maintained in good condition until permanent fencing is installed. The only exception would be if a project or phase within a project (such as specific plans) stops for greater than six months due to economic or other reasons. In this case, maintenance of the temporary fencing is not required as long as construction has stopped completely and there is fencing at the greater project or phase boundary that would exclude motor vehicles.

Upon completion of construction of each project or phase, this temporary fencing must be replaced by the project proponent with permanent fencing, except where the Open Space

Figure 5-2

Preserve is contiguous with the Open Space of neighboring projects (Section 8.2.4) or is not required to prevent access to the Open Space.

5.2.6 Flagging Preserved Wetlands Adjacent to Construction Within the Open Space

If construction is occurring within Open Space, prior to installation of temporary construction fencing denoting the limits of construction, a professional wetland biologist will flag the preserved waters of the U.S. within 25 feet of the fencing. These brightly colored pin-flags will allow workers to be aware of the location of the protected habitat.

5.2.7 Stormwater Pollution Prevention

Stormwater BMPs prevent pollutant discharges into the Open Space and are required by the State Water Resources Control Board for any project over one acre in size. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared and implemented to control sediment and erosion during construction. The SWPPP shall follow the City's adopted Design and Construction Standards and Stormwater Quality BMP Guidance Manual for Construction. The plan will include measures to minimize runoff from dust control and dewatering (e.g., creek crossings). Oil, soil amendments (e.g., lime) or other chemicals used in construction activities shall not be allowed to contaminate site runoff that discharges to the Open Space. For all construction related activities in and adjacent to the Open Space, perimeter BMPs shall be installed prior to ground disturbance regardless of the time of year. These measures will be maintained to ensure the construction site is prepared prior to the onset of any storm (i.e., straw wattle, silt fencing, etc.) as a minimum sediment control measure at all times (year round).

5.2.8 Temporary Stormwater Discharge

During construction, but prior to the completion of stormwater outfalls and associated swales, it may be necessary to discharge treated stormwater through the Open Space and into creeks and drainages. These discharge points will be located so that they do not result in flows being discharged into vernal pools and avoid inundating oak trees. This may require the installation of swales with appropriate erosion prevention measures to properly direct flows and ensure that erosion does not take place at any location along the swale or at the point of discharge.

5.2.9 Use of Native Grasses in Post Construction Revegetation

When construction work disturbs soil within the Open Space, all seed used to revegetate must be native to California, preferably ecotypes from western Placer or surrounding counties. Appendix 17 provides guidelines for seed mixes for different revegetation situations. Appendix 17 also provides information on local native grass seed companies.

5.2.10 Trash Removal and Post Construction Clean-Up

During construction, paper trash, food wrappers, and other trash often blows into Open Space from adjacent construction sites. The entity constructing adjacent to or within the Open Space will remove trash blown into the Open Space from the construction on a daily basis. After construction is complete and the temporary construction fencing has been replaced by

permanent fencing, temporary fencing and posts will be removed from the Open Space. Additionally, when disturbed areas adjacent to or within the Open Space (e.g., bike trail construction) have become revegetated and construction is complete, all temporary erosion control materials (e.g., straw bales, straw wattles and stakes, silt fencing) will be removed from the Open Space and discarded appropriately.

5.2.11 Construction Impacts/Post-Construction Remediation

Although steps are taken to avoid it, construction activities within the Open Space or accidental construction impacts (including discharges of sediment laden stormwater) may require post-construction restoration. Post-construction restoration means, for example, hydroseeding areas of the Open Space areas that were disturbed by equipment, restoring the original grade where the intent was not to alter it (e.g., smoothing out tire ruts or tracks), cleaning up construction debris, restoring accidentally impacted waters of the U.S. that were intended to be preserved, and generally reverting the area back to pre-construction conditions. A list of native grass species and other locally native plants that can be used in revegetation/restoration is included in this plan as Appendix 20 and included in the Parks Construction Standards.

Bonding and monitoring is required as outlined in Sections 8.3.2 and 8.3.3 if waters of the U.S. within City-owned Open Space are impacted. Impacts that occur within a project's specific Open Space Preserve prior to dedication to the City will be reported by the project proponent to the Agencies according to the OSPOMP. Restoration and monitoring will be conducted depending on the impact type, as outlined in Section 8.3 or as required by the Agencies.

5.3 Dedication Process for Open Space Preserves

Timing considerations related to accepting a new Open Space Preserve will be handled by the City on a case by case basis. In general, City acceptance of a new Open Space Preserve is contingent on the project proponent fulfilling all open space related provisions of the Development Agreement. In addition, prior to accepting a new Open Space Preserve, the City will require that the project proponent carry out Open Space Preserve management and reporting functions during any permit-required habitat creation success monitoring period.

The City takes management and maintenance responsibility for Open Space once adjacent development is complete and the project proponent has completed the transfer process/obligations outlined in this section. The Parks, Recreation & Libraries Department procedures for dedicating an Open Space Preserve to the City is outlined below. Other departments in the City may have additional requirements as outlined in the project's improvement plans and/or Development Agreement.

Prior to dedication, the Open Space Manager or other designated City staff member will conduct a walk-through with the Open Space owner. The purpose of this walk-through will be to:

- Ensure installation of improvements related to the Open Space Preserve as required by the Agencies and the City such as fencing, signage, etc.
- Ensure that cattle (grazing) fencing has been installed or the existing grazing fencing has been repaired or upgraded, if required.
- Ensure trash and debris has been removed from the Open Space Preserve.

- Ensure that any areas of erosion, sedimentation, or vandalism resulting from surrounding development have been corrected.
- Ensure that the project proponent conducted appropriate habitat maintenance activities prior to turn over to the City (e.g., invasive plant removal) such that the City is able to accept the Open Space Preserve in good condition.

Additionally, these items/documents are required:

- A title report less than six months old.
- Grant deed with legal description and map.
- Phase 1 Site Assessment for hazardous materials.
- Sign-off from the Corps or City Planning Department that on-site wetland mitigation (Corps) or oak tree mitigation (City Planning Department) has met its success criteria and the mitigation obligation has been met (if applicable, for the individual parcel).
- Letter summarizing and demonstrating the fulfillment of all federal permit conditions (i.e., Corps permit and Service biological opinion, if applicable), including the above mitigation sign-off. This letter must be submitted to the Corps for their comment. A 30-day waiting period for any Corps comments must pass before the City will accept the Open Space.
- Completion of re-initiation/consultation on the OSPOMP's Biological Opinion (if needed). See Section 3.10 for more information.

Upon dedication to the City, the Open Space Preserve will be managed by the City according to the OSPOMP.

5.4 City Acquired General Open Space or Open Space Additions Due to Zoning Change

The City may choose to accept a dedication of additional General Open Space not associated with a development project, may choose to change the zoning of City property to open space from another designation, or may actively purchase land within or outside the City to be preserved as General Open Space. In these cases, the General Open Space may be managed according to the OSPOMP without any need to notice or receive approval from the Corps or Service.

6.0 BIOLOGICAL RESOURCE MONITORING AND SURVEYS

Monitoring is an important first step in open space management. Monitoring provides necessary information the Open Space Manger regarding the efficacy of existing management practices and provides insight regarding actions that can be taken to improve management of the City's biological resources. The biological resource Goals and Actions are outlined in Tables 6-1 and 6-2. These tables include the Goals and Actions specific to the periodic biological resource surveys and inventories that span Habitat Management Units and the annual monitoring goals separated by Habitat Management Units. As discussed in Section 4.6.4, not all Actions are currently funded but will be pursued as funding is identified.

To provide a record of the schedule and requirements for Open Space Preserve monitoring prior to the adoption of the OSPOMP, please see Appendix 21 – *Previous Open Space Preserve Monitoring Schedule and Requirements*. Additionally, when funding is available, a set of consistent detailed field maps will be created. Until then, the existing field maps can be found at Appendix 20.

6.1 Biological Resource Surveys

The City should conduct inventories and surveys within the City's Open Space to establish the presence and location of native species and their habitat, to document their continued survival, and to inform and gauge the effectiveness of management efforts. None of these surveys are currently funded (surveys for listed vernal pool invertebrates are addressed in Section 6.3). Therefore, the City will use surveys by others, such as the annual anadromous salmonid surveys conducted by the Dry Creek Conservancy, if they are available. As surveys move forward, the City will develop and update City plant and animal lists (Appendices 21 and 22). As mapping is completed, the maps will be appended to the OSPOMP (Appendix 23).

6.1.1 Requesting Authorization and Reporting

Surveys for special-status species may require a permit from the Service, NMFS/NOAA Fisheries, and/or CDFW, as well as reports detailing the survey results.

6.1.2 Data Management

A significant amount of data will be collected during the various surveys listed above. Spatial data will be collected using a sub-meter accurate professional grade Global Positioning System (GPS) unit. The raw GPS files will be differentially corrected and archived. They will then be converted into an industry standard GIS format for use. Data will be stored using a standard file structure and will be regularly backed up.

6.1.3 Actions, Responsible Parties, and Timing

Table 6-3 summarizes the actions, responsible parties, and timing for conducting the biological resource inventories and surveys.

Table 6-1 (Page 1 of 3)

Table 6-1 (Page 2 of 3)

Table 6-1 (Page 3 of 3)

Table 6-2

Table 6-3. Biological Resource Survey and Inventory Summary

Action Summary	Responsible Party	Timing	Action Funding Status
Conduct City-wide delineation of Waters of the U.S.	Open Space Manager/Monitoring Biologist/GIS Analyst	Every 10 years during April – May.	Not yet funded.
Prepare a detailed vegetation community map.	Open Space Manager/Monitoring Biologist/GIS Analyst	Update every 10 years once developed.	Not yet funded.
Prepare a map showing high quality, marginal quality, and degraded native communities.	Open Space Manager/Monitoring Biologist/GIS Analyst	Every 10 years during May – June.	Not yet funded.
Oak tree canopy coverage map.	Urban Forester/Monitoring Biologist/GIS Analyst	Every 10 years during May – June.	Not yet funded.
Create consistent field maps.	Open Space Manager/Monitoring Biologist/GIS Analyst	Every 5 years once developed.	Not yet funded.
Oak tree inventory.	Urban Forester/Tree Crew/Contractor/ Monitoring Biologist/GIS Analyst	Every 10 years during May – July.	Not yet funded.
Map special-status species habitat and occurrences.	Monitoring Biologist/GIS Analyst	Update with new occurrences annually once developed.	Not yet funded.
Conduct surveys for special-status plants.	Monitoring Biologist	Every five years in potential habitat that is not occupied and annually for known occurrences during April – June as appropriate for the species.	Not yet funded.
Conduct surveys for Swainson's hawks nesting and burrowing owls.	Monitoring Biologist	Every five years in potential habitat that is not known to be occupied and annually for known nests/burrows during April – August as appropriate for the species.	Not yet funded.
Conduct surveys for Valley elderberry longhorn beetles.	Monitoring Biologist	Every five years in potential habitat April – June.	Not yet funded.
Conduct annual counts of anadromous salmonids.	Currently, Dry Creek Conservancy	Annually during each run.	Not yet funded.
Conduct general bird surveys.	Monitoring Biologist/Birding Groups	Quarterly.	Not yet funded.
Conduct amphibian and reptile surveys.	Monitoring Biologist	Every five years in potential habitat that is not known to be occupied and annually for special-status species for known occurrences – survey timing as appropriate for the species.	Not yet funded.

Table 6-3. Biological Resource Survey and Inventory Summary (Continued)			
Actions	**Responsible Party**	**Timing**	**Action Funding Status**
Maintain an inventory/map of beaver dam locations.	Monitoring Biologist/Open Space Manager/Creek Crew	Update annually once developed.	Incidental observances during other monitoring.
Map private Open Space Preserves.	Open Space Manager/Monitoring Biologist/GIS Analyst	Update with OSPOMP every 5 years.	Not yet funded.

6.2 Wetland and Riparian Monitoring

The RCRMRP outlines monitoring for water quality, vegetation, stream hydrology and geomorphology, wildlife, public use, restoration, and reference reach monitoring. See RCRMRP (see Appendix 4) Section 7.6. The section below outlines basic biological monitoring of riparian and non-vernal pool wetland areas presented in previous operations and management plans. As the RCRMRP is implemented and monitoring is conducted, that monitoring can supersede the monitoring outlined below as appropriate. Until such time, monitoring of riparian and non-vernal pool wetland areas will be conducted according to the OSPOMP.

The Goal for monitoring Wetland and Riparian areas is to survey twice a year, once in spring (March) and once in summer (June or July). During each monitoring visit, the perimeter of each area will be covered, as well as meandering transects through its interior. The surveys are more particularly described in further detail below. Regardless of the specific purpose of a monitoring visit, the Monitoring Biologist will make note of any potential management or maintenance issues. For example, location of trash will be noted during monitoring if it is observed.

6.2.1 Monitoring Methods

General Riparian and Wetland Condition

As the specific biological monitoring outlined in this section is conducted, the general condition of the riparian areas and non-vernal pool wetlands will be noted, including changes in vegetation species composition, and the overall success of any enhancement and restoration efforts. This will include incidental observations of human-caused disturbances, trash or fencing repair needs, and problematic erosion or beaver dams. Items such as trash and fencing repair will also be specifically monitored during the General Inspections as outlined in Section 8.4.

Invasive Plant Monitoring

The presence of recently established invasive plant species (including problematic native species), as well as the expansion of existing populations, will be assessed each year during the summer monitoring visit by walking meandering transects through the riparian and wetland areas. The results will be used to update the City-wide invasive plant map. These

species will be managed/removed according to the Invasive Plant Management Plan (Appendix 24).

6.2.2 Monitoring Timeline

General habitat conditions will be assessed in March and invasive plants and general habitat conditions will be monitored in June or July. Please refer to the required tasks/monitoring calendar located in Table 4-3 for the currently funded/required monitoring schedule.

6.2.3 Actions, Responsible Parties, and Timing

The following table summarizes the actions, responsible parties, and timing for riparian and wetland management and monitoring.

Table 6-4. Riparian and Wetland Management and Monitoring Summary

Action Summary	Responsible Party	Timing	Action Funding Status
Conduct invasive plant monitoring (June-July only) and assess general habitat condition.	Monitoring Biologist	March and June – July	OSP – Yes, funding available for March visit. GOS – Not yet funded.
Provide management recommendations, if needed.	Monitoring Biologist	As soon as needed based upon the urgency of the recommendation.	Yes.
Implement recommended management actions.	Open Space Manager/Urban Forester	When funding is available.	OSP and GOS – Yes, some funding is available.

6.3 Vernal Pool Grassland Monitoring

The Goal for vernal pool grassland monitoring is four times per year. During each monitoring visit, the perimeter of the area will be covered, as well as meandering transects through its interior. The surveys are more particularly described below. Regardless of the specific purpose of a monitoring visit, the Monitoring Biologist will make notes regarding any potential management or maintenance issues. For example, fencing in need of repair will be noted during floristic monitoring if it is observed.

Monitoring for grazing is addressed in the Grazing Plan (see Appendix 25) and monitoring for special-status species populations other than listed vernal pool invertebrates is addressed in Section 6.1.

6.3.1 Monitoring Methods

Previously, the various operations and management plans varied significantly on what was required for vernal pool monitoring. Some plans required no specific vernal pool monitoring

while others required different amounts of monitoring (see Appendix 19). Of the plans that required monitoring, some plans required that all vernal pools be monitored (when only a few were present), while others only required a percentage be monitored (typically 5%-20%). To obtain data on vernal pools throughout the City rather than just those in a subset of the Open Space Preserve areas, the OSPOMP calls for monitoring within 20% of the vernal pools (regardless of if they are created/restored or naturally occurring) preserved in Open Space.

At this time, funding is available to monitor 10% of the vernal pools throughout the Open Space Preserve system. Until such time as additional funding can be identified, 10% of the vernal pools within the Open Space Preserve system will be monitored. Funding is currently available to survey these pools for vernal pool branchiopods twice annually, consistent with the OSPOMP goals. The vernal pools that are monitored for vernal pool branchiopods each year will be the same as those surveyed for hydrology and floristics.

When identifying the vernal pools to be monitored, all of the vernal pools throughout the City will be stratified by size class and pool type (created vs. preserved) and then randomly selected, such that the monitored pools represent the full range of size classes present within the Open Space Preserve system, and approximately half of the vernal pools are natural and approximately half are created, with no greater than 10% difference. A minimum of five vernal pools will be monitored within each Open Space Preserve each year. In general, the same group of vernal pools will be monitored every year, which will allow maintenance and management effectiveness tracking. However, the monitored pools will be reviewed on an annual basis to determine if there is a reason to change the pools being sampled. As a result, the vernal pools being monitored can be expected to change slowly over time.

An alternative method to the one presented here for assessing vernal pool vegetation is currently in development (Barbour et. al. 2007, Appendix 26). The methodology is still in the process of being refined for monitoring purposes. When complete, it should be considered for incorporation into the OSPOMP as appropriate and as funding allows.

General Vernal Pool Grassland Condition

When the specific biological monitoring outlined in this section is conducted, the general condition of the vernal pool grassland will be noted. This will include incidental observances of human-caused disturbances and other issues such as trash or fencing repair needs. The latter will be specifically monitored during the General Inspections as outlined in Section 8.4.

Hydrologic Monitoring

The purpose of hydrologic monitoring is to detect changes in the function of the monitored vernal pools resulting from changes in hydrology. The hydrologic integrity of the preserved vernal pools is of primary importance in maintaining plant species endemic to vernal pools, as well as populations of listed vernal pool invertebrates. Vernal pool hydrology will be assessed twice yearly to observe if there are vernal pools not holding water in the wet season (i.e., they are too dry) and if there are vernal pools wet into the summer (i.e., they are too wet). Data collected within the vernal pools selected for monitoring will include maximum potential water depth, maximum current water depth, and percent inundation.

When appropriate, management recommendations regarding vernal pool hydrology will be made. A sample data sheet for hydrologic monitoring has been included in Appendix 27.

Vegetation Monitoring

Species composition within the vernal pools, as well as the surrounding upland grassland will be monitored each year.

Vernal Pools

The purpose of spring floristic monitoring is to detect changes in the dominant species present in the preserved vernal pools selected for monitoring (see Section 6.3.1). It will be noted if the vernal pool is created/restored or naturally occurring. A sample data sheet for monitoring has been included in Appendix 27. Each vernal pool's areal vegetative cover will be recorded. The dominant species present in each vernal pool will be recorded to determine if the pool is dominated by vernal pool plant species. Plant species having 25% relative vegetative cover or greater will be considered dominant.

Of these species, at least 80% should be classified as "vernal pool indicators" or "vernal pool associates" as described in *"California Vernal Pool Assessment Preliminary Report"* (CDFG 1998) (Appendix 28). It should be recognized that some vernal pools do not meet this 80% threshold naturally and that the threshold is in place to indicate that a further assessment of the vernal pool may be warranted. If the 80% threshold is not met for any individual vernal pool and it does not appear that the pool was historically a marginal pool, then notes regarding possible causes for changes in species distribution and recommendations regarding remedial action, if any, will be made.

If none of the plant species in the pool have 25% relative cover or greater, then the plant species with 10% relative cover or greater will be considered dominant and will be analyzed in the same manner.

In addition, a comprehensive list of all species present within the pool will also be recorded.

Upland Grassland

A minimum of 30 upland grassland plots will be established throughout the City's vernal pool grassland. The locations of the initial 30 plots are shown on Figure 6-1. *Grassland Monitoring Plots*. These plots were established by selecting 20 random locations across the City and then purposefully selecting ten additional points to monitor known native grass populations, areas where invasive weeds are prevalent, or other desired areas. Additional plots within the City may be established.

A six-foot-tall, four-inch by four-inch wood post will be installed at the southeast corner of each plot. The location of this post will also be recorded using a professional grade

Figure 6-1

sub-meter accurate GPS unit. The plots will be a three by three meter square extending to the north and the west from the post.

The plots will be monitored annually in late April (may be adjusted to ensure good data as needed). Data recorded for each plot will include a species list for the plot, the total cover of vegetation for the plot, the absolute cover of each species listed, and trends noted such as an increase in the presence of invasive plants. Relative cover will be calculated. A data sheet for grassland monitoring has been included in Appendix 27.

Thatch Monitoring

The Monitoring Biologist will make an annual determination of thatch accumulation using Wildland Solutions Residual Dry Matter monitoring guide used in grazing monitoring (Appendix 29) at the same locations data is gathered for upland grassland monitoring. A data sheet has been included in Appendix 27. If excess thatch is present in the uplands (residual dry matter (RDM) exceeding 1,200 lbs./ac.) or marginal grass species are observed encroaching into the vernal pools during vernal pool floristic monitoring, the Monitoring Biologist will work with the Open Space Manager to determine the best removal practice for each particular site. Several management practices can be used to address this thatch including controlled burning, mowing, or grazing as described in Section 7.3.2.

Invasive Plant Monitoring

The presence of recently established invasive plant species (including problematic species), as well as the expansion of existing populations will be assessed each year in June or July by walking meandering transects through the vernal pool grassland and using data collected earlier in the year during upland grassland monitoring. The results will be used to update the City-wide invasive plant map. These species will be managed/removed according to the Invasive Plant Management Plan (see Appendix 24).

Listed Vernal Pool Invertebrate Monitoring

Several listed vernal pool invertebrates have the potential to occur within the City's vernal pool grassland. The following addresses surveys for these species. All other special-status species surveys are described in Section 6.1.

The purpose of surveying for listed vernal pool invertebrates is to track changes in occurrences and populations. A sample data sheet is included in Appendix 27 for this purpose. A Service permitted biologist (the Monitoring Biologist) will survey the selected pools (see Section 6.3.1) for listed vernal pool invertebrates twice during each wet season. The methods will follow the *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods* (Service 1996, Guidelines, Appendix 30), except that the biweekly sampling frequency called for in the Guidelines will not be followed. Two visits to the monitored pools will occur each season. A 90-day report of findings will be submitted to the Service each year as required by the Monitoring Biologist's federal permit.

6.3.2 Monitoring Timeline

Vernal pool grassland monitoring occurs four times per year, but timing is somewhat dependent on the timing and amount of rainfall. Therefore, survey timing will be adjusted based on annual conditions to obtain the best data. Wet season hydrology and vernal pool invertebrate monitoring will occur twice during January through March. Vernal pool vegetation and upland grassland monitoring will occur in April or May. Invasive plant monitoring and dry season hydrology monitoring will occur in June or July. Thatch monitoring will occur in August or September.

Due to current funding constraints, the vegetation monitoring/invasive plants/dry season hydrology site visits may be combined until funding is identified to allow for separate invasive species surveys. In some years this may result in the potential for less-than-optimal data for invasive plants and dry season hydrology. However, these surveys have been combined in the past and most problem areas have been identified promptly. Please refer to the required tasks/monitoring calendar located in Table 4-3 for the currently funded/required monitoring schedule.

6.3.3 Actions, Responsible Parties, and Timing

Table 6-5 summarizes the actions, responsible parties and timing for vernal pool grassland management and monitoring.

Table 6-5. Vernal Pool Monitoring Summary

Action Summary	Responsible Party	Timing	Action Funding Status
Conduct wet season hydrology and invertebrate monitoring	Monitoring Biologist	During December – February.	OSP, Yes – 10% twice a year. Twenty percent twice a year not yet funded.
Conduct vernal pool and upland grassland vegetation monitoring.	Monitoring Biologist	During April – May.	OSP, Yes – 10% of VPs once a year. Twenty percent of VPs twice a year and upland grassland plot monitoring is not yet funded.
Conduct invasive species monitoring.	Monitoring Biologist	During June – July.	OSP, Yes – incidental observances during other monitoring. Full surveys not yet funded.
Conduct dry season hydrology monitoring.	Monitoring Biologist	During May – July.	OSP, Yes – only 10% twice a year. Twenty percent twice a year not yet funded.
Conduct thatch monitoring.	Monitoring Biologist	During August – September.	OSP, Yes – incidental observances during other monitoring except for required grazed areas. See Section 7.3.2. Full surveys not yet funded.

Table 6-5. Vernal Pool Monitoring Summary (Continued)

Action Summary	Responsible Party	Timing	Action Funding Status
Provide management recommendations if needed.	Monitoring Biologist	As soon as needed based upon the urgency of the recommendation.	Yes.
Implement recommended management actions.	Open Space Manager	When funding is available.	OSP and GOS – Yes, some funding is available.

6.4 Oak Woodland/Savannah Monitoring

The Goal for monitoring oak woodland/savannah is monitoring three times each year. During each monitoring visit, the perimeter of the area will be covered, as well as meandering transects through its interior. The surveys are more particularly described below. Regardless of the specific purpose of a monitoring visit, the Monitoring Biologist will make notes regarding any potential management or maintenance issues. For example, downed signs will be noted during oak woodland/savannah plot monitoring if they are observed.

6.4.1 Monitoring Methods

General Oak Woodland/Savannah Condition

As the specific biological monitoring outlined in this section is conducted, the general condition of the oak woodland/savannah will be noted. This will include incidental observances of human-caused disturbances, other issues such as trash or fencing repair needs, and problematic run-off or beaver dams. Items such as trash and fencing repair will also be specifically monitored during the General Inspections as outlined in Section 8.4.

Vegetation Monitoring

Understory Grassland Monitoring

Monitoring methods for the grassland understory within the oak woodland/savannah plots will be the same as for upland grassland (see Section 6.3.1). An additional 20 grassland monitoring plots within oak woodland/savannah monitoring plots will be monitored as shown on Figure 6-2. *Oak Woodland/Savannah Monitoring Plots*. The grassland plots are located within the southeast corner of each of the oak woodland/savannah monitoring plots discussed below.

Oak Tree Health and Composition Monitoring

The Monitoring Biologist will subjectively monitor oak tree health annually by walking meandering transects through the oak woodland/savannah areas. Additionally, 20 half-hectare (50m x 100m) representative oak woodland/savannah plots will be established throughout the City. The locations of the initial 20 plots are shown on Figure 6-2. These plots were established by selecting ten random locations across the City and then purposefully selecting ten additional points to monitor locations where regeneration has

Figure 6-2

been poor, areas where invasive plants are prevalent, or other desired areas. Additional points within the City may be established.

A six-foot-tall, four-inch by four-inch wood post will be installed at the four corners of each plot. The location of these posts will also be recorded using a professional grade sub-meter accurate GPS unit.

The location, species, diameter at breast height (DBH) (if applicable), height estimate, and health of each oak tree greater than 3' in height will be recorded within each plot every five years. Any non-native trees and shrubs will also be noted. These data will be used to track changes in oak tree health, species composition, and recruitment over time. A data sheet for oak woodland/savannah monitoring has been included in Appendix 27.

Thatch Monitoring

The Monitoring Biologist will make an annual determination of thatch accumulation by using the Residual Dry Matter monitoring guide used in grazing monitoring (Appendix 29) at same locations data is gathered for understory grassland monitoring. If excess thatch is present and appears to be inhibiting the natural recruitment of oak trees, represents a fire hazard, or is in excess of 1,200 lbs./ac., the Monitoring Biologist will work with the Open Space Manager to determine the best removal practice for each particular site. Several management practices can be used to address this thatch including controlled burning, mowing, or grazing as described in Section 7.3.2.

Invasive Plant Monitoring

The presence of recently established invasive plant species (including problematic native species), as well as the expansion of existing populations will be assessed each year by walking meandering transects through the oak woodland/savannah. In addition, data on understory grassland species, will be collected within each of the 20 oak woodland/savannah monitoring plots. The results will be used to update the City-wide invasive plant map. These species will be managed/removed according to the Invasive Plant Management Plan (Appendix 24).

6.4.2 Monitoring Timeline

Grassland plot monitoring will occur in April or May. Invasive plants, habitat condition, and oak woodland/savannah plot monitoring will occur in June or July. Thatch monitoring will occur in August or September. Please refer to the required tasks/monitoring calendar located in Table 4-3 for the currently funded/required monitoring schedule.

6.4.3 Actions, Responsible Parties, and Timing

Table 6-6 summarizes the actions, responsible parties and timing for oak woodland/savannah monitoring.

Table 6-6. Oak Woodland/Savannah Monitoring Summary

Action Summary	Responsible Party	Timing	Action Funding Status
Grassland plot monitoring.	Monitoring Biologist	During April – May.	Not yet funded.
Conduct invasive species monitoring and assess general habitat condition.	Monitoring Biologist	During May – July.	OSP, Yes – some funding available. GSP - Not yet funded.
Oak woodland/savannah plot monitoring.	Monitoring Biologist/Urban Forester	Every five years during June – July.	Not yet funded.
Conduct thatch monitoring.	Monitoring Biologist	During August – September	OSP, Yes – incidental observances during other monitoring. Full surveys not yet funded. GOS – Not yet funded.
Provide management recommendations if needed.	Monitoring Biologist	As soon as needed based upon the urgency of the recommendation.	Yes.
Implement recommended management actions.	Open Space Manager/Urban Forester	When funding is available.	OSP and GOS – Yes, some funding is available.

7.0 BIOLOGICAL RESOURCE MANAGEMENT

The management of biological resources within the City's Open Space will occur according to Habitat Management Unit. Therefore, this chapter is organized by Habitat Management Unit with the associated descriptions of management tasks.

7.1 Biological Resource Management Goals

The biological resource management Goals and Actions (Table 7-1) for the OSPOMP took into account the goals and objectives stated in the City of Roseville's General Plan (see Appendix 3). They were expanded and modified as needed to meet the requirements of the Corps and Service for Open Space Preserve areas. The primary goals and objectives of the General Plan used in the development of the OSPOMP goals were: the protection of special-status species habitat, encouraging the continued survival of these species, protecting and enhancing a connected system of open space, and limiting access where sensitive habitats are present while maximizing compatible uses such as recreation where possible.

To ensure that these goals are met, the Open Space Manager will develop an Annual Work Plan at the beginning of each monitoring year. During development of this plan, the Open Space Manager will use the data collected during the prior year(s) to prioritize survey and management goals and actions for the coming year.

7.2 Riparian and Wetland Management

The Goals and Actions outlined in Table 7-1 are intended to be representative of, and complementary to, the goals found in the RCRMRP. Many were incorporated directly from the RCRMRP. The RCRMRP is intended to be the guiding document for creek, riparian, and adjacent wetland habitat management and restoration (including priorities) under the OSPOMP. However, funding is not available for the full implementation of the RCRMRP. Therefore, the following management will be undertaken in the wetland and riparian areas until funding is available for the full implementation of the RCRMRP.

7.2.1 Riparian and Wetland Enhancement and Restoration

Enhancement and restoration are key to the long-term success of the preserved wetland and riparian areas. In general, the planned enhancement and restoration activities are addressed in the Goals and Actions Table 7-1. Specific projects will need to be developed, implemented, and monitored according to target results (e.g., 90% cover of native wetland plants). The Open Space Manager will coordinate with the City's Floodplain Manager for any project that takes place within the City's floodplain. Detailed hydraulic modeling may be required to address impacts to the 100 year and 200 year water surface elevation due to any planned restoration activities within the floodplain. The priority areas and techniques for creek restoration are identified in the RCRMRP. If possible, the City will use locally propagated plant species in restoration. Restoration activities that involve work in wetlands or waters of the U.S. will require a permit under Section 404 of the Clean Water Act, and potentially a Streambed Alteration Agreement from CDFW. Nationwide Permit (NWP) 27, Stream and Wetland Restoration Activities, is available from the Corps for these types of activities.

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An example of a restoration activity that does not require Corps approval, is planting acorns or oak seedlings in the riparian zone. An example of a restoration activity that would require Corps approval is the re-contouring of a creek bank and planting it with riparian species to stabilize an area of erosion.

The Open Space Manager will not need to notify the Corps if the planned restoration activities do not require a permit from the Corps; however, these activities should be reviewed by the Monitoring Biologist or other technical experts and described in the Annual Report (see Section 12.1). If there is a question regarding whether a restoration activity will require Corps approval, the Open Space Manager should seek guidance from the Corps.

7.2.2 Invasive Plant Management

Within riparian and wetland areas, management of invasive plants will occur within the upland areas as well as within the aquatic habitat, and can include the management of native species that tend to dominate or form monocultures such as cattail (*Typha* spp.). Use of herbicides to control non-native invasive plant species may occur within all Waters of the U.S. except for vernal pools. A 60' buffer must be maintained around all vernal pools and elderberry shrubs when spraying for non-native invasive species. Please see Appendix 24 for more details on invasive plant management.

7.2.3 Removal of Native Riparian Trees

Native riparian trees that present a fire hazard, a safety hazard (primarily flooding potential), or have a disease that has the potential to spread rapidly and have a significant impact, may be pruned or removed. The City's Urban Forester or qualified member of the City's Creek Crew will inspect the tree to confirm that removal or pruning is necessary prior to initiation of work. In addition, removal will be consistent with the City's CDFW SAA (see Section 1.2.4, Appendix 6). A nesting raptor survey by a qualified biologist is required before working in or removing a tree during nesting season (February 1st through August 30th). If a tree has died, is not a threat to other trees, and is not a hazard, removal is not required. It is important to retain declining, hollow, dead, or fallen trees as they have a significant value to wildlife as in-stream habitat, for refuge, nesting, and food caching.

7.2.4 Beavers and Beaver Dams

Reduction of predator populations due to development in the region has led to an increase in beavers throughout the City. When beaver dams become established in riparian and wetland areas, the Open Space Manager should determine if it is best to: leave the beavers alone as they are a natural part of the ecosystem, install beaver baffling devices and allow the beavers to remain, breach the beaver dam, or removal of the beavers if appropriate. Beaver dams in riparian areas can adversely impact riparian vegetation and cause flooding, killing trees adjacent to the creek or stream. The Open Space Manager will consult with the Public Works Director who will make the ultimate determination if a beaver dam is causing a potential flood risk. Care should be taken to weigh the effects of the beaver's presence as beaver dams can also result in positive impacts to streamside habitat. The Open Space Manager will follow the Beaver Management Policy (Appendix 31) when determining the best course of action.

7.2.5 Special-Status Species Management

There are a number of special-status species that occur or have the potential to occur within the riparian and non-vernal pool wetland areas. These include Swainson's hawk and Valley elderberry longhorn beetle, among others. By managing for the overall health of the riparian and wetland communities, the resultant effects upon local special-status species should be positive. Individual surveys for special-status species will be conducted as outlined in Table 6-1. Results from these surveys can be used to inform management actions.

7.2.6 Actions, Responsible Parties, and Timing

The following table summarizes the actions, responsible parties, and timing for riparian and wetland management.

Table 7-2. Riparian and Wetland Management Summary

Action Summary	Responsible Party	Timing	Action Funding Status
Conduct enhancement and restoration.	Open Space Manager	Various activities throughout the year.	Not yet funded.
Conduct invasive species management.	Open Space Manager/Creek Crews	Species-specific timing.	Some management funded within OSP only.
Remove native riparian trees, if needed.	Creek Crew/Urban Forester	As needed.	Funded.
Manage beavers and beaver dams	Creek Crew	May occur throughout the year.	Limited funding for problematic beavers/dams in OSP and GOS.
Conduct special-status species management.	Open Space Manager	May occur throughout the year.	Some management funded within OSP only.

7.3 Vernal Pool Grassland Management

The management of vernal pool grassland will involve enhancement and restoration, thatch management, invasive species management, and preservation of appropriate vernal pool hydrology. Each is described below.

7.3.1 Vernal Pool Grassland Enhancement and Restoration

In general, the enhancement and restoration activities are addressed in the Goals and Actions in Table 7-1. Specific enhancement and restoration projects will be developed, implemented, and monitored according to target results (e.g., 50% cover of native grassland plant species).

7.3.2 Thatch Management

Historically, grassland, and oak woodland/savannah communities were subjected to periodic wildfires. These fires would burn dead plant material or thatch, keeping it from building up. Native ungulates, and later cattle, historically inhabited the grasslands within the City's Open Space. The grazing and trampling action of these animals also would have reduced the amount of dead plant material. Now, as development surrounds the Open Space, thatch has an opportunity to build up because of the lack of fires and grazing. This buildup of thatch can be detrimental to the preserved habitats, especially vernal pools and seasonal wetlands. Three methods for managing thatch are outlined below.

Controlled Burns

Controlled burning is an excellent way to eliminate accumulated plant matter and also serves to reduce the cover of non-native annual grasses (Pollak and Kan 1996). While prescribed burning is an effective tool in the long-term management of thatch accumulation, most of the City's Open Space areas have buildings in close proximity, making controlled burns a potential public safety hazard. However, a controlled burn also represents an exceptional opportunity for wildfire training for City and regional fire personnel. An Air Permit may be need to be obtained prior to conducting a controlled burn. An example controlled burn protocol developed by Eva Butler in 2004 demonstrates how a controlled burn might be orchestrated (Appendix 32).

Mowing

Another method to remove thatch is mechanical mowing. In order for mowing to be effective for thatch removal, the cut material would need to be removed from the site. If possible, the mowing regime should be timed to control invasive plants (see Appendix 24 for species specific mowing suggestions). To reduce the introduction of invasive plants, mowing equipment must be cleaned prior to entry into the Open Space. To date, little research has been conducted on mowing for thatch management. However, mowing would be expected to be effective for thatch management and is probably a realistic management practice for the smaller Open Space areas. It is anticipated that mowing would be needed once every three years.

Grazing

Grazing is the best option to reduce thatch build-up in both wetland and upland areas. Grazing with cattle, sheep, and goats are all potential options. Grazing with cattle requires a large continuous area that can realistically support a grazing herd for an amount of time that would make it economically feasible. The two large vernal pool grassland areas within the West Roseville Specific Plan are large enough to support cattle (Figure 7-1. *Grazing Areas*) and grazing of these areas is required by the Service (Appendix 33 – *WRSP Grazing Letter*). On occasion, goats and sheep may also be used in these areas. If a permanent change from cattle to another type of grazer needs to be made for these areas, the Service must provide written approval.

Figure 7-1

There are several other vernal pool grassland areas within the City that could support cattle for short periods of time, but not for a grazing season. Therefore, goats and sheep will be used in the smaller Open Space areas to manage thatch. (Cattle grazing is still allowed if it is found to be feasible.) These smaller grazers will be surrounded by an electric fence and moved periodically unless permanent grazing fencing is installed. Fencing will be used to protect riparian areas from grazing impacts where vernal pool grassland is adjacent to wetland/riparian areas. Figure 7-1 shows the areas proposed for grazing.

A more detailed Grazing Plan has been included as Appendix 25. This plan includes monitoring associated with grazing.

7.3.3 Invasive Plant Management

Annual grasslands, including vernal pool complexes, are susceptible to invasive plants. Due to the introduction of non-native grasses to California in the 1700 and 1800's, the annual grassland surrounding the vernal pool complexes have been converted to non-native annual grassland from what historically would have been a combination of native annual and perennial grasses, as well as native forbs. There are only a few areas within the City that retain a mixed non-native annual/native perennial grass composition. Complete eradication of non-native grasses is infeasible; however, the maintenance and gradual expansion of the native grass and forb populations can be accomplished over time. Management of invasive species will be guided by the principles of Integrated Pest Management (IPM).

The focus in the upland grassland areas will be on the control and eradication of invasive plants using a combination of hand, mechanical, and if deemed appropriate and as a last resort, chemical control. Last resort use of herbicides to control non-native invasive plant species may occur within all Waters of the U.S. except for vernal pools – a 60' buffer must be maintained around all vernal pools when spraying for non-native invasive plant species.

Within the vernal pool complexes themselves (the wetland areas), non-native species such as *Lolium multiflorum*, and *Hordeum marinum* have invaded the margins of the pools. Typically, inside the pool, vernal pools are "islands" of native species due to the unique soils and hydrology that support them. As such, there are fewer non-native species within the pools themselves. The focus for removal will be the same as the upland areas, but the task is more challenging. Removal of invasive plants within vernal pools using chemical controls is not permitted without Agency approval. Therefore, removal must be by hand. Experimental methods such as solarizing (covering the pool with black plastic or other material) are not proven, and will only be used on a trial basis to assist with research. Please see Appendix 24 for more details on invasive plant management.

7.3.4 Maintaining Natural Vernal Pool Hydrology

Biologists who study vernal pools have observed that altered hydrology, specifically too much water in vernal pools during the summer months when the vernal pool landscape is normally completely dry, can significantly and adversely influence their function. This is especially true in smaller, urban preserves (Clark et al. 1998). To retain the natural hydrology of preserved vernal pools, the City will work with future project proponents whose projects are adjacent to preserved vernal pool grassland or include a future preserve with a vernal pool grassland

component. The flow of drainage, landscaping, and storm water runoff from adjacent development cannot adversely impact vernal pool hydrology. Criteria regarding the installation of adjacent landscaping and new storm water discharge points are included in Sections 9.1.4 and 9.1.5. Drip irrigation for temporary irrigation of plantings installed for restoration purposes will be designed so that irrigation water is absorbed in the immediate vicinity of the planting and does not run off.

If possible (in some cases it may not be physically possible), the City will work to re-direct the flow of stormwater and/or irrigation runoff from previously developed projects such that natural hydrology can be restored to vernal pools that have been modified hydrologically by the input of such runoff.

Beavers occasionally construct dams across drainages within vernal pool grassland that cause flooding. If the flooding inundates adjacent vernal pools, the Open Space Manager will follow the Beaver Management Policy (Appendix 31) to restore the natural hydrologic regime to the adjacent vernal pools. Re-seeding the pools may be necessary if they have been inundated for a long time.

7.3.5 Special-Status Species Management

There are a number of special-status species that occur or have the potential to occur within vernal pool grassland areas. These include: dwarf downingia (*Downingia pusilla*), California linderiella (*Linderiella occidentalis*), vernal pool fairy shrimp (*Branchinecta lynchi*), western toad (*Spea hammondii*), Swainson's hawk (*Buteo swainsoni*), and burrowing owl (*Athene cunicularia*). By managing for the overall health of the annual grassland, the potentially occurring special-status species should benefit. Individual surveys for special-status species will be conducted as outlined in Tables 6-1 and 6-5. Results from these surveys can be used to inform management actions.

Specifically within the West Roseville Specific Plan Open Space Preserve areas, there is a requirement to graze the two parcels shown in Figure 7-1 to maintain them as appropriate foraging habitat for Swainson's hawks. The recent management/agricultural practice for both of these parcels has been cattle grazing.

Management for Swainson's hawk foraging habitat within a grassland should result in the reduction of vegetation cover during the spring/summer nesting season. This reduction in cover allows prey items to be more visible to raptors (Babcock pers. comm.). No studies have been done on the ideal grazing regime for Swainson's hawk foraging habitat management, but keeping the grass between six inches to a foot in height would be appropriate (Estep pers. comm., Babcock pers. comm.). Monitoring and active management will be used to find the appropriate stocking rate to achieve the desired grass height in conjunction with the desired residual dry matter appropriate for vernal pool grassland as described in the Grazing Plan (see Appendix 25).

7.3.6 Actions, Responsible Parties, and Timing

The following table summarizes the actions, responsible parties, and timing for vernal pool grassland management.

Table 7-3. Vernal Pool Grassland Management Summary

Action Summary	Responsible Party	Timing	Action Funding Status
Conduct enhancement and restoration activities.	Open Space Manager	Various activities throughout the year.	Not yet funded.
Conduct thatch management.	Open Space Manager	Depends on method.	Some management funded within OSP only.
Conduct invasive species management.	Open Space Manager	Species-specific timing.	Some management funded within OSP only.
Maintain natural vernal pool hydrology.	Open Space Manager	May occur throughout the year.	Some management funded within OSP only.
Conduct special-status species management.	Open Space Manager	May occur throughout the year.	Some management funded within OSP only.

7.4 Oak Woodland/Savannah Management

7.4.1 Oak Woodland/Savannah Enhancement and Restoration

In oak woodland/savannah areas that are not naturally regenerating, oak trees will be planted to augment existing populations as outlined in 7-1. Prior to planting, site-specific conditions and revegetation methods should be reviewed by an arborist, biologist, restoration specialist, the City's Urban Forester, or an ISA professional. An oak regeneration handbook has been appended to this Plan (Appendix 34 – *Oak Regeneration Handbook*).

7.4.2 Thatch Management

Competition with annual grasses has been cited as one of the reasons that natural oak regeneration has declined (McCreary 2001). Dead grasses can become so thick that after years without grazing or fire, few acorns are able to make good soil contact. However, cattle grazing is also cited a reason for the historic decline in the establishment of new oaks. Within the City, oak woodland/savannah that was grazed prior to development had few young trees. Now that these areas are preserved in Open Space and not been grazed, many now support young oaks. Therefore, thatch management in oak woodland/savannah should include grazing as a management option; however, these areas should be monitored for impacts to oaks that are too small to withstand browsing. The selection of the grazing animal kind and class, timing of grazing, or protecting concentrations of seedlings and saplings with fencing during grazing are all ways to minimize browsing on seedlings and saplings. See Section 7.3.2 for a description of controlled burns and mowing as other options for thatch management.

7.4.3 Invasive Plant Management

Within oak woodland and savannah, management of invasive plants will occur within the non-native annual grassland as well as non-native trees and shrubs. The annual grassland understory of the non-riparian oak woodland/savannah is similar to the grassland composition of vernal pool grassland and therefore invasive plant management in these areas will be similar. Please see Appendix 24 for more details on invasive plant management.

7.4.4 Removal of Native Oak Trees

Native oak trees within Open Space that present a fire hazard, a safety hazard, or have a disease that has the potential to spread rapidly and have a significant impact (e.g., sudden oak death) may be pruned or removed. The City's Urban Forester will inspect the tree to confirm that removal or pruning is necessary prior to initiation of work. A nesting raptor survey would be performed by a qualified biologist or appropriate City Staff before working in or removing a tree during nesting season (February 1st – August 31st). If a tree has died, is not a threat to other trees and is not a hazard, removal is not required. It is important to retain declining, hollow, dead, or fallen oak trees as they have a significant value to wildlife for refuge, nesting, and food caching.

7.4.5 Nuisance Run-Off and Beaver Dams

Oak trees are sensitive to receiving nuisance runoff from outfalls or adjacent landscaping. They are more susceptible to disease and will decline or die much quicker than their counterparts that do not receive runoff (McCreary 2001). To retain the natural hydrology around oaks, the City will work with project proponents whose projects are adjacent to preserved oak woodland/savannah or include a future preserve with an oak woodland/savannah component. The flow of drainage, landscape runoff, and outfall nuisance flows from adjacent development should avoid native oak trees and not saturate the root zone.

Beavers occasionally construct dams across drainages that cause flooding within oak woodlands, killing trees adjacent to the drainage. If flooding inundates adjacent oak trees, the Open Space Manager will follow the Beaver Management Policy (Appendix 31), including consulting the appropriate City Department such as the Public Works director for flooding risks, to remove problematic dams/beavers.

7.4.6 Special-Status Species Management

There are a number of special-status species that occur or have the potential to occur within the oak woodland/savannah areas. These include Swainson's hawk and burrowing owl. By managing for the overall health of the oak woodland/savannah the City will also manage for the special-status species that depend on them. Individual surveys for special-status species will be conducted as outlined in Table 6-1 and 6-5. Results from these surveys can be used to inform management action.

7.4.7 Actions, Responsible Parties, and Timing

The following table summarizes the actions, responsible parties, and timing for oak woodland/savannah management.

Table 7-4. Oak Woodland/Savannah Management Summary

Action Summary	Responsible Party	Timing	Action Funding Status
Conduct enhancement and restoration activities.	Open Space Manager	Various activities throughout the year.	Not yet funded.

Table 7-4. Oak Woodland/Savannah Management Summary (Continued)			
Action Summary	**Responsible Party**	**Timing**	**Action Funding Status**
Conduct thatch management.	Open Space Manager	Depends on method.	Some management funded within OSP only.
Conduct invasive species management.	Open Space Manager/Urban Forester	Species-specific timing.	Some management funded within OSP only.
Removal of native oak trees	Urban Forester/Tree Crew	May occur throughout the year.	Funded.
Conduct/prevent nuisance run-off and beaver dams.	Open Space Manager/Creek Crew	May occur throughout the year.	Limited funding for problematic beavers/dams.
Conduct special-status species management	Open Space Manager	May occur throughout the year.	Some management funded within OSP only.

7.5 Non-Native Wildlife Management and Mosquito Abatement

7.5.1 Beaver Management

The American Beaver (*Castor canadensis*) is a primarily nocturnal semi-aquatic rodent whose range extends through portions of Placer County. Beavers are found in streams, ponds, and lakes margins, and feed on grasses, leaves, and aquatic vegetation in the spring and summer, and bark and cambium in the winter. Branches are stored in a lodge or pond bottom, held in place by mud. Beaver colonies tend to deplete the favored food sources over time, moving up or down stream to undisturbed habitats. Beaver activity can have a number of ecological benefits. Beaver dams can create new wetland areas, reduce turbidity and erosion, slow floodwaters and lead to sediment deposits that provide long-term soil enrichment. Beaver trimming of willows, cottonwoods, and alders can lead to multiple sprouts and encourage strong shrubby growth.

However, pressures from the development of surrounding areas, and the lack of natural predators (coyotes, bobcats, bears, and mountain lions), may lead to overpopulation. The City has developed a comprehensive Beaver Management Policy (Appendix 31). The Management Policy may be implemented within Open Space where beaver dams have "created the potential for health and safety issues, interfere with utilities operations, cause property damage, or impact certain natural resources subject to permit regulations".

Additionally, beaver activity within Open Space may threaten the success of riparian restoration/mitigation efforts. Dams or lodges may cause ponding that threatens established trees or beavers may target young mitigation plantings of preferred tree species. In cases where beavers are causing adverse impacts to vernal pool grassland or oak woodland, the Open Space Manager will use the Beaver Management Policy to take corrective action.

7.5.2 Free-Ranging Cats

Free-ranging human companion domestic cats and feral cat populations are common throughout urban, suburban, and rural areas. Feral cats can reproduce rapidly and feed on songbirds, game birds, rodents, rabbits, reptiles, amphibians and other wildlife, which not only effects sensitive prey populations but reducing available food sources for native predators (e.g., great horned owl, red-tailed hawk). Free-ranging cats can have particularly significant impact in habitat "islands" such as small preserve parcels, parks, and open space areas surrounded by human development. They can seriously threaten the survival of small populations of special-status species and migrating birds.

Residents adjacent to Open Space should be educated about the impacts of cat populations within the Open Space. The introduction and/or management of feral cat populations, including trap/neuter/release of free ranging cat colonies, and feeding programs, within or adjacent to City Open Space should be discouraged. In areas where free ranging cat populations are a threat to the biological resources within the Open Space removal may be necessary and will be coordinated in conjunction with City Animal Control, The Placer County SPCA, and/or volunteer groups.

7.5.3 Mosquito Abatement

Diseases carried by mosquitoes can be a serious concern. The City of Roseville falls under the jurisdiction of the Placer County Mosquito and Vector Control District (District). The District operates under the California Health and Safety Code (Division 3, Chapter 1, Article 1) independent of the City. As stated by the District, some common practices within the District to control mosquitoes are trapping, applying larvicides or planting mosquito fish and all of these practices may be conducted in Open Space (District 2009). These efforts are outlined in more detail in Appendix 35. Mosquito abatement is not a proposed action of this plan. Actions carried out by vector control are not under the City's control and the District is expected to ensure their actions do not violate the ESA.

7.6 Invasive Plant Management Goals

Management of invasive plant species can be a complex and expensive task. Table 7-5 outlines the Goals and Actions designed to identify and manage existing and newly occurring populations of invasive plants and prevent the intentional establishment of these species to maintain the heath and diversity of the City's native communities, focusing particularly on habitat for special-status species, and improve the enjoyment of the City's Open Space by residents. It is important to recognize that the City can only conduct as much invasive plant management as can be accomplished with the current funding or by obtaining other funds such as grant funds. The City's desire is to provide a comprehensive approach to invasive plant management in Roseville through the Invasive Plant Management Plan (see Appendix 24). While the OSPOMP does not require management of invasive plants within the General Open Space, given the fact that the Open Space Preserve areas are adjacent, the invasive species found within Open Space Preserve cannot be treated in isolation if eradication is to be successful.

Table 7-5

7.7 Invasive Plant Management Plan

An Invasive Plant Management Plan (see Appendix 24) has been prepared and attached to the OSPOMP. The Invasive Plant Management Plan was prepared using the guidelines outlined by The Center for Invasive Plant Management Plan and The Nature Conservancy Global Invasive Species Team. The plan is intended to be a functional management tool that outlines current management priorities and appropriate management tools using the best available technology. Invasive plant management tools may include hand and mechanical removal, grazing, controlled burning, and selective herbicide use. Selective use of herbicides to control non-native invasive plant species may occur within all Waters of the U.S. except for vernal pools. A 60' buffer must be maintained around all vernal pools and elderberry shrubs when spraying for non-native invasive plant species. The Invasive Plant Management Plan will be a living document and will aid in enhancing, restoring, and increasing the overall habitat function and value of all of the City's Open Spaces.

8.0 OPEN SPACE MAINTENANCE

8.1 Open Space Maintenance Goals

Open Space maintenance is key to minimizing impacts to biological resources and maximizing public safety and enjoyment. A balance must be struck between keeping Open Space areas clean and neat while still leaving them natural. The Plan includes provisions for the following; trimming along Open Space edges; installing and maintaining adequate fencing and signage; creek, outfall, and constructed swale/ditch maintenance to reduce flooding and increase habitat value; and minimizing impacts to the Valley elderberry longhorn beetle or federally-listed vernal pool invertebrates or their habitat. The Open Space Maintenance Goals and Actions are outlined in Table 8-1.

8.2 Specific Maintenance Descriptions

The following sections outlined planned maintenance activities within the City's Open Space.

8.2.1 Trash Removal

At minimum, the Open Space Manager will coordinate the removal of trash from the Open Space Preserves quarterly and from the General Open Space on an as needed basis.

8.2.2 Maintenance of Open Space Edge Condition

If desired, mowing and/or trimming of the Open Space edges will be performed on a yearly basis as outlined in Table 8-1.

8.2.3 Maintenance Within Drainages, Culverts, and Bridges

The City currently has an SAA with CDFW that allows maintenance activities within several riparian areas. Allowed maintenance activities include: removal/displacement of sand, silt, sediment, debris, rubbish, woody or aquatic vegetation and other obstructions to flow; the control of weeds, grasses, and emergent vegetation; and the cleaning, clearing, repair, and replacement of in-kind or similar erosion control facilities and constructed channel improvements; all as authorized to maintain the structural integrity and designed capacity of the channels. Specifics of how these maintenance activities are to be conducted are detailed within the SAA included as Appendix 6. Maintenance within creeks will be done according to the City's SAA and Creek Maintenance Guidelines (see Appendix 5). Please see Sections 1.2.3 and 1.2.4 for further details. If herbicide spray is used for any of the above maintenance tasks, only authorized herbicides and application methods are allowed and only in conjunction with implementation of the identified minimization measures, all as described in the Interim Invasive Plant Management Plan (Appendix 24) Attachment C: Herbicide Use Within City Open Space. Attachment C contains a description of all uses of herbicides, not just uses associated with invasive plant management. A 60' buffer must be maintained around all vernal pools and elderberry shrubs when spraying with herbicides.

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Table 8-1 (pg 3 of 6)

Table 8-1 (pg 4 of 6)

Table 8-1 (pg 5 of 6)

Table 8-1 (pg 6 of 6)

Erosion

Occasionally, during high flow events, riparian corridors can experience moderate to severe erosion. Erosion in creek areas is a natural process and does not always require remediation. If problematic erosion is noted during one of the monitoring visits, the Open Space Manager will work with the Monitoring Biologist and other specialists such as a fluvial geomorphologist, erosion control specialist, and the City's Floodplain Manager to determine the best way to handle the erosion.

Emergency Situations/Maintenance Requiring a Permit

From time to time, work that will impact waters of the U.S. and/or Endangered Species habitat may be conducted due to an emergency. Please see Section 12.4 for a discussion of emergency permit procedures. Disturbance or removal of soil/sediment or implementation of erosion control measures within waters of the U.S. for planned (non-emergency) maintenance activities could require a permit from the Corps. As such, consultation with the Corps is required prior to undertaking such activities. The Open Space Manager should contact the Corps to determine what type of authorization for the maintenance work is required. See Section 12.3 for a discussion of activities that require a permit.

8.2.4 Open Space Fencing

Fencing is an important component of Open Space management. Fencing delineates the Open Space perimeter, contains grazing animals, and deters inappropriate access/vandalism. If fencing is proposed within the floodplain it will need to be evaluated by the Floodplain Manager. Detailed hydraulic modeling maybe required to address impacts to the 100-year and 200-year water surface elevation due to any planned fence construction within the floodplain.

A map depicting the approximate location of fencing (existing and desired) by type will be included as Appendix 36 when complete. This map will allow for the identification of fencing that needs to be installed or repaired and planning for additional fencing where it may not have initially been required but is desired (such as in General Open Space).

Prioritization of Fencing Repair or Installation

For the installation of new fencing, the minimum number of fences needed to meet the objective should be installed. New and existing fencing will be prioritized for upgrading and installation using the following criteria: lack of fencing poses a safety risk, least wildlife friendly, wildlife crossing frequency, fencing not fulfilling desired function, and fencing not present.

Initial Installation of Fencing and Fencing Types

Much of the existing fencing surrounding the Open Space was installed by the project proponent during the initial construction of the associated development. Other areas that are not currently fenced, such as the General Open Space, will be fenced according to Appendix 36. In these areas fencing is not required, but may be desired by the City.

In the future, fencing for new Open Space Preserves areas will vary according to the adjacent parcel land use (roadway, residential, business, etc.). In general, fencing is designed to prevent vehicle access and allow unrestricted visual access into the Open Space. Fencing types include grazing fencing, post and cable, chain link, concrete rail, split rail, and wrought iron (tubular steel) with knee wall. In limited cases, sound wall or concrete block wall and guard rails may constitute the Open Space fencing. A detail for each type of fencing is included as Appendix 37. Fencing will be installed and maintained according to these specifications. The fencing types required adjacent to each land use and who is responsible for the maintenance of the fencing are addressed below:

Grazing Fencing

For Open Space areas where regular grazing can occur, additional grazing fencing will be installed at the edge of the Open Space area or the inner boundary of the 50-foot transition zone depending on the adjacent land use. This fencing consists of three strands of barbed wire above hog wire with an additional barbed wire strand at the bottom. This keeps animals, particularly young animals, from pushing under the fence and getting out. The City is responsible for the maintenance of grazing fencing unless the City includes maintenance as part of the grazing contractor's responsibility.

Roadway and Bike Trail Fencing

Along roadways and bike trails where fencing is required by an Agency permit, fencing will be post and cable, four-foot black vinyl covered chain link, four-foot tubular steel, guard rail, or concrete rail fencing. The City is responsible for the maintenance and replacement of fencing along roadways and bike trails. In some instances, fencing the entire bike trail is cost prohibitive and may not be necessary. The Open Space Manager will coordinate with the Public Works Department when new roadways or trails are constructed within or adjacent to General Open Space Areas to evaluate fencing needs. Fencing requirements for Open Space Preserve shall be consistent with the individual 404 permit conditions.

School Fencing

Where the Open Space area shares a boundary with a school, the fencing will be post and cable, four-foot tubular steel, or black vinyl covered chain link. Either the school district or the City will be responsible for maintenance and replacement of the fencing depending on the circumstance.

Park Fencing

Where the Open Space shares a boundary with a park, the fencing will be post and cable, split rail, or black vinyl covered chain link. The City is responsible for maintenance and replacement of the fencing.

Private Property Fencing

For Open Space areas adjacent to private property, the maintenance and replacement of fencing is the responsibility of the adjacent property owner(s). In older areas of the City, the fencing types along private property vary. All new development (residential, commercial, industrial) adjacent to the Open Space will use 6-foot tubular steel or chain link fencing, with or without a knee wall. In rare cases the City may approve concrete block or sound wall adjacent to these uses. The City will be responsible for enforcing the fencing requirements. The City would recommend to private land owners that gates not be installed on private fencing adjacent to Open Space. This may lead to unauthorized uses of open space and damage to habitat.

Adjacent Open Space Fencing

If other projects are developed adjacent to any of the Open Space parcels, and the Open Space of that project is adjacent to the existing Open Space, the fencing between the two can be removed if desired. The removal of common fencing could allow for wildlife passage or joint management such as grazing.

Maintenance and Repair

Maintenance and replacement of fencing and signage will be restricted to the minimum area needed to fix the fencing, and when possible, should take place from outside the Open Space.

8.2.5 Bollards and Gates

Bollards are placed in locations where trails enter into the Open Space to prevent unauthorized vehicle access. Gates are installed in several locations to allow access for maintenance crews, emergency vehicles, and/or monitoring staff.

8.2.6 Open Space Signage

Open Space signage has been or will be installed to inform the public of the presence of the Open Space areas. These include Open Space Preserves signs, General Open Space signs, and interpretive signs. The current City Open Space signs for General Open Space and Open Space Preserves are included in Appendix 38, and approximate sign locations are in Appendix 36. If the City feels that additional signage is warranted then more may be installed. The location of signage for new Open Space Preserve will be based on permit conditions.

General Open Space Signs

Signs noting the location of the General Open Space will identify prohibited activities such as off-highway vehicle (OHV) use, dumping, camping, etc. See Appendix 38 for an example sign. When funding becomes available to install signs for General Open Space, locations will be chosen near common access points such as bike trails.

Open Space Preserves Signs

The Open Space Preserves signs differentiate General Open Space by noting that sensitive habitat such as vernal pools are present and also indicate prohibited activities. See Appendix 38 for an example. Many of these signs have already been installed as a condition of the regulatory permits for the individual projects; however, the City may install additional signs as needed.

Interpretive Signs

Interpretive signs educate the public about riparian and oak woodland habitats, their conservation, common species observed, and encourage respect for the Open Space areas. They may be installed near the various native communities, such as oak woodland, riparian, or vernal pool grassland. The City has developed design guidelines for interpretive signage (Appendix 39) and is responsible for the maintenance and replacement of the signage.

8.3 Correction of Vandalism/Accidental Open Space Impacts

It is difficult to anticipate and provide measures to correct all potential vandalism and unanticipated Open Space impacts; however, the following sections outline some potential impacts and corrective measures. These measures have been approved by the Service and the Corps through the approval of this Plan. If a particular situation is not listed, determining an appropriate corrective action will be at the discretion of the Open Space Manager in coordination with the Monitoring Biologist.

In these instances, the appropriate Agency(s) will need to be contacted only if corrective work will occur within waters of the U.S. or will directly or indirectly impact Endangered Species habitat and: 1) the work is not covered by the OSPOMP Biological Opinion, 2) the impact amount covered under the Biological Opinion is exceeded, or 3) the endangered/threatened species habitat is under the jurisdiction of NOAA Fisheries/NMFS. See Section 8.3.3 for the permit procedures regarding correcting vandalism/accidental impacts within waters of the U.S. and for the associated monitoring requirements.

8.3.1 Disturbance of Grassy Upland Areas

Restoration of grassy upland areas due to disturbance resulting in bare ground should include seeding the area with appropriate native grass seed (see Appendix 17) and implementing erosion control measures until the bare ground becomes vegetated again. Invasive species can invade disturbed areas even if they are seeded. Monitoring of disturbed grass areas will be conducted for two years during the spring. If increased cover of invasive plant species is demonstrated compared to the adjacent undisturbed areas, the party causing the disturbance will conduct invasive plant removal to the satisfaction for the Open Space Manager.

8.3.2 Sedimentation in Vernal Pools or Other Wetlands

Agency Notification

If turbid water from a construction site is discharged into a preserved wetland, the Open Space Manager will notify the Corps and the Service (if Endangered Species habitat) within 72 hours.

Assessment of Impacts

The Open Space Manager and Monitoring Biologist will make the assessment in summer when the wetland is dry. They will determine if immediate remediation (i.e., removal of any sediment, re-seeding) is warranted, or if monitoring will be conducted to determine if the wetland is recovering sufficiently on its own. The presence of turbid water within a wetland does not always mean that there will be residual sedimentation. Indicators of recovery include an appropriate ponding duration, the re-establishment of wetland plant species, and recovery of the wetland's vegetative cover.

Remediation Plan/Remediation Monitoring

Up to three years of monitoring will be conducted to determine if remediation is needed. Yearly monitoring will consist of one winter visit and one summer visit each year to assess the hydrology and floristic composition of the wetland. If the monitoring assessment indicates that removal of the sediment is warranted, it will be conducted during the summer months when the wetland is completely dry. Small amounts of the sediment will be removed by hand tools. Care will be taken to remove only the sediment and not disturb the original grade of the wetland. If a significant discharge of sediment occurs, removal by hand may not be feasible. Minor grading (using a skip loader or asphalt floater, or other appropriate equipment) may be used in these instances. Current Corps policy requires that three years of monitoring be conducted after the remediation has taken place.

Remediation Bonding

For a construction-related discharge into a preserved wetland, the project proponent will make a cash payment, post a bond, or enter into another financial arrangement acceptable to the City and the Agencies. The amount will be enough to cover the cost to monitor the wetland for up to six years (pre and post-remediation), to conduct remediation (this cost will be estimated), and to purchase mitigation credits at a mitigation bank or in-lieu fee fund equal to the current Agency mitigation requirements for the impacted acreage (in case remediation is not successful). The bond must be in place before the project receives final permit approval for the work in progress that resulted in the unpermitted discharge (i.e., grading permit, building permit or other City authorized permit). The project proponent responsible for the discharge will then pay for the monitoring and remediation or credit/in-lieu fee purchase. The City will release the bond when the Agencies have signed off that the wetland has either been remediated or mitigated. If for some reason, the project proponent chooses not to pay for monitoring and remediation or replacement of the wetland, the City will call for full payment of the bond and will use the money to conduct

the needed remediation and monitoring activities or will purchase mitigation credits in coordination with the Agencies.

8.3.3 Accidental Fill of Wetlands/Waters of the U.S.

Agency Notification

The Open Space Manager will notify the Corps and the Service (if the wetland is Endangered Species habitat) within 72 hours if fill/loss of wetlands or waters of the U.S. has occurred within the Open Space.

Assessment of Impacts

The Open Space Manager and/or the Monitoring Biologist will determine the extent of the fill. This will include the acreage and the severity of the fill (i.e., whether there is loose soil present in the feature or if the soil been compacted).

Removal of Fill/Restoration Plan

Restoration for fill/loss of waters of the U.S. will result in the removal of fill from the feature, potentially the minor re-grading and revegetation of the feature (if appropriate). If the fill is minor and can be removed quickly by hand, the work will be conducted at the direction of the Open Space Manager as soon as it is discovered. The Open Space Manager will send a follow-up memo to the appropriate Agency(s) regarding the completion of the work within one week. If the fill is more extensive and will require equipment, the Open Space Manager and/or Monitoring Biologist will present the Corps (and Service or NOAA Fisheries/NMFS if applicable) with a restoration plan for their review and approval. While the typical time period for Agency review and approval is 60 days, they will make every effort to respond in a timely manner to requests regarding fill of wetlands/waters of the U.S. so that restoration can be implemented at the appropriate time of year (e.g., before the rainy season).

It may not be necessary for the party causing the fill to obtain an after-the-fact permit if the feature wetland is due to the removal of the fill and restoration as outlined in Code of Federal Regulations, Title 33, Chapter II, Part 326.3(e)(1)(i), under *After-the-fact Permit Applications*:

> Following the completion of any required initial correction measures, the district engineer at the Corps will accept an after-the-fact permit application unless he/she determines that one of the exceptions listed in subparagraphs i-iv [of 33 326.3(e)(1)] is applicable. Applications for after-the-fact permits will be processed in accordance with the applicable procedures in 33 CFR Parts 320-325. Situations where no permit application will be processed or where the acceptance of a permit application must be deferred are as follows:
>
> No permit application will be processed when restoration of the waters of the United States has been completed that eliminates current and future detrimental impacts to the satisfaction of the district engineer.

If an after-the-fact Corps permit is not required within Endangered Species habitat due to the proposed restoration efforts, the Open Space Manager will only have to discuss a modification to the Biological Opinion to conduct the restoration if: 1) the restoration work is not covered by the Biological Opinion or 2) the impact amount covered under the Biological Opinion is exceeded.

If it is determined that an after-the-fact Corps permit is required (i.e., the feature cannot be restored), the Corps may have to consult with the Service or NOAA Fisheries/NMFS if corrective work will directly or indirectly impact endangered/threatened species habitat and: 1) the work is not covered by the Biological Opinion, 2) the impact amount covered under the Biological Opinion is exceeded, or 3) the endangered/threatened species habitat is under the jurisdiction of NOAA Fisheries/NMFS.

8.3.4 Removal of Native Trees or Shrubs

Restoration for the unauthorized removal of native trees or shrubs will result in the replacement of the habitat. This could be in the form of planting tree/shrub seeds or seedlings in an amount sufficient to ultimately result in the survival to maturity of the same number of trees or shrubs that were removed. Native oak trees that have reached 6 inches DBH will, at minimum, be replaced consistent with the City's Oak Tree Ordinance (Appendix 40). The project manager or project proponent will work with the Open Space Manager to replace an appropriate number of native shrubs.

8.3.5 Fencing and Signage

Restoration for the destruction or modification (e.g., installing an unauthorized gate) of Open Space fencing or signage should include fixing, upgrading, or replacing the section of fencing or the sign to its original specifications.

8.3.6 Erosion

Erosion can result from a variety of causes and should be corrected promptly. This may include: minor grading and reseeding with native seeds to stabilize exposed soil, use of straw wattles, or the installation of turf reinforcement mat/erosion control blanketing, or other erosion control methods approved by the City Engineer in consultation with the Open Space Manager.

8.3.7 Graffiti and Vandalism

Occasionally, graffiti and vandalism does occur within the Open Space areas. Graffiti or vandalism to fencing may require painting or replacement of fencing. If vandalism occurs to any of the preserved habitats the Open Space Manager may work with the Monitoring Biologist (if needed) to identify the best course of action.

8.3.8 Undesignated (Social) Trails

Residents often form walking trails through Open Space where no trails previously existed or where walking through the Open Space is shorter than taking a designated trail. The Open Space Manager will take steps to protect sensitive communities by preventing this activity within

Open Space Preserves when there are signs that Endangered Species habitat is being or could be impacted. Fencing will be repaired to discourage continued access. Signs may also need to be posted in that area to further discourage off-trail access. With established trails it may be necessary to rip the soil and spread native seed mix to re-establish vegetation. The spreading of native seed will help to stabilize the soil and prevent erosion. Distributing flyers to residents near the Open Space may also help discourage off-trail use.

Within General Open Space or Open Space Preserves without Endangered Species habitat, the Open Space manager will evaluate the impact of walking trails and allow trails that are not problematic to remain. Such trails within less sensitive communities can allow residents to appreciate and therefore value the City's biological resources, a goal of this Plan.

8.3.9 Forts

Occasionally, youths will construct structures within Open Space areas, including forts. City crews will dismantle these structures and remove all components from the Open Space.

8.3.10 Un-Permitted Bike Jumps/Tracks

Dirt bike jump construction has been an issue within some of the Open Space areas. Maintenance crews will dismantle jumps in upland areas. This may require the use of a shovel or small equipment to remove associated mounds of soil. Maintenance crews will be careful to not put any loose soil within wetlands unless the soil was removed from a wetland resulting in a hole. If the construction of bike jumps impacted any wetlands, the Open Space manager will notify the Corps and Service as outlined under Section 8.3.3

8.3.11 Off Highway Vehicle Use

OHV use within the Open Space can have a detrimental effect on the preserved habitats. This type of activity should be discouraged through fencing, vehicle barriers (e.g., rocks, telephone poles), and signage. Resulting damage to the Open Space will be corrected as soon as possible with existing funding.

8.3.12 Landscaping/Gardens

Residents adjacent to Open Space occasionally view these areas as an extension of their backyard and will begin to landscape or plant gardens within the Open Space. In many cases this type of activity has been prohibited by the development's Covenants, Conditions, and Restrictions (CC&Rs) or individual homeowner's deed disclosures. If landscaping/gardening is observed, the Open Space Manager will follow City procedures for notifying the party responsible, requesting corrective action, and then requiring payment if the City has to correct the problem.

8.4 Open Space Maintenance Monitoring (General Inspections)

The Goal for General Inspections is once per month for all Open Space areas. General Inspections will allow for timely identification and correction of maintenance issues, vandalism, and unanticipated impacts.

8.4.1 Monitoring Timeline

General Inspections of the Open Space will be made monthly to ensure the integrity of City's Open Space and to locate any problem areas. Inspections will concentrate on an evaluation of the following factors: erosion and sedimentation, beaver dams, fire hazard reduction (in addition to Fire Department monitoring), fencing integrity, condition of signage, trash accumulation, and vandalism/Open Space impacts. The entire perimeter of the Open Space will be covered, as well as meandering transects through its interior. An Inspection Sheet (see Appendix 27) will be utilized to evaluate the above criteria during each field visit. Previous inspection sheets will be reviewed before each visit to ensure that a possible or recurring problem area is not missed. If any problems are identified, more frequent inspections will be conducted to closely track any problems and to ensure that remedial actions are effective.

8.4.2 Actions, Responsible Parties, and Timing

The following table summarizes the actions, responsible parties, and timing for Open Space maintenance monitoring.

Table 8-2. Open Space Maintenance Monitoring Summary

Action Summary	Responsible Party	Timing	Action Funding Status
General Inspections	Open Space Division	Monthly	Quarterly inspections funded for OSP only.
General Inspection Memos	Open Space Division	Following each monitoring visit	Quarterly inspections funded for OSP only.
Corrective Action	Open Space Division	As soon as possible and when funding is available	Funding for OSP fencing, signage, and limited vandalism available.
Preventative Action	Open Space Division	As soon as possible and when funding is available	Funding not yet available.

8.5 Wildfire Management Descriptions

In addition to the obvious dangers wildfires represent to human health and safety, uncontrolled wildfires can adversely impact the City's Open Space. Management activities such as grazing, mowing, and controlled burns are discussed in the OSPOMP not only for their benefits to native communities, but as potentially compatible ways to reduce fuel loads. A reduction in fuel loads within the City's Open Space may reduce the intensity and therefore the impact of wildfires. Ultimately, the City will develop a wildfire safety plan that can be attached to the OSPOMP. Until that plan is developed, the fuel treatment specifications described in the *Stoneridge*

Specific Plan Wildfire Safety Plan (Appendix 41 – *Wildfire Safety Plan*) can be followed in all Open Space areas to the extent applicable.

8.5.1 Mowing Preventative Firebreaks

The Fire Department can mow up to a 40-foot firebreak at the back of development within the City's Open Space. These firebreaks are typically installed before June 28th. A ten foot firebreak can also be mowed along roadways, parking lots, etc. Firebreaks may be mowed (not disked) such that vegetation is two inches high or less. In areas where a bike trail occurs, the bike trail plus a five-foot mowed strip on either side of the asphalt can also serve as an additional internal firebreak. Firebreak mowing is expected to occur in late spring, prior to the start of fire season. All riparian vegetation, wetlands, and waters of the U.S. will be buffered by a minimum of ten feet when the firebreaks are mowed.

8.5.2 Ground Nesting Bird Surveys

The Corps requires that a survey for ground nesting birds be conducted if firebreaks are to be cut before July 1st to eliminate impacts to these species. Therefore, the Open Space Manager will be responsible for arranging for a ground nesting bird survey to be conducted each year prior to the mowing of firebreaks.

8.5.3 Grazing

Grazing can be a less expensive alternative option for firebreaks and can be employed in areas that are too steep or rocky for mowing equipment. Goats and cattle are commonly used for grazing Open Space areas. Goat grazing is normally employed when grazing is required but site conditions are not well suited for cattle (i.e., small parcels, public safety concerns, steep topography, etc.). Cattle are used on larger parcels, and where less oversight is required. Please see Appendix 25 (Grazing Plan) for more detail.

8.5.4 Controlled Burns

Controlled burning is an excellent way to eliminate accumulated plant matter (fuel load), but it can also be a potential public safety hazard. At this time, the City does not intend to conduct controlled burns. However, should the City determine that controlled burning is the best adaptive management tool to use, agencies will be notified of the planned burn. An example controlled burn protocol developed by Eva Butler in 2004 demonstrates how a controlled burn might be orchestrated (Appendix 32). Please see Section 7.3.2 for a discussion of controlled burns in vernal pool grasslands.

8.5.5 During a Wildfire

If a wildfire occurs, firefighting vehicles will need to access the Open Space. To minimize impacts to the biological resources within Open Space, fire department staff should avoid driving through wetlands. Additionally, if firebreaks must be scraped to contain and prevent the spread of a wildfire, the scraped firebreaks should avoid wetlands if at all possible.

8.6 Wildfire Monitoring

The Goal of wildfire monitoring is to conduct annual surveys to reduce the risk of wildfire within the City.

8.6.1 Monitoring Timeline

Monitoring to identify potential fire hazards and ensure that firebreaks are implemented will occur prior to June 1st of each year. Identification of potential controlled burn areas will be conducted on an as needed/if desired basis. If a wildfire occurs, a site visit will be conducted to determine if remediation is needed (e.g., remediation of wetlands if disturbed by a scraped fire break or implementation of soil stabilization measures if there is erosion potential).

8.6.1 Actions, Responsible Parties, and Timing

Table 8-3 summarizes the actions, responsible parties, and timing for wildfire management.

Table 8-3. Wildfire Monitoring Summary

Action Summary	Responsible Party	Timing	Action Funding Status
Fire hazard identification.	Fire Department	Prior to June 1st each year.	Funded.
Firebreak implementation check.	Fire Department	Prior to June 1st each year.	Funded.
Identification of areas for controlled burns.	Fire Department/Open Space Manager/Monitoring Biologist	As needed/if desired.	Incidental observances during other monitoring funded.
Post fire site visit.	Open Space Manager/Monitoring Biologist	After fire has been extinguished.	Funded.

9.0 CITY FACILITIES MAINTENANCE, INSTALLATION AND REPLACEMENT

There are a number of different facilities within the City's Open Space. These facilities include but are not limited to: bike trails and maintenance roads, detention and retention structures, water quality features, outfalls and inlets, bridges and culverts, water lines, sewer lines, natural gas lines, electrical poles and towers/lines, fiber optic lines, telephone poles/lines, stream gauges, and cell phone towers. The Goals and Actions associated with City facilities maintenance are outlined in Table 9-1 In summary, the City must have the flexibility to design, construct, maintain, and replace City facilities or utility company facilities within the City's Open Space to maximize the life and efficient function of these facilities. At the same time the City will protect biological resources from unpermitted impacts. When City facility maintenance or replacement may have the potential to impact the Valley elderberry longhorn beetle or federally-listed vernal pool invertebrates or their habitat, the City will conduct the work according to the Biological Opinion issued for the OSPOMP. See Section 3.7.1 for allowed impacts.

Previously approved permitted uses in prior Operations and Management Plans are considered approved by this Plan. Previously approved Operations and Management Plans contained permitted use sections and these uses will considered to be "grandfathered" in under this Plan. If those uses will require an Agency permit the City or project proponent will obtain the necessary state and federal approvals.

9.1 Facility-Specific Maintenance and Installation Descriptions

9.1.1 Bike Trails, Maintenance Roads Maintenance/Ramps

Bike trails and their appurtenances shall be installed and maintained in accordance with the Bicycle Master Plan and this plan. Figure 9-1 depicts all existing and proposed bike trails. Existing trails were either permitted and installed as part of the development requiring an Open Space Preserve or were permitted separately as their own project within General Open Space. Some trails approved by the Agencies as part of past operations and management plans have not been constructed yet, but are considered approved under the OSPOMP as well. Several additional trails that have not yet been permitted were conceptually approved by the Agencies with the approval of the OSPOMP. When plans are developed, the Project Proponent, which may include the City of Roseville Public Works Department, will coordinate with the appropriate State and Federal Agencies for approval of all required permits including Section 7 consultation with the Service, and shall keep the Open Space Manager duly informed of any such correspondences. The project proponent shall also route the project plans to the Open Space Manager for review in accordance with established plan check procedures.

All bike trails and their appurtenances will be maintained as described below. Maintenance will include:

- Trimming trees and shrubs (including allowed trimming of elderberry shrubs if needed – see Section 3.7.1);
- Mowing five feet on each side of the asphalt;

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Table 9-1 (pg 2 of 2)

Figure 9-1

- Use of herbicides to control vegetation up to four feet on each side of the asphalt. If herbicide spray is used for vegetation control, only authorized herbicides and application methods are allowed and only in conjunction with implementation of the identified minimization measures, all as described in the Interim Invasive Plant Management Plan (Appendix 24) Attachment C: Herbicide Use Within City Open Space. Attachment C contains a description of all uses of herbicides, not just uses associated with invasive plant management. A 60' buffer must be maintained around all vernal pools and elderberry shrubs when spraying with herbicides.
- Repaving, re-striping, and crack maintenance;
- Shoulder (decomposed/gravel) maintenance and addition;
- Sweeping and sign repair/replacement.

Beginning with the West Roseville Specific Plan and including all future development projects, concrete maintenance ramps will also be constructed to outfalls, if needed, but will remain in the 50-foot transition zone (see Section 5.1 for more information on the 50-foot transition zone).

9.1.2 Post-Construction Water Quality Features

Under the Clean Water Act, the City is required to regulate stormwater discharges by the National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit. The City is currently covered under California's Phase II NPDES Municipal General Stormwater Permit. In collaboration with the Sacramento Stormwater Quality Partnership, the Stormwater Quality Design Manual for the Sacramento and Southern Placer Regions was developed (Appendix 42 –Stormwater Quality Design Manual). This manual outlines planning tools and requirements to reduce urban runoff pollution for new and redevelopment projects, and will also be used as a guideline for the maintenance and management of stormwater quality structures throughout the City. While the majority of stormwater quality improvement focuses on point source control, detention/retention structures are occasionally located within Open Space areas.

Currently, only retention/detention structures (may also serve as water quality basins) and vegetated swales are the only post construction storm water quality controls found with the City's Open Space. Post-construction stormwater quality controls utilized in the future may include water quality basins (constructed wetland basins, water quality detention basins, and infiltration basins), infiltration trenches, vegetated swales, and vegetated filter strips. These uses are presented in the Plan for conceptual approval. The installation of outfall structures and constructed swales/ditches is discussed in more detail in Section 9.1.4 below. The Open Space Manager will coordinate with the Public Works Department or appropriate project manager and State and Federal Agencies for approval of the installation of these other controls if they are to occur in existing Open Space Preserves that do not have a 50-foot transition zone. If these controls are located outside of the 50 foot transition zone within Preserves that contain a buffer the Open Space Manager will also coordinate with the Public Works Department, or appropriate project manager, and State and Federal Agencies for approval of the installation of these controls. For future Open Space Preserves, if these features are located in the 50-foot transition zone they will not require Agency approval.

The required maintenance actions will depend on the individual post construction water quality feature. The City will ensure post-construction water quality controls found within Open Space are regularly inspected and ongoing maintenance is occurring. A maintenance plan will be prepared for each post construction BMP installed within the Open Space as outlined in the Stormwater Quality Design Manual. When complete, the maintenance plans will be included in Appendix 43 – *Maintenance Plans for Post Construction Water Quality Structures*). The City will review Maintenance Plans to ensure that funding is available for the maintenance of additional structures, and may seek additional funding prior to the installation of such structures prior the installation of post construction BMP's.

Until the maintenance plans are developed, maintenance for water quality basins will include regular trash removal and occasional removal or replacement of vegetation, and may require sediment removal on a more irregular basis. Additionally, vegetation removal may be required as a mosquito abatement measure. If problematic erosion is found during regular inspections the water source will be redirected or dissipated. If necessary, the area of erosion may be re-contoured, mulched and/or seeded with the appropriate native seed mix. Channels leading to Water Quality Basins may also require vegetation or sediment removal to allow for free flow into the basin.

Maintenance for grassy swales will include regular trash removal, the occasional removal (mowing or weed-whacking) or replacement of vegetation, occasional removal of sediment, and the repair of problematic erosion.

9.1.3 Detention/Retention Structures

There are detention/retention structures within the City that are not water quality features. These structures contribute to a reduction in peak flows downstream during storm events. These structures are sized to allow normal flows to pass, but during large storm events, water will back up behind them and will pass through the structures at a regulated rate. Depending on the size of the storm event, water will be detained for six to 24 hours. Maintenance will include occasional removal of vegetation and debris in accordance with the City's SAA with CDFG (see Appendix 6). The Open Space Manager will coordinate with the City's Floodplain Manager and Streets Division on all maintenance activities that will occur within Detention and Retention Structures.

9.1.4 Outfalls and Constructed Swales/Ditches

Run-off from developed areas reach the creeks or drainages within the City's Open Space. Previous Operations and Management Plans have restricted the placement of drainage outfalls and constructed swales/ditches to the perimeter of Preserve areas which can permanently and adversely impact the hydrology of vernal pools or inundate oak trees. As new projects are developed within the City, it is very difficult to know exactly where all of the outfalls will be located until full plan sets have been developed, especially in large specific plan projects. The following guidelines were developed by the City to eliminate the need for the project proponent or the City to continuously request approval for outfall placement from the Corps and the Service. The following guidelines apply for new outfalls and modifications to existing outfalls within existing and future Open Space Preserves. Outfall placement or modification in General Open Space will require the input and coordination with the Open Space Manager. Agency

notification will only be required for General Open Space if a permit is required. The relocation or modification of an outfall following permit issuance is subject to approval by the Corps, and may not be authorized solely by the Open Space Manager.

- Outfalls will not result in drainage flows being discharged into vernal pools or oak trees. Where needed, natural and constructed swales/ditches will be used to carry flows from outfalls to drainages to bypass vernal pools and oak trees.
- The installation of outfalls and constructed swales/ditches within Open Space Preserve that are designed according to the typical details presented in Appendix 15, meet the requirements of this section, and are shown in the project permit documents require no further notification to the Corps or the Service. If these outfalls move slightly (less than 100 feet) during final design, the Open Space Manager will review and approve the changes.
- Outfalls and constructed swales/ditches that are designed in a similar fashion to the typical drawings included in Appendix 15, but are not identified during project permitting or move significantly (100 feet or more), require approval by the Open Space Manager and notification to the Corps and the Service. This notification can be in the form of a figure included in the Annual Report (see Section 12.1) showing the locations and the type of outfall or constructed swale/ditch to be installed.
- Outfalls and constructed swales/ditches that cannot be designed in a similar fashion in the typical drawings and are not shown in the project permit documents require review and approval by the Open Space Manager, the Corps, and the Service.
- Outfalls and constructed swales/ditches that will directly impact wetlands/waters not anticipated as part of the project permits will require an amendment to the permits or an additional permit.

One of the Actions listed in Table 9-1 is to map existing City facility locations, including outfalls. This will allow for routine maintenance inspections. Maintenance (including the removal or spraying of vegetation within the constructed swales/ditches or adjacent to outfalls) or repair activities for drainage outfalls may occur as needed. If herbicides are used to control vegetation within constructed swales/ditches, only authorized herbicides and application methods are allowed and only in conjunction with implementation of the identified minimization measures, all as described in the Interim Invasive Plant Management Plan (Appendix 24) Attachment C: Herbicide Use Within City Open Space. Attachment C contains a description of all uses of herbicides, not just uses associated with invasive plant management. Selective use of herbicides to control vegetation that constricts flow may occur within all Waters of the U.S. except for vernal pools. A 60' buffer must be maintained around all vernal pools and elderberry shrubs when spraying for swale/ditch flow management.

Swales/ditches constructed for drainage purposes may be considered jurisdictional by the Corps. Any planned repair or replacement activities involving constructed swales/ditches require prior notification to the Open Space Manager, who will coordinate with the Corps.

If repair or replacement activities will impact wetlands or waters of the U.S., the Corps will be notified and any appropriate permits will be obtained.

9.1.5 Landscaping

Landscaping is often planned along Open Space boundaries. Landscape runoff can have the same impact on vernal pool hydrology and oak tree decline as misdirected stormwater. Runoff from landscaping can make additional wet areas that are not truly wetlands and therefore encourage weed growth that results in maintenance issues. In addition, landscape trees can also be invasive and become established within Open Space areas. Therefore, landscaping should be discouraged along Open Space boundaries. If the City determines that landscaping is desired along an Open Space boundary, the plants used will be locally native and drip irrigated such that the irrigation water remains in the landscaped area. In addition to using native plants, projects that abut Open Space shall be designed so that these projects slope away from the Open Space. In the event that grading cannot be sloped away from the project/preserve boundaries an interceptor swale or the like can be utilized. Landscaping will not occur within future Open Space Preserve or 50-foot transition zones.

9.1.6 Utilities and Associated Easements

There are many areas within both the Open Space Preserve and the General Open Space that are crossed by utility lines (Appendix 44 – *Utility and Outfall Locations*). In these situations, the respective party holds an easement for these utilities and has the right to access the utilities to monitor, maintain, inspect and repair or replace any facility. In the case of City-owned utilities, the City does not hold an easement over City-owned property.

Access will be limited only to that area needed to access the utility, complete any monitoring or inspection activity, and complete any required repair or replacement. In the case of utilities not owned by the City, access will be limited to the area allowed in the associated easement. The Actions listed in Table 9-1 will be followed. If repairs directly impact habitat for Endangered Species (unless allowed by the OSPOMP Biological Opinion), or waters of the U.S., appropriate permits will be obtained.

9.1.7 Stream Gauges

The Public Works Department maintains a network of flood alert gauges within the Dry Creek and Pleasant Grove watersheds that require access for periodic maintenance. The maintenance activities are not invasive and access is limited to use of existing access roads and trails.

9.1.8 *Ingress/Egress Easements*

There may be situations where there are pre-existing easements that occur within the Open Space, such as an egress/ingress easements. Although they may currently exist, it is likely they are not frequently used. It is not expected that the existence of these easements will cause impacts to the Open Space. In addition, construction activities within existing utility easements within the Open Space shall require an encroachment permit, and possibly a flood encroachment permit from the Public Works Department. With any application for an encroachment or flood encroachment permit within the Open Space, the Public Works Department will coordinate the proposed construction activities with the Open Space Manager.

9.1.9 Future Road Widening Projects

Several road widening projects adjacent to Open Space are anticipated for the future (see Figure 9-1). They are presented in this Plan for conceptual approval by the Agencies. When plans are developed the Open Space Manager will coordinate with the City's Public Works Department or applicable project manager, and the appropriate State and Federal Agencies for any permitting needs. Figure 9-1 depicts all existing and proposed road widening projects.

9.2 Emergency Facility Maintenance

From time to time, work may need to be conducted due to an emergency. Such work may result from emergencies that will impact waters of the U.S. and/or Endangered Species habitat or cause violations to Federal, State, or Local regulations. The City Utility providers have various contingencies for emergency situations. In these cases the plans would be coordinated with the OSPOMP and the policies contained therein. See Section 12.4 for a discussion of emergency permit procedures.

9.3 Maintenance Impacting Listed Species

Although measures (see Table 9-1) will be taken to avoid direct and indirect impacts to Endangered Species, some impacts may occur as a result of required routine maintenance and ensuring public safety. In recognition of this, a Biological Opinion for this OSPOMP was issued by the Service (see Appendix 13). See Section 3.7.1 for a description of the allowed impacts by type of activity.

9.4 City Facility Maintenance Monitoring

9.4.1 Monitoring Goal

The Goal of City facility monitoring will focus on determining if maintenance, replacement, or modifications are needed (e.g., outfall design modifications required to prevent erosion) (see Table 9-1.

9.4.2 Monitoring Timeline

City facility maintenance will occur on an on-going basis

9.4.3 Actions, Responsible Parties, and Timing

Table 9-2 summarizes the actions, responsible parties, and timing for facility maintenance monitoring.

Table 9-2. Facility Maintenance Monitoring Summary

Action Summary	Responsible Party	Timing	Action Funding Status
Monitor city facilities.	Alternative Transportation/Engineering Environmental Utilities/Public Works/Open Space Manager/Creek Crew	On-going	Funding provided by individual Dept. budgets
Identify maintenance, replacement, or modifications needed and propose work required. Coordinate with Open Space Manager.	Alternative Transportation/Engineering Environmental Utilities/Public Works/Open Space Manager/Creek Crew	Prior to work within the Open Space.	Funding provided by individual funding provided by individual Dept. budgets
Obtain regulatory permits, if needed.	Alternative Transportation/Engineering Environmental Utilities/Open Space Manager/Environmental Coordinator	As needed.	Funding provided by individual project budgets
Identify restoration measures, if needed.	Open Space Manager/Facility or Utility Project Manager	As needed.	Funding provided by individual Dept. budgets
Identify changes in facility design	Engineering/Public Works/Open Space Division	As needed	Funding provided by individual Dept. budgets

10.0 PROHIBITED ACTIVITIES WITHIN OPEN SPACE PRESERVE AREAS

10.1 Prohibited Activities

This section outlines the restrictions on activities that can take place in Open Space Preserves. It is understood that the following activities are prohibited, except as needed to accomplish the management, monitoring, and maintenance activities described in the OSPOMP. Additionally, if any of these prohibited activities must be undertaken due to special circumstances, they may be reviewed and approved by the Agencies on a case-by-case basis.

Prohibited and allowed activities in General Open Space is defined by the City's zoning ordinance. Although activities in General Open Space are not restricted by the OSPOMP, the Open Space Manager will review any proposed activities falling in the categories listed below to minimize any impacts to Open Space resources.

10.2 Access to the Open Space Preserve

The intent of Open Space Preserve is to protect these areas in perpetuity. Limited access to the Open Space Preserve areas will further this goal. Access to the Open Space Preserve for the activities discussed in the OSPOMP is allowed. All other off-trail public access to the Open Space Preserve areas is not allowed. Access to the City's Open Space should be through the paved Class I bike trail system, paved roads for utility or drainage facilities, or social trails approved by the Open Space Manager. The public can learn to respect and enjoy the protected habitats if they are provided appropriate access.

As discussed in Section 8.3.8, residents often form walking trails through Open Space were no trails exist or where walking through the Open Space is shorter than taking a designated trail. Due to the sensitive communities within the Open Space Preserve areas, the Open Space Manager will take steps to prevent social trails from forming within Open Space Preserve areas that support endangered/threatened species habitat. In these areas, regular, off-trail pedestrian access to these Open Space Preserve areas should be discouraged through fencing and signage. Within Open Space Preserves without Endangered Species habitat, the Open Space manager will evaluate the impact of walking trails and allow trails that are not problematic to remain. Such trails within less sensitive communities can allow residents to appreciate and therefore value the City's biological resources, a goal of this Plan.

10.3 Vegetation Removal

No killing, removal, or alteration of any existing native vegetation shall be allowed in the Open Space Preserve except as described in the OSPOMP.

10.4 Burning and Dumping

No burning or dumping of rubbish, garbage or any other wastes or fill materials shall be allowed in Open Space Preserve. The foregoing prohibition shall not be interpreted to prohibit controlled burning as a method of thatch management.

10.5 Disking

No disking shall occur in the Open Space Preserve areas except within Community Gardens.

10.6 Additional Roads, Trails, and Utility Lines

New roads, trails, and utility lines shall not be permitted in the Open Space Preserve without review and approval of the Corps and the Service. Future facilities identified in OSPOMP shall not require such review and approval.

10.7 Equipment or Fuel Storage

There shall be no equipment or fuel storage within the Open Space Preserve except within the Community Gardens and then, only for gardening equipment. The only other exception would be when the equipment or fuel is stored during construction of an approved utility line or infrastructure project when that storage is recognized by the project's regulatory permits.

10.8 Topography

Once adjacent development is complete and authorized structures (e.g., detention berms, outfalls, bike trails) have been constructed, no alteration shall be made to the existing topography of the Open Space Preserve. This includes leveling or grading. If, during the monitoring period, success monitoring indicates that a constructed wetland feature is not functioning correctly and re-grading is needed to achieve proper drainage and/or wetland function, then that is allowed. Tilling the soil in the Fiddyment Ranch Community Garden (may include leveling or grading) is allowed. No exploration, development, or extraction of oil, gas or minerals may be made from the surface of the Open Space Preserve.

10.9 Pesticides and Chemical Agents

Except as outlined in the OSPOMP or as approved by the Agencies in the future, pesticides, fungicides, insecticides or any other chemical agents used to kill or suppress plants, animals, or fungi shall not be used in the Open Space Preserve areas.

10.10 Motor Vehicle Use

Motor vehicle use is not allowed within Open Space Preserve unless it is associated with a management, maintenance or monitoring activity allowed in the OSPOMP.

10.11 Construction

Once development is complete and the structures and improvements called out in the regulatory permits associated with the development are in place (e.g., detention basin, water quality basins, outfalls, bike trails), no construction, placement of new structures, or new roads shall be allowed in the Open Space Preserve unless approved by this Plan, without the review and approval of the Agencies.

10.12 Non-Native Plants

No non-native plants shall be purposefully planted in the Open Space Preserve except as allowed in the Community Gardens (see Section 11.2.1).

10.13 Watercourses

No manipulating, impounding, or altering any natural watercourse, body of water or water circulation on the Preserve Area and any activities or uses detrimental to water quality including but not limited to, degradation or pollution of any surface or sub-surface waters unless otherwise required for emergency repairs or maintenance purposes.

10.14 Other Prohibited Activities

The following activities are also prohibited within Open Space Preserve except as provided for in the OSPOMP unless written Service and Corps approval is obtained (this may include a permit): erecting of any building, billboard, or signs; grazing or other agricultural activity of any kind; use of off-road vehicles; planting, introduction or dispersal of non-native or exotic plant or animal species; unseasonable irrigation, use of herbicides, rodenticides, incompatible weed abatement activities; incompatible fire protection activities, depositing of soil, trash, ashes, garbage, waste, bio-solids or any other material, excavating, dredging or removing of loam, gravel, soil, rock, sand or other material; granting use of the land to any third party for off-road vehicle use; recording of a subdivision plan, partition, or any other division of the Open Space Preserve into more parcels than exist on 1 July 2009; paving or otherwise covering of the Preserve with concrete, asphalt, or any other impervious paving material; transferring any appurtenant water right required to maintain and restore the biological resources of the Open Space Preserve, or granting surface entry for the exploration, mining, drilling, or extraction of minerals.

11.0 RECREATION, EDUCATION, PARTNERSHIPS, AND VOLUNTEER OPPORTUNITIES

11.1 Recreational Use Goals

The Goals for recreational use within the City's Open space center around providing appropriate passive recreational opportunities while minimizing the impacts of visitor use on biological resources. These Goals and the associated Actions are presented in Table 11-1.

11.2 Recreational Use/Access Description

Recreation within the City's Open Space is important for the community's enjoyment of Open Space resources. At the same time, minimizing impacts to biological resources associated with recreational use is a key goal of this plan. In General Open Space, recreational uses (e.g., birding, biking, walking/running) will be allowed off-trail. Allowed recreational uses within Open Space Preserve are use of the bike trails (including City and Federal authorized bike jump or skills parks), social trails located away from Endangered Species habitat and approved by the Open Space Manager, outlook points, and Community Gardens. Within the General Open Space, additional allowed recreational uses are fishing with an appropriate fishing license and following all laws and regulations regarding fishing, and additional community gardens. Hunting and off-leash dog exercise is prohibited within all Open Space areas. There are four off-leash dog parks within the City located in Mahany, Saugstad and Hughes Parks and one on Sierra Gardens Drive (Marco Dog Park).

11.2.1 Community Gardens

There is one community garden currently planned for the City. Within the West Roseville Specific Plan, a 2-acre community garden is planned within the Fiddyment Ranch Open Space Preserve (Figure 11-1. *Community Garden*). Prior to the development of the Fiddyment Ranch project, this area was an active pistachio orchard. Given the historic agricultural use of the area, a community garden is a compatible use within this portion of the Open Space Preserve. The Fiddyment Ranch Community Garden will be fenced and may include a small parking lot, which will also be allowed within the Open Space Preserve. The garden will also avoid impacting existing oak woodland adjacent to the creek.

At the time the garden is established, no Agency notification is required. Within the defined community garden area, restrictions on pesticides and chemical agents (although an organic garden could be encouraged), planting (native or non-native plants), grading, plowing, cultivation, storing or placing materials or debris, leveling or grading, etc., do not apply as they do to the remainder of the Open Space Preserve. Additionally, motorized equipment, such as tractors or other motorized garden/farm equipment can be operated in the Fiddyment Ranch Community Garden. A list of species that have the potential to spread out of community gardens and become problematic in the remainder of the Open Space Preserve/General Open Space has been included as Appendix 45. These species should not be planted in the garden, or should be planted with caution. If additional species are discovered to be invasive, they should be appended to the list.

Table 11-1

Figure 11-1

Additional community gardens may be established within General Open Space where impacts to sensitive biological resources will not occur. For example, the City owns several parcels that are within General Open Space that were graded for residential homes, but were not developed due to flooding concerns and the habitat is currently ruderal vegetation or grassland. Community gardens may be appropriate in these locations.

11.3 Educational Use and Public Outreach Goals

Education and public outreach are the best ways to increase staff and resident awareness about the value of Open Space, build community support for Open Space issues, and reduce unintentional impacts to Open Space resources. Therefore, the Goals and Actions for educational use and public outreach encourage safe and appropriate use of the City's Open Space for educational purposes, educating City staff about Open Space issues, and providing resource-oriented interpretive programs, facilities, and educational materials to residents as outlined in Table 11-2.

11.4 Educational Programs and Educational Use Description

Education of City' staff, contractors, residents, and visitors is the best way to increase awareness of Open Space issues, build support for protecting Open Space resources, and minimize City expenditures to correct Open Space impacts.

11.4.1 City Staff/Contractor Education

There are many opportunities to provide training to City staff. Training events can range from brown bag lunch presentations on vernal pool species to formal training events for City maintenance staff or contractors. It is important that City staff and contractors that work within the Open Space or City staff that plan or provide approvals for construction in, and adjacent to the City's Open Space understand the City's policies and procedures for Open Space issues.

11.4.2 Community Education/Interpretive Programs

Both the General Open Space and the Open Space Preserve represent an opportunity to encourage a sense of ownership and respect for Open Space and wildlife habitat in residents and visitors. Use of the Open Space for educational purposes will be limited to students, parents, and faculty of the local school district, local area residents, or other persons with the consent of the Open Space Manager. Individuals or groups using the Open Space for educational purposes will coordinate their use with the Open Space Manager. Educational activities within Open Space Preserve will be passive in nature, such as walking through the Open Space to discuss plants and animals of the wetland habitats.

If permanent active use is proposed (e.g., mowed trail used weekly) other than the Woodcreek Nature Center (see below) within Open Space Preserve, review and approval of the Agencies is required. To avoid repeated inquiries with the Agencies, a use plan could be developed by the interested school or school district for a one-time approval. See Section 12.2, for review and notification information. Regular educational use of General Open Space areas only requires the consent of the Open Space Manager who will evaluate the potential impacts on General

Table 11-2

Open Space resources and will balance the potential impacts with the educational benefit of each given activity.

There are three ongoing educational/interpretive programs that utilize Open Space Preserve or General Open Space: Woodcreek High School, Adelante High School, and the Maidu Interpretive Center. Additional programs may be identified in the future.

Woodcreek Nature Center

The Woodcreek Nature Center (WNC) falls within the Silverado Oaks Urban Reserve Open Space Preserve and includes some additional General Open Space to the north. The WNC includes a mowed nature trail with informational signage, post and cable fencing, kiosk displays, benches, and discussion areas (Appendix 46). Plantings that have been installed as part of the WNC within General Open Space have themes: xeriscape, plants used by Native Americans, butterfly garden, and California bulbs. Oak woodland and riparian plantings are located within the Open Space Preserve. An experimental garden is part of the overall plan, but will not be located within the Open Space Preserve.

During and after the improvements are made, classes will be visiting the WNC to learn about the various plants and animals that are found in the Open Space. Additional regular activities include invasive plant species removal and Open Space clean up.

Corps Approval

This WNC plan was accepted by the Corps on 15 May 2003 (Appendix 47). No further notification of the Agencies will be required if the improvements are implemented consistent with the information presented in Appendix 46. However, the teachers at the WNC will keep the Open Space Manager updated on activities at the WNC. Any new activity will require the consent of the Open Space Manager, who will contact the Corps for approval if the activity would result in impacts to preserved wetlands or waters of the U.S. Additionally, teachers who use the WNC will provide the Open Space Manager with a summary report of what was accomplished during the year. This report will be included in the annual letter report that is submitted to the Agencies each year (see Section 12.1).

Planting Placement/Construction Observation

Prior to the installation of the native plantings at the WNC, a qualified biologist will review the planting locations to ensure that they are habitat appropriate. During initial mowing of the trail (to ensure proper alignment) and the placement of any structures in the Open Space Preserve, a biologist will be on-site to observe the construction activities.

Maidu Interpretive Center

A portion of the land set aside for the Maidu Interpretive Center falls within General Open Space covered by the OSPOMP. Docent led educational tours follow a compacted soil/mowed trail adjacent to the Strap Ravine riparian area and educational signage has

been installed. Habitat maintenance and restoration projects are also conducted within this area.

11.4.3 Research Projects

Scientists, students, and other groups desiring to use the Open Space as part of a research project, must obtain the Open Space Manager's approval. Researchers who will be working directly with Endangered Species or are conducting a project that impacts their habitat must first gain approval from the appropriate Agency(s).

11.5 Recreational and Educational Use Monitoring

Monitoring for recreational use impacts will occur with the General Inspections (see Section 8.4) and will focus on social trails, location of high use areas that are resulting in trampling or erosion, and other adverse impacts resulting from allowed recreational use. If it is determined through monitoring that impacts have occurred as a result of recreational uses the City will determine how to avoid future impacts.

11.5.1 Monitoring Goal

The goal of recreational and educational use monitoring is to determine if the recreational, educational, interpretive, opportunities are taken advantage of by residents and if these uses are having an adverse impact on the Open Space resources (see Table 11-2).

11.5.2 Actions, Responsible Parties, and Timing

The following table summarizes the actions, responsible parties, and timing for recreational and educational use monitoring.

Table 11-3. Recreational and Educational Use Monitoring Summary

Action Summary	Responsible Party	Timing	Action Funding Status
Monitor for recreational and educational use impacts.	Open Space Division	Monthly with General Inspections.	Quarterly inspections funded for OSP only.
Monitor for use of recreational and educational opportunities (e.g., resident surveys).	Open Space Division	As desired.	Not yet funded.
Correct impacts associated with educational and recreational use.	Open Space Division	As soon as possible as appropriate for the habitat type and when funding is available.	Some management funded within OSP only.
Determine if changes can be made to eliminate future impacts.	Open Space Division	When impacts are identified, as soon as possible and when funding is available.	Some management funded within OSP only.

11.6 Partnership Goals

Creating and maintaining partnerships both within the City and outside the City limits are important and can increase the success of open space management and maintenance. This includes collaborating with Open Space staff from other cities and counties to exchange ideas, increase the resources that can be brought to bear on Open Space management, and increase efficiency and coordination in addressing Open Space related concerns. Additionally, collaborating with private or non-profit landowners within the City whose land is zoned as Open Space or is an Open Space Preserve, particularly private owners of creek-side property (it is the most common privately-held Open Space land) is important. Outreach to collaborate with individuals, neighborhood groups, businesses, schools, non-profit organizations, natural resource agencies, and other organizations to meet their goals will enhance the City's ability implement the OSPOMP. The Goals and Actions relating to partnerships are outlined in Table 11-4.

11.7 Partnerships and Volunteer Opportunities

11.7.1 Partnerships

The City will pursue partnerships with various individuals, organizations, and adjacent cities and counties to further both the City's and partner's Open Space goals.

11.7.2 Volunteer Opportunities

"Creek Week" or Community Clean-Up Days

The City of Roseville currently participates in Creek Week, a week-long celebration of the local creeks that takes place in April. This event includes a clean-up day where teams of residents pick up trash or remove invasive plants along a portion of creek and the adjacent Open Space. Individuals or groups participating in the Creek Week clean-up will coordinate their use of the Open Space with the Open Space Manager. More extensive use of Open Space Preserve during Creek Week, such as restoration activities may require notification of the Agencies. See Sections 12.2 and 12.3.

Other Volunteer Opportunities

The City will develop other Open Space opportunities for volunteers over time. These may include an Adopt a Trail/Adopt an Open Space program, a Volunteer Naturalist Program, or a volunteer monitoring program.

11.7.3 Partnerships and Volunteerism Monitoring

Monitoring Goal

The Goal of partnership and volunteerism monitoring is to determine if these partnerships and volunteer programs are working as intended and if partners and volunteers are satisfied with the outcome of working with the City (see Table 11-4).

Table 11-4 (pg 1 of 2)

Table 11-4 (pg 2 of 2)

Actions, Responsible Parties, and Timing

The following table summarizes the actions, responsible parties, and timing for partnership and volunteerism monitoring.

Table 11-5. Partnership and Volunteerism Monitoring Summary

Action Summary	Responsible Party	Timing	Action Funding Status
Review partnership results or volunteer programs for success.	Open Space Division	As desired.	Not yet funded.
Monitor for use of recreational and educational opportunities.	Open Space Division	As desired.	Not yet funded.

12.0 REPORTING REQUIREMENTS AND AGENCY NOTIFICATION PROCESS

12.1 Annual Reporting Requirements

With input from the Open Space Manager, the Monitoring Biologist will prepare a comprehensive Annual Report addressing the status of the City's Open Space Preserve system. A monitoring report for the General Open Space is not required. The report will be submitted to the Corps and the Service by June 30th of each year. It will include at minimum, a map of the City's Open Space Preserve system, representative photos, a description of proposed activities and maintenance or management actions required by the OSPOMP, a description of actions for which Corps and Service notification or approval was not needed, but were carried out during the year, a summary of all take of federally-listed species habitat (e.g., acres of vernal pool restored or number of elderberry shrubs/stems trimmed) (authorized and/or unauthorized) that occurred during the monitoring year as a result of management actions, observations from the various general and biological inspections/surveys, and recommendations for altered management practices as needed. The report will refer to the Corps regulatory branch number for the Plan, which will be forthcoming and the Service file number which is 81420-2008-F-1958-3. The report will be sent to the attention of Chief, Sacramento Valley Office, Regulatory Branch, at the Corps and Division Chief, Endangered Species Branch, Sacramento Field Office, at the Service.

12.2 Review and Approval

For those activities noted in this Plan as requiring Corps and Service review and approval, the following actions will be taken. All efforts will be made to outline the activities for the coming year in the annual letter report, which is submitted by June 30th of each calendar year. If this is not possible, then the Open Space Manager will submit a separate letter to the Agencies. Either will include a written description of the activity, including when the activity will take place and what methodology will be used, as well as a map showing what areas will be targeted. The Agencies will have 60 days to review, discuss, and approve or disapprove the activity. For these activities, the approval from the Agencies must be written. Submittal of activities for review and approval as well as written approval back from the Agencies will be made either by fax, email, registered mail, or overnight transmittal.

12.3 Activities Requiring a Permit

Some of the activities mentioned in this plan may have the potential to "impact" wetlands or waters of the U.S. The term "loss of waters of the U.S.", which is the closest term defined in the Federal Register to "impact", is defined on page 2094 of the Federal Register, Volume 67, No. 10 / Tuesday, January 15, 2002 / Notices, as follows:

> Waters of the U.S. that include the filled area and other waters that are permanently adversely affected by flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent above-grade, at-grade, or below-grade fills that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the U.S. is the threshold measurement of the impact to the existing waters for determining whether a project may qualify for a NWP; it is not a net threshold

calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and values. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the U.S. temporarily filled, flooded, excavated, or drained, but restored to preconstruction contours or elevations after construction, are not included in the acreage or linear foot measurements of loss of waters of the U.S. or loss of stream bed, for the purposes of determining compliance with the threshold limits of the NWPs.

The purpose of this section is to clarify that while the OSPOMP may call out future activities as allowed in the Open Space, this does not mean that the activity does not require a separate authorization (permit) under Section 404 of the Clean Water Act if it will impact waters/wetland not previously permitted. Also, if a project will not result in the permanent loss of wetlands or waters of the U.S., only temporary loss or "impact", a permit is still required. There are several Nationwide Permits (Nationwide Permits, are permits for activities resulting in the loss of less than 0.50 acre of wetlands or waters of the U.S.) currently available for maintenance activities. These are NWP 3, *Maintenance*; NWP 7, *Outfall Structures and Maintenance*; NWP 12, *Utility Line Activities*; and NWP 31, *Maintenance of Existing Flood Control Facilities*. Specific maintenance activities may also qualify for the Clean Water Act Section 404(f) exemption for maintenance. If there is a question regarding whether a maintenance activity will require a Corps permit, the Open Space Manager should seek guidance from the Corps. If Corps permit is required, the Corps may also need to consult with the Service or NOAA Fisheries/NMFS regarding impacts to endangered/threatened species.

Some of these activities may also need a Streambed Alteration Agreement from the CDFW. Pursuant to Section 1600- of the California Fish and Game Code, the CDFW requires entities obtain a Streambed Alteration Agreement for activities affecting the bed, bank, or channel of a lake, river, stream, or drainage, as defined by CDFW.

12.4 Emergency Situations

Should an emergency situation arise that requires immediate action in an upland area, and would normally require that the Corps and/or Service be notified or have review and approval authority, the Corps and/or Service will be notified verbally within forty-eight hours, with written confirmation of the actions taken within one week. In these situations, "emergency" is a situation which would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship.

Should an emergency situation arise that requires immediate action in a wetland or waters of the U.S., but would normally require that a permit be obtained from the Corps, the following applies as stated in the Code of Federal Regulations, Title 33, Chapter II, Part 325, Section 325.2 - Processing of Applications:

> Emergency procedures – Division engineers are authorized to approve special processing procedures in emergency situations. An "emergency" is a situation which would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process the application under standard procedures.

California Department of Fish and Game Code Section 1600- also has emergency work procedures. Section 1610 exempts certain types of emergency work from the normal notification requirement. These are generally: immediate emergency work necessary to protect life or property, immediate emergency repairs to public facilities resulting from a disaster, and highway work within the highway right-of-way resulting from a disaster. The code also defines an emergency and outlines the process for permit submittal. Please see Appendix 48 for the CDFW information sheet on emergency work and the associated notification form.

12.5 Notification Regarding Listed Species

Within three (3) working days of finding any dead or injured individuals of any species listed under the federal Endangered Species Act, or any unauthorized take of the species listed in the Biological Opinion, the Preserve Manager must notify the U.S. Fish and Wildlife Service, Division Chief of Endangered Species at (916) 414-6600, or applicable number at that time. All such notices shall include the date, time and location of the incident or of the findings of a dead or injured animal.

All notices regarding listed species for each calendar year shall be included in the annual monitoring report for that year.

12.6 Changes in Notification Requirements

The City, the Service, and the Corps may agree to change the notification requirements for certain activities that do not require a permit. These would be cases where repeated notification or requests for approval have been made for a certain activity and a course of action has been established. To reduce staff time required from both the City and the Agencies, the City would follow the approved course of action and notification would not be required.

12.7 Agency Monitoring/Inspection

The Corps and the Service may inspect and monitor the condition of the Preserve at any time.

12.8 Notices

Any notices regarding this Plan shall be directed as follows:

Property Owner and PRL Superintendent:

City of Roseville, Parks, Recreation & libraries Department
Attn: PRL Superintendent
2005 Hilltop Circle
Roseville, California 95747
Phone: (916) 774-5200
Fax: (916) 746-1759

U.S. Army Corps of Engineers, Sacramento District
Attn: Chief, Regulatory Branch
1325 J Street, 14th Floor
Sacramento, California 95814-2922
Telephone: (916) 557-5250
Fax: (916) 557-6877

U.S. Fish and Wildlife Service, Sacramento Field Office
Attn: Field Supervisor
2800 Cottage Way, W-2605
Sacramento, California 95825
Telephone: (916) 414-6600
Fax: (916) 414-6713

13.0 ACRONYMS AND ABBREVIATIONS

Agencies	US Fish and Wildlife Service and US Army Corps of Engineers
BMPs	Best Management Practices
Biological Opinion	Open Space Management Plan Biological Opinion
CC&Rs	Covenants, Conditions, and Restrictions
CDFW	California Department of Fish and Wildlife
CDFW SAA	California Department of Fish and Wildlife Streambed Alteration Agreement
CEQA	California Environmental Quality Act
CFDs	Community Facilities Districts
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
City	City of Roseville
Corps	U.S. Army Corps of Engineers
Creek Maintenance Guidelines	City of Roseville Creek Maintenance Guidelines
DBH	Diameter at Breast Height
Deed Restrictions	Declaration of Covenants and Restrictions
District	Placer County Mosquito and Vector Control District
ESA	Endangered Species Act
ESU	Evolutionary Significant Unit
Endangered species	Service-regulated threatened or endangered species
GIS	Geographic Information Systems
GOS	General Open Space
GPS	Global Positioning System
Guidelines	Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods
HCP	Habitat Conservation Plan
LLDs	Lighting and Landscape Districts
MOU	Memorandum of Understanding
NMFS	National Marine Fisheries Service
NOAA Fisheries	National Oceanic Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Soil Conservation Service
NWP	Nationwide Permit
PGWTP	Pleasant Grove Wastewater Treatment Plant
Plan	City of Roseville Open Space Management Plan
POS	Open Space Preserve
OHV	Off-Highway Vehicle
OSPOMP	City of Roseville Open Space Management Plan
RCRMRP	Roseville Creek and Riparian Management and Restoration Plan
RDM	Residual Dry Matter
Recovery Plan	Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon
SPCA	Society for the Prevention of Cruelty to Animals
SWPPP	Stormwater Pollution Prevention Plan

Service	United States Fish and Wildlife Service
US	United States
USDA	United States Department of Agriculture, Soil Conservation Service
VELB	Valley Elderberry Longhorn Beetle
WBWG	Western Bat Working Group
WNC	Woodcreek Nature Center

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