

APPENDIX P

Operations and Management Plan for Folsom Plan Area Specific Plan Open
Space Corridor

Operations and Management Plan
For
Folsom Plan Area Specific Plan
Open Space Corridor
Sacramento County, California

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Prepared For:
Folsom South Area Group



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1.0 INTRODUCTION

1.1 Setting

The approximately 3,502-acre Folsom Plan Area Specific Plan (SPA) is located in the City of Folsom, Sacramento County, California. It is bound by Highway 50 to the north, Prairie City Road to the west, White Rock Road to the south, and the El Dorado County line to the east (Figure 1. *SPA Open Space Site and Vicinity*). The SPA corresponds to portions of Sections 15 through 22 of Township 9 North and Range 7 East of the “Buffalo Creek, Clarksville, Folsom, and Folsom SE, California” U.S.G.S. 7.5-minute quadrangles (USGS 1978;1980).

The SPA is a large-scale, mixed-use, master-planned community consisting of mixed-density residential uses, a regional shopping center, and other employment generating uses. The SPA will also provide associated infrastructure including on-site backbone infrastructure, a water treatment plant, schools, parks, an on-site trail system, off-site sewer improvements, off-site roadway improvements, off-site highway interchanges, and an off-site water supply pipeline from the Freeport Regional Water Authority diversion facility to the site. In addition to the development, the SPA calls for the permanent protection of approximately 30 percent of the site as on-site open space. The approximately 990-acre SPA Open Space will permanently protect oak woodlands, waters of the U.S., cultural resources, and other sensitive habitat or species. SPA Open Space consists of two components; Wetland Preserve (± 302 -acres) contains sensitive habitats and waters of the U.S. and will be protected by agency-approved Declaration of Restrictions. The Passive Open Space (± 688 -acres) will be established to protect oak woodland/savannah per City of Folsom (City) guidelines while allowing for limited recreational uses such as a trail system. The Passive Open Space will be zoned as Open Space, thus restricting future development. The *SPA Open Space Detail* map included as Attachment A shows the two components that make up the SPA Open Space.

1.1.1 Regulatory Background

The development of the SPA will built out over approximately 20 years. The SPA phases will not conform necessarily to individual applicant’s property boundaries, but are grouped into four logical geographical areas of development based on infrastructure needs. These are referred to in Attachment B as the West, North, South, and East Development Areas, respectively. Attachment B illustrates the general intent to phase the development over the full build out of the SPA, each graphic represents a given phase.

As each phase moves forward, any changes to the SPA Open Space layout or phasing will be submitted to the appropriate agencies for review and approval and an amendment for this Management Plan will be prepared. It is anticipated that as each property within the SPA is developed, a portion of the SPA Open Space will be established and a declaration of restrictions for that portion of the Wetland Preserve will be recorded (Attachment C). Please see the Regulatory Background section for a further discussion of the SPA permit history.

The project proponents for the SPA are seeking authorization to fill waters of the United States from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. The development of the project area is being guided by a Specific Plan.

There are currently eight applicants(or pending applicants) that are part of the SPA, composed of seven private developers and the City. The seven private applicants own specific properties (projects) within the SPA. The City is the eighth applicant and will have jurisdiction over the SPA roadways and other backbone infrastructure. These applicants will all proceed with development under the guidelines of the SPA and its EIR/EIS, but on their own schedules and under separate permits from the USACE. The exception is the possible need to construct portions of the backbone infrastructure first (under the permit application by the City), which passes through or adjacent to each of the applicant's properties and will require collaboration.

Individual Permit authorizations (Permits) for each project within the SPA will be obtained from the USACE to authorize impacts to waters of the U.S., including wetlands. As each project obtains authorization, the Permits will be included in this document as Attachment D. The table included in Attachment E summarizes the anticipated impacts associated with each project within the SPA. This table will be updated throughout the permitting process for each property within the SPA. In total it is anticipated that the development will impact 39.335 acres of waters of the U.S. and 1.254 acres of waters of the State, while avoiding 44.308 acres of waters of the U.S. and 0.047 acre of waters of the State.

Additionally, a U.S. Fish and Wildlife Service (USFWS) Biological Opinion will be issued for each project within the SPA that results in impacts to species listed as endangered or threatened under the federal Endangered Species Act (ESA). A Section 7 consultation is the process by which federal agencies, permitting an otherwise legal activity, consult with the USFWS to authorize the "incidental take" of species listed as threatened or endangered under ESA. The Biological Opinion for each project will be included in this document as Attachment F. Biological Opinions are issued as a result of a ESA, Section 7 consultation between the USACE and the USFWS.

This *Operations and Management Plan for the Folsom Plan Area Specific Plan Open Space Corridor* (Plan) was prepared in anticipation of special conditions of the Permits and Biological Opinions requiring the development of a long-term management plan for the portions of the SPA that contain preserved wetlands or ESA species habitat.

1.1.2 Prehistoric and Historic Uses

1.1.2.1 Prehistory

It is generally believed that human occupation of California began at least 10,000 years before present (BP). The archaeological record indicates that between approximately 10,000 and 8,000 years BP, a predominantly hunting economy existed, characterized by archaeological sites containing numerous projectile points and butchered large animal bones. Animals that were hunted probably consisted mostly of large species still alive today. Bones of extinct species have been found, but cannot definitely be associated with human artifacts. Although small animal bones and plant grinding tools are rarely found within archaeological sites of this period, small game and floral foods were probably exploited on a limited basis. A lack of deep cultural deposits from this period suggests that groups included only small numbers of individuals who did not often stay in one place for extended periods (Wallace 1978).

Around 8,000 years BP, there was a shift in focus from hunting towards a greater reliance on plant resources. Archaeological evidence of this trend consists of a much greater number of milling tools (e.g., metates and manos) for processing seeds and other vegetable matter. This period, which extended until around 5,000 years BP, is sometimes referred to as the "Millingstone Horizon" (Wallace 1978). Projectile points are found in archaeological sites from this period, but they are far fewer in number than from sites dating to before 8,000 years BP. An increase in the size of groups and the stability of settlements is indicated by deep, extensive middens at some sites from this period (Wallace 1978).

In sites dating to after about 5,000 years BP, archaeological evidence indicates that reliance on both plant gathering and hunting continued as in the previous period, with more specialized adaptation to particular environments. Mortars and pestles were added to metates and manos for grinding seeds and other vegetable material. Flaked-stone tools became more refined and specialized, and bone tools were more common. During this period, new peoples from the Great Basin began entering southern California. These immigrants, who spoke a language of the Uto-Aztecan linguistic stock, seem to have displaced or absorbed the earlier population of Hokan-speaking peoples. During this period, known as the "Late Horizon," population densities were higher than before and settlement became concentrated in villages and communities along the coast and interior valleys (Erlandson 1994; McCawley 1996). Regional subcultures also started to develop, each with its own geographical territory and language or dialect (Kroeber 1925; McCawley 1996; Moratto 1984). These were most likely the basis for the groups encountered by the first Europeans during the eighteenth century (Wallace 1978). Despite the regional differences, many material culture traits were shared among groups, indicating a great deal of interaction (Erlandson 1994). The introduction of the bow and arrow into the region sometime around 2,000 years BP is indicated by the presence of small projectile points (Wallace 1978; Moratto 1984).

1.1.2.2 Local Prehistory

The earliest evidence of the prehistoric inhabitants of the region surrounding the project area comes from a single, deeply buried site in the bank of Arcade Creek, north of Sacramento, containing grinding tools and large, stemmed projectile points. The points and grinding implements suggest an occupation date of some time between 8,000 and 5,000 BP (Wallace 1978). However, it was not until after about 5,500 BP, in the Late Archaic Period, when people began to move into the San Joaquin and Sacramento Valleys in any significant numbers. This earliest permanent settlement of the Delta region of the Sacramento River is called the Windmill Tradition and is known primarily from burial sites containing relatively elaborate grave goods (Ragir 1972; Wallace 1978). The Windmill Tradition reflects the amplification of cultural trends begun in the Middle Archaic, as seen in the proliferation of finished artifacts such as projectile points, shell beads and pendants, and highly polished charmstones. Stone mortars and pestles, milling stones, bone tools such as fishhooks, awls, and pins, are also present. It is probable that people during this time subsisted on deer and other game, salmon, and hard seeds. They also were apparently the first Californians to discover the process for leaching the tannins out of acorns, thus making them edible by humans. Based on linguistic evidence, it has been suggested that the Windmill culture was ancestral to several historic tribes in the Central Valley, including the Penutian-speaking Nisenan (Elsasser 1978). The Windmill Tradition lasted until about 3,000 BP.

Around 3,000 BP, subsistence strategies in the Delta region became noticeably more “focal,” with a clear increase in the reliance on acorns and salmon (Elsasser 1978). Culturally, this has been dubbed the Cosumnes Tradition (3,700 to 1,000 BP), and appears to be an outgrowth of the Windmill Tradition (Ragir 1972). People in this time continued to occupy knolls or similar high spots above the floodplain of the Sacramento River and the terraces of tributaries such as the Cosumnes and American Rivers, flowing out of the foothills of the Sierra Nevada mountains located to the east. Populations increased and villages became more numerous than before, with more milling tools and specialized equipment for hunting and fishing. Trade appears to have increased, with burials containing larger amounts of seashell and obsidian. Burial styles, too, became more varied, with the addition of flexed interments along with the extended ones of the Windmill period. Projectile points found embedded in the bones of excavated skeletons suggest that warfare was on the rise, possibly as a result of increased competition over available resources and trade (Beardsley 1954; Lillard *et al.* 1939; Ragir 1972).

The next, and final, discrete prehistoric culture is the Hotchkiss Tradition (1,000 to 181 BP [AD 1769]) that persisted until the arrival of European settlers in central California (Beardsley 1954; Ragir 1972). During this period, use of acorns and salmon reached its peak, along with hunting of deer. Diet was supplemented with the addition of waterfowl, hard seeds, and other resources. Large sedentary villages along the lower Sacramento and San Joaquin Rivers, and their tributaries and delta were common. The size and density of these settlements suggest a further increase in population from Cosumnes times. Trade goods were plentiful, and burials exhibit a marked stratification of society with wide differences in the amount and variety of funerary objects. Cremation of the dead appears, along with the flexed inhumations of the previous period (Ragir 1972). While ornamental or ritual artifacts, such as large, fragile projectile points and trimmed bird bone increase during this period, milling tools are rare or absent. Shell beads are found in large numbers, and there are numerous utilitarian artifacts of bones such as awls, needles, and barbed harpoon points. Polished charmstones are rare during this time, but ground stone pipes become more abundant. In addition, fired and unfired clay objects begin to appear.

1.1.2.3 Ethnography

Ethnographically, the project area is in the southwestern portion of the territory occupied by the Penutian-speaking Nisenan. The territory extended from the area surrounding the current City of Oroville on the north to a few miles south of the American River in the south. The Sacramento River bounded the territory on the west, and in the east, it extended to a general area located within a few miles of Lake Tahoe. As a language, Nisenan (meaning “from among us” or “of our side”) has three main dialects – Northern Hill, Southern Hill, and Valley Nisenan, with three or four subdialects (Kroeber 1976; Placer County 1992; Shipley 1978; Wilson and Towne 1978). The Valley Nisenan lived along the Sacramento River, primarily in large villages with populations of several hundred each. Between there and the foothills, the grassy plains were largely unsettled, used mainly as a foraging ground by both valley and hill groups (Placer County 1992). Individual and extended families “owned” hunting and gathering grounds, and trespassing was discouraged (Kroeber 1976; Wilson and Towne 1978). Residence was generally patrilocal, but couples actually had a choice in the matter (Wilson and Towne 1978).

Politically, the Nisenan were divided into “tribelets,” made up of a primary village and a series of outlying hamlets, presided over by a more-or-less hereditary chief (Kroeber 1976; Wilson and

Towne 1978). Villages typically included family dwellings, acorn granaries, a sweathouse, and a dance house, owned by the chief. The chief had little authority to act on his or her own, but with the support of the shaman and the elders, the word of the chief became virtually the law (Wilson and Towne 1978).

Subsistence activities centered around the gathering of acorns (tan bark oak and black oak were preferred), seeds, and other plant resources. The hunting of animals such as deer and rabbits, and fishing were also an important part of normal subsistence activities. Large predators, such as mountain lions were hunted for their meat and skins, and bears were hunted ceremonially. Although acorns were the staple of the Nisenan diet, they also harvested roots like wild onion and "Indian potato," which were eaten raw, steamed, baked, or dried and processed into flour cakes to be stored for winter use (Wilson and Towne 1978). Wild garlic was used as soap/shampoo, and wild carrots were used medicinally (Littlejohn 1928). Seeds from grasses were parched, steam dried, or ground and made into a mush. Berries were collected, as were other native fruits and nuts. Game was prepared by roasting, baking, or drying. In addition, salt was obtained from a spring near modern-day Rocklin (Wilson and Towne 1978).

Hunting of deer often took the form of communal drives, involving several villages, with killing done by the best marksmen from each village. Snares, deadfalls, and decoys were used as well. Fish were caught by a variety of methods including use of hooks, harpoons, nets, weirs, traps, poisoning, and by hand (Wilson and Towne 1978).

Trade was important with goods traveling from the coast and valleys up into the Sierra Nevada mountains and beyond to the east, and vice versa. Coastal items like shell beads, salmon, salt, and Foothill pine nuts were traded for resources from the mountains and farther inland, such as bows and arrows, deer skins, and sugar pine nuts. In addition, obsidian was imported from the north (Wilson and Towne 1978).

The Spanish arrived on the central California coast in 1769 and by 1776 the Miwok territory bordering the Nisenan on the south had been explored by José Canizares. In 1808, Gabriel Moraga crossed Nisenan territory, and in 1813, a major battle was fought between the Miwok and the Spaniards near the mouth of the Cosumnes River. Though the Nisenan appear to have escaped being removed to missions by the Spanish, they were not spared the ravages of European diseases. In 1833, an epidemic – probably malaria – raged through the Sacramento Valley, killing an estimated 75 percent of the native population. When John Sutter erected his fort at the future site of Sacramento in 1839, he had no problem getting the few Nisenan survivors to settle nearby. The discovery of gold in 1848 at Sutter's Mill, near the Nisenan village of *Colluma* (now Coloma) on the South Fork of the American River, drew thousands of miners into the area, and led to widespread killing and the virtual destruction of traditional Nisenan culture. By the Great Depression, no Nisenan remained who could remember the days before the arrival of the Euro-Americans (Wilson and Towne 1978).

1.1.2.4 Historical

The first significant European settlement of California began during the Spanish Period (1769 to 1821) when 21 missions and four presidios were established between San Diego and Sonoma. Although located primarily along the coast, the missions dominated the majority of the California region during this period. The purpose of the missions and presidios was to establish Spanish

economic, military, political, and religious control over the Alta California territory. This included the forced movement of much of the native population to the missions where they were converted to Catholicism (Castillo 1978; Cleland 1944). The nearest missions to the Delta region were Mission San Rafael established near San Rafael in 1817 and Mission San Francisco Solano, established in Sonoma in 1823 (Castillo 1978).

Although the Spanish had made forays into the Central Valley since about 1769, it was not until 1808 that Captain Gabriel Moraga explored and named the Sacramento area. The Spanish took little interest in the area and did not establish any missions or settlements in the Central Valley. California became part of Mexico in 1822 when Mexico achieved its independence from Spain. In 1827, American trapper Jedediah Smith traveled along the Sacramento River and into the San Joaquin Valley to meet other trappers of his company who were camped there, but no permanent settlements were established by the fur trappers (Thompson and West 1880).

After Mexico became independent from Spain in 1822, the Mexican government closed the missions in the 1830s. Former mission lands were granted to soldiers and other Mexican citizens for use as cattle ranches. Much of the land along the coast and in the interior valleys became part of Mexican land grants or “ranchos” (Robinson 1948). The rancho owners lived in towns, such as San Francisco or Monterey, or in an adobe house on the rancho. The Mexican Period includes the years 1822 to 1848.

Part of the Project Area is situated within the 35,000-acre Rio de los Americanos land grant along the southern bank of the American River. It was issued by the Mexican governor of Alta California to William Leidesdorff in 1844 (Aviña 1976), a San Francisco merchant who died in 1848. Joseph L. Folsom, a former U.S. Army captain who came to San Francisco during the gold rush, purchased the Rio de los Americanos land grant from Leidesdorff’s estate. Folsom founded the town of Granite City on the land grant. It was renamed Folsom after his death in 1855 (Myfolsom.com 2007).

John Sutter, a European immigrant, built a fort at the confluence of the Sacramento and American Rivers in 1839 and petitioned the Mexican governor of Alta (Upper) California for a land grant which he received in 1841. Sutter built a flour mill and grew wheat near the fort (Bidwell 1971). Gold was discovered in the flume of Sutter’s lumber mill at Coloma on the South Fork of the American River in January 1848 (Marshall 1971). That same year, the Treaty of Guadalupe Hidalgo ended the Mexican-American War and marked the beginning of the American Period (1848 to present). California became a U.S. territory in 1848 and a state in 1850. The discovery of gold initiated the 1849 California Gold Rush, bringing thousands of miners and settlers to California, most of whom settled in the north.

Subsequent to the discovery of gold at Coloma, immigrants began to pour into the Sierra Nevada foothills. In the spring of 1848, while *en route* to Sutter’s Fort, two Mormon immigrants discovered gold near the confluence of the North and South Forks of the American River at a site known as Mormon Island. Virtually overnight, numerous mining camps sprang up on both sides of the American River to exploit the easily accessible placer gold deposits. Chief among them were Alabama Bar, Slate Bar, Sailor Bar, Bean’s Bar, Mississippi Bar, and Negro Bar. Mississippi Bar is north of the Project Area on the northern side of the American River. Mining also served as a major use for rural public land. Federal mining acts of 1866 and 1872 allowed exploration for mineral deposits on public lands and provided a means for miners to

acquire ownership of mines on public lands. The 1866 act stated that a patent would be issued to claimants who had previously occupied and improved a vein or lode of valuable mineral deposits and who had spent a specified minimum sum in labor and improvements. The 1872 act allowed for purchase of mining land, followed by the issuance of a patent (Robinson 1948:141-142). Mineral rights on land grants belonged to the owner of the grant and could not be given or sold to others by the federal government (Robinson 1948:143).

Mining

Mining is an important historical theme in the Project Area and in the surrounding lands. Lindström (1989) provides extensive historical background relating to the previous mining activities in the lands of the immediate vicinity since the mid-1800s. The region later known as the Folsom Mining District was extensively placer mined during the Gold Rush. The Folsom area was originally settled in 1849 by African-American miners and from that circumstance the locale became known as Negro Bar. By 1855 Chinese miners were reworking abandoned diggings and a large number of them were employed at various regional mines up through the 1880s (Askin and Docken 1980:11; Gudde 1975:15; Lindström and Wells 1989; Lindström, Wells and Wilson 1988; Plimpton 1964).

Initially, during the early 1850s, surface deposits (usually less than three feet deep) were placer mined through a series of small hand-dug excavations. The surface gravels were washed by pan or by higher-volume methods that employed rockers, long toms and/or sluice boxes. These activities were often initially concentrated along drainages and swales (such as Morrison Creek which drains the project area). Ground sluicing, a technique which uses water (not under pressure) to break down gold-bearing gravels, could have occurred any time from the 1850s up until the turn of the century. Low-pressure hydraulic mining took place at Rebel Hill sometime between the mid-1850s and 1884.

From the early 1850s until the late 1890s and again in 1925, drift mining was carried on at Alder Creek. As cemented gravels cap some of the area, shafts were sunk beneath this hard surface layer into the "softer" gravels below where gold-bearing leads were followed out with drift mining techniques.

Natomas Company

As mining grew in scale, an elaborate system of water conveyance to and from the mining area had to be developed before intensive gold recovery could begin. As early as 1853, the Natoma Water and Mining Company (later known as the Natomas Company) constructed a main ditch in order to provide the large amount of water needed to operate the diggings. The Natoma Ditch extended for about 20 miles from its source at the South Fork of the American River, located two miles above Salmon Falls (Thompson and West 1880:226). The main ditch averaged eight feet wide by three feet deep. A network of auxiliary flumes and ditches criss-crossed the region, including the Rebel Hill Ditch, which is located due north of the Project area (Bunker n.d.: 11-12).

Through a series of land purchases and mergers, the company was ultimately reorganized and incorporated as the Natomas Company. The Natomas Company became the principal operator in the Folsom Mining District. Near the turn of the nineteenth and twentieth centuries the

company began to dredge its landholdings. Bucket-line dredging began at Folsom in 1899 and it soon became a major industry. The Natomas Company is responsible for the dredge tailings seen in the vicinity today.

Bucket-line dredging of gold bearing deposits in the Project vicinity was principally the work of the Natomas Company. The company operated dredgers from the turn of the century until 1962. Due west of the project area, the Natomas Company bucket-line dredges Nos. 5, 8, and 9 operated southward from Rebel Hill (west of the project area): Natoma Dredge No. 9 commenced work at Rebel Hill in 1911 and operated there until 1921; Natoma Dredge No. 8 operated from 1911 until 1936; and Natoma Dredge No. 5 worked further east between 1905 and 1936. Both the Folsom Development Company and the Gugenheim Company conducted extensive dredge prospecting on Rebel Hill sometime between the turn of the century and 1912. Lands located south of White Rock Road were bucket-line-dredged in the 1930s by Capitol Dredging Company and the Sacramento Gold Dredging Company (Wells personal communication 1989 in Lindström and Wells 1989). Water for these dredging activities may have been supplied by the Tarpan and/or Willow Hill reservoirs.

By the 1930s dragline dredging occurred along present-day White Rock Road near Aerojet's Gate 7 (Wells personal communication 1989 in Lindström and Wells 1989). In 1946, the General Dredging Company commenced dragline dredging above Alder Creek on land leased from Natomas Company (Carlson 1955:139). During the 1930s, a dry-land dredge also operated around Alder Creek about ¼ mile east of Prairie City Road.

In 1916, Natoma Dredge No. 4, one of two reclaiming dredges built by Natomas Company, was commissioned at Nimbus (about two miles north of the project area) and worked on lands due north of the project. Subsequent to reclamation dredging activities, a "land leveler" (the precursor to the modern-day bulldozer) was used to further level the ground surface for other land development.

The company owned large amounts of land and controlled economic activities in the region. While it initially served and engaged in mining interests, it later diversified to promote such varied pursuits as agriculture, hydroelectric power, aggregate processing, and real estate. When mineral resources were depleted, the Natomas Company initiated reclamation efforts to rehabilitate its dredged lands. Also, the byproducts of dredging (cobble tailings, sand, and gravel) became the basis for rock crushing and road construction activities. Today many of these large tracts of dredged-over areas have been sold and are occupied by residential, commercial, or industrial developments.

1.1.3 Surrounding Land Uses

Prior to development, the surrounding land uses included cattle grazing, urban residential, and industrial (the Aerojet facilities). Upon completion of development, the SPA Open Space will be surrounded by a mixed use residential development and associated infrastructure.

1.1.4 General Wetland Preserve Description

The Wetland Preserve encompasses a total of ±302 acres and supports numerous plant communities, including wetland, oak woodland, annual grassland, and Valley foothill riparian.

Approximately 44.308 acres of waters of the U.S. fall within the Wetland Preserve including: vernal pools (1.723 acres), seasonal wetlands (0.896 acre), seasonal wetland swale (7.846 acres), seep (6.325 acres), marsh (0.141 acre), creek/channel (13.801 acres), ditch (0.554 acre), intermittent drainage (7.314 acres), and pond (5.708 acres). Additionally, 0.048 acre of waters of the State also occur within the Open Space Preserve, this includes vernal pool (0.019 acre), seasonal wetland (0.003 acre), and ditch/canal (0.026 acre). The vernal pools and seasonal wetlands are considered habitat for the special-status species including vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*). Additionally, several elderberry shrubs occur within the Wetland Preserve. Elderberry shrubs represent potential habitat for the Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). These species are discussed in more detail in Section 1.3.3.

The Wetland Preserve also contains areas of historical/cultural significance. At the time of the preparation of this document the precise location of each feature has not been mapped, thus all the avoided areas may not be currently included within the Wetland Preserve. Once negotiations with the California State Historic Preservation Office (California SHPO) are concluded and the resources are mapped, the Wetland Preserve boundary may be adjusted to protect additional area.

1.1.5 General Passive Open Space Description

The ±688-acre SPA Passive Open Space includes the bike and pedestrian trails (and areas within 30 feet of the centerline of the trails) and trail amenities (see Attachment A). Plant communities within the Passive Open Space include annual grassland and blue oak woodland/oak savannah. Although the Passive Open Space will not be subject to a declaration of restrictions, it will be managed and maintained according to this Plan as it is immediately adjacent to the Wetland Preserve area.

1.2 Topography and Soils

The site is situated at elevations between 240 to 810 feet above sea level. There are thirteen different soils types mapped for the SPA Open Space area. Soil series mapped by the Natural Resource Conservation Service for the site include (107) Argonaut-Auburn Complex, 3-8% slopes; (110) Auburn-Argonaut Rock Outcrop Complex, 8-30% slopes; (145) Fiddyment Fine Sandy Loam, 1-8% slopes; (160) Hicksville Sandy Clay Loam, 0-2% slopes; (183) Orangevale Coarse Sandy Loam, 2-5% slopes; (190) Pits; (192) Red Bluff loam, 2-5% slopes; (196) Red Bluff-Xerorthents, dredge tailing complex, 2-5% slopes; (235) Vleck Gravelly Loam, 2-15% slopes; (237) Whiterock Loam, 3-30% slopes; (AkC) Argonaut Gravelly Loam, 2-15% slopes; (AwD) Auburn Silt Loam, 2-30% slopes; and (AxD) Auburn Very Rocky Silt Loam, 2-30% slopes (Figure 2. *Natural Resources Conservation Service Soil Types*).

1.3 Biological Resources

Several plant communities occur within the SPA Open Space. These communities support a variety of wildlife species, some of them special-status. Figure 3 depicts the various plant communities present within the SPA Open Space.

1.3.1 Plant Communities and Associated Wildlife

The southern and eastern portion of the SPA Open Space is dominated by annual grassland, while the northwestern portion is primarily blue oak woodland, blue oak savannah, and a riparian corridor along Alder Creek.

1.3.1.1 Annual Grassland Community

The annual grasslands within the SPA Open Space are dominated by a variety of non-native naturalized Mediterranean grasses, including soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), medusahead grass (*Taeniatherum caput-medusae*), slender wild oat (*Avena barbata*), and little quaking grass (*Briza minor*). Other native and non-native herbaceous species include sticky tarweed (*Holocarpha virgata*), yellow-star thistle (*Centaurea solstitialis*), rose clover (*Trifolium hirtum*), shamrock clover (*Trifolium dubium*), Fremont's tidy-tips (*Layia fremontii*), Valley tassels (*Castilleja attenuata*), and hyacinth brodiaea (*Triteleia hyacinthina*).

The annual grassland supports a modest diversity of wildlife species. Small mammals present may include California vole (*Microtus californicus*), black-tailed jackrabbit (*Lepus californicus*), deer mouse (*Peromyscus maniculatus*), and pocket gopher (*Thomomys* spp.). These mammals represent potential foraging items for predators such as northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), 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*).

1.3.1.2 Blue Oak Woodland/Blue Oak Savannah

Blue oak woodland and blue oak savannah occur in the northwestern and western portions of the SPA Open Space. Blue oaks (*Quercus douglasii*) represent the dominant tree species in both of these communities. The species observed in the understory are generally similar to those found in annual grasslands. The blue oak woodland community within the SPA Open Space is characterized by relatively dense canopy cover, while oak distribution in oak savannah habitat is sparse.

1.3.1.3 Valley Foothill Riparian

A relatively narrow Valley foothill riparian community occurs along portions of Alder Creek within the SPA Open Space. Dominant plant species within and adjacent to Alder Creek include narrow-leaf cattail (*Typha angustifolia*), mosquito fern (*Azolla filiculoides*), black willow (*Salix gooddingii*), arroyo willow (*S. lasiolepis*), sandbar willow (*S. exigua*), Fremont's cottonwood (*Populus fremontii*), white alder (*Alnus rhombifolia*), Valley oak (*Quercus lobata*), South American vervain (*Verbena bonariensis*), soft rush (*Juncus effusus*), creeping spikerush (*Eleocharis macrostachya*), dallis grass (*Paspalum dilatatum*), Himalayan blackberry (*Rubus armeniacus*), water primrose (*Ludwigia peploides* ssp. *peploides*), water speedwell (*Veronica anagallis-aquatica*), and water cress (*Rorippa nasturtium-aquatica*).

The Valley foothill riparian communities in this region typically support a wide variety of wildlife species, including Bewick's wren (*Thryomanes bewickii*), downy woodpecker (*Picoides pubescens*), golden-crowned sparrow (*Zonotrichia atricapilla*), wood duck (*Aix sponsa*), red-shouldered hawk (*Buteo lineatus*), great horned owl (*Bubo virginianus*), and tree swallow (*Tachycineta bicolor*).

The understory scrub community will eventually provide nesting habitat for species such as wrenit (*Chamaea fasciata*), song sparrow (*Melospiza melodia*), and California towhee (*Pipilo crissalis*). Resident and migratory songbirds such as hermit thrush (*Catharus guttatus*), Bewick's wren, fox sparrow (*Passerella iliaca*), and spotted towhee (*Pipilo maculatus*) also utilize willow scrub community for foraging and nesting cover.

Other wildlife species expected to occur within the riparian habitat include Pacific chorus frog (*Pseudacris regilla*), western gray squirrel (*Sciurus griseus*), striped skunk (*Mephitis mephitis*), beaver (*Castor canadensis*), common garter snake (*Thamnophis sirtalis*), and raccoon (*Procyon lotor*).

1.3.1.4 Urban/Disturbed

Several small areas within the SPA Open Space are part of the current road alignments. These areas are considered to be urban/disturbed and are typically devoid of any vegetation.

1.3.2 Jurisdictional Waters of the U.S., Including Wetlands

A variety of waters of the U.S., including wetlands, occur in the Wetland Preserve portion of the SPA Open Space. Each is described in detail below.

1.3.2.1 Vernal Pools

Vernal pools are poorly drained, isolated depressions that occur within the annual grassland landscape. Vernal pools are fed by direct rainfall or surface run-off. Water ponds for several weeks at a time during the rainy season and may dry completely between storm events.

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, primarily through evaporation, the "drying" phase begins during which pool basins begin drying and plant flowering reaches its peak, followed by the setting of seeds. The final phase is the "drought" phase, which is characterized by dry soils and dead or dormant vegetation. Since vernal pools hold ponded water and have emergent vegetation, they are responsible for some nutrient uptake/transformation. However, because of the brief period of inundation of the vernal pools on the site, it is unlikely that the pool provides any significant contribution to overall regional water quality (i.e., minimal effects on groundwater recharge, flood flows, or sediment stabilization).

There are approximately 1.723 acres of vernal pools throughout the annual grassland habitat within the Wetland Preserve. The preserved vernal pools vary in maximum water depth from a

couple of inches to 18 inches deep, and they range from 0.002 to 1.3 acres in size. Plant species observed within vernal pools include Carter's buttercup (*Ranunculus bonariensis*), Vasey's coyote-thistle (*Eryngium vaseyi*), creeping spikerush (*Eleocharis macrostachya*), and slender popcorn-flower (*Plagiobothrys stipitatus*). Typical wildlife associated with vernal pools includes various aquatic invertebrates and amphibians such as the pacific chorus frog.

The vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*), listed as threatened and endangered (respectively), pursuant to the federal ESA, are known to occur within 5-miles of the SPA. Two years of wet season surveys have been performed for the entire SPA, and vernal pool fairy shrimp were located in several vernal pools within the SPA.

1.3.2.2 Seasonal Wetland/Seasonal Wetland Swale

Within the Wetland Preserve, seasonal wetlands (0.899 acre) and seasonal wetland swales (7.846 acres) occur within the annual grassland and occasionally in the oak woodlands. 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.

1.3.2.3 Seep

Seeps are seasonally or perennially wet areas resulting from discharge of groundwater to the surface. Approximately 6.325 acres of seep occur within the Wetland Preserve. Dominant plants within the seeps include spikerush, hyssop loosestrife, pennyroyal (*Mentha pulegium*), and cut-leafed geranium. Other plant species within the seep include curly dock, willow (*Salix* species), and Himalayan blackberry (*Rubus armeniacus*).

1.3.2.4 Marsh

Approximately 0.141-acre of marsh occurs within the Wetland Preserve. Marshes within the Wetland Preserve are perennial wetland features that appear to be fed by sub-surface seepage. Plant species observed within the marsh include mannagrass, hyssop loosestrife (*Lythrum hyssopifolia*), spiny-fruited buttercup, water cress, and peppermint.

1.3.2.5 Creek/Channel and Intermittent Drainages (Alder Creek)

Approximately 13.801 acres of creek/channel (Alder Creek) and 7.314 acres of intermittent drainages occur within the Wetland Preserve. Intermittent drainages and creeks are characterized by the presence of an ordinary high water mark that can have a defined bed and bank. 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.

1.3.2.6 Ditch

Approximately 0.580-acre (0.554-acre waters of the U.S. and 0.026-acre waters of the State) of constructed ditches occur within the Wetland Preserve that pond water for a sufficient period of time during the growing season to support hydrophytic vegetation. These features were constructed on contour; however, they appear to no longer convey flow. Dominant plant species within the mapped constructed ditches included Vasey's coyote-thistle, Carter's buttercup, creeping spikerush, and annual hairgrass. Other species commonly observed within these features included hyssop loosestrife, smooth cat's-ear (*Hypochaeris glabra*), Mediterranean barley, and sticky tarweed.

1.3.2.7 Pond

Stock ponds represent ponded areas that were either created or enhanced through the placement of an earthen dam in the course of a drainage and/or through excavation. Stock ponds exhibit an ordinary high water mark. Two stock ponds (5.708 acres) were mapped in the northeastern portion of the site. Vegetation within these features generally occurs within the shallower areas along the margins. Plant species observed within and adjacent to the stock ponds included Goodding's black willow (*Salix gooddingii*), Fremont cottonwood (*Populus fremontii*), cattail, hyssop loosestrife, pennyroyal, dock, spikerush, and Vasey's coyote-thistle.

1.3.3 Special-Status Species

There are several federally or state listed species that are known to occur or have the potential to occur within the Wetland Preserve. Each of these species is further described below.

1.3.3.1 Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species and is 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.

1.3.3.2 Valley Elderberry Longhorn Beetle

The Valley elderberry longhorn beetle (VELB) is a beetle that is associated with live elderberry shrubs, its exclusive host plant. Life history of the VELB is assumed to follow a sequence of events similar to that of related taxa (USFWS 1984). Adult VELBs, which are generally short-lived, typically emerge from elderberry shrubs in May, but have been encountered during March through June. After mating, females deposit eggs in crevices on the bark of living elderberry plants. Upon hatching, VELB larvae bore into the pith of the elderberry shrub, where they remain for one to two years. Following pupation, adult VELBs emerge from the elderberry through created emergence holes which are circular or somewhat oval in shape. Emergence holes are indicative of VELB use, although all elderberry shrubs within the range of the species, whether or not the shrubs reveal emergence holes, represent potentially occupied habitat.

1.3.3.3 Vernal pool fairy shrimp

The vernal pools within the Wetland Preserve represent potential habitat for the vernal pool fairy shrimp. This species is federally listed as threatened. This species is protected under the federal ESA as administered by the USFWS. Only approved biologists with a federal permit can survey for, net, or handle this species. The USFWS authorized impacts to this species' habitat through the issuance of a Biological Opinion. Most of the area within the SPA has been surveyed according to USFWS survey protocols. Vernal pool fairy shrimp have been found in only two pools in the northwest corner of the SPA.

Species Account

The vernal pool fairy shrimp, is a small branchiopod crustacean in the family Branchinectidae. It ranges in size from ½ to one inch long. Fairy shrimp are aquatic species in the order Anostraca. They have delicate elongate bodies, large stalked compound eyes, no carapaces, and eleven pairs of swimming legs. They glide gracefully upside down, swimming by beating their legs in a complex, wavelike movement that passes from front to back. Fairy shrimp feed on algae, bacteria, protozoa, rotifers and bits of detritus.

The vernal pool fairy shrimp occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. Although the species has been collected from large vernal pools, including one exceeding 25 acres, it tends to occur in smaller pools. It is most frequently found in pools measuring less than 0.05 acre. Vernal pool fairy shrimp have been collected from early December to early May.

Female fairy shrimp carry their cysts in a ventral brood sac. The cysts are either dropped to the pool bottom or remain in the brood sac until the female dies and sinks. When the pool dries out, so do the cysts. They remain in the dry pool bed until rains and other environmental stimuli hatch them. Fairy shrimp cysts are capable of withstanding heat, cold and prolonged desiccation. When the pools refill, some, but not all, of the cysts may hatch. The cyst bank in

the soil may contain cysts from several years of breeding. The average time to maturity is only forty-one days. Under warmer conditions, it can be as little as eighteen (Eriksen and Belk 1999).

The vernal pool fairy shrimp is widespread but not abundant. Known populations extend from Southern Oregon through most of the length of the Central Valley. Along the central coast, they range from northern Solano County to Pinnacles National Monument in San Benito County. Additional disjunct populations exist: one near Soda Lake in San Luis Obispo County, one in the mountain grasslands of northern Santa Barbara County, one on the Santa Rosa Plateau in Riverside County, and one near Rancho California in Riverside County.

The vernal pool fairy shrimp was identified relatively recently, in 1990. There is little information on its historical range. However, since it is currently known to occur in a wide range of vernal pool habitats, the historic distribution may have coincided with the historic distribution of Central Valley and Southern California vernal pools.

1.3.3.4 Vernal Pool Tadpole Shrimp

The vernal pools within the Wetland Preserve represent potential habitat for the vernal pool tadpole shrimp. This species is federally listed as an endangered species. Vernal pool tadpole shrimp, is another invertebrate that lives in vernal pools and seasonal wetlands. Its life cycle and habitat requirements are similar to the vernal pool fairy shrimp. Most of the area within the SPA has been surveyed according to USFWS survey protocols. No vernal pool tadpole shrimp were found during surveys.

Species Account

The vernal pool tadpole shrimp is a small crustacean in the Triopsidae family. It has compound eyes, a large shield-like carapace (shell) that covers most of the body, and a pair of long cercopods (appendages) at the end of the last abdominal segment. Vernal pool tadpole shrimp adults reach a length of 2 inches in length. They have about 35 pairs of legs and two long cercopods. This species superficially resembles the rice field tadpole shrimp (*Triops longicaudatus*).

Tadpole shrimp climb or scramble over objects, as well as plowing along or within bottom sediments. Their diet consists of organic debris and living organisms, such as fairy shrimp and other invertebrates. This animal inhabits vernal pools containing clear to highly turbid water, ranging in size from 54 square feet in the former Mather Air Force Base area of Sacramento County, to the 89-acre Olcott Lake at Jepson Prairie.

The life history of the vernal pool tadpole shrimp is linked to the seasonal cycle of the vernal pool. After winter rainwater fills the pool, the population is reestablished from cysts that lie dormant in the dry pool sediments. Sexually mature adults have been observed in vernal pools three to four weeks after the pools had been filled. Some cysts hatch immediately and the others remain dormant in the soil to hatch during later rainy seasons.

The vernal pool tadpole shrimp is currently distributed across the Central Valley of California and in the San Francisco Bay area. California fairy shrimp tend to live in large, fairly clear vernal

pools and lakes. However, they can survive in clear to turbid water with pH from 6.2 to 8.5, and they have been found in very small pools. They are tolerant of water temperatures from 50° to 84° F.

1.3.3.5 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.

1.3.3.6 State Listed Species of Concern

There are several State Listed Species of Concern that have the potential to occur within the SPA Open Space. These include: tricolored black bird (*Agelaius tricolor*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), American badger (*Taxidea taxus*), loggerhead shrike (*Lanius ludovicianus*), burrowing owl (*Athene cunicularia*), Prairie falcon (*Falco mexicanus*), Merlin (*Falco columbarius*), Ferruginous hawk (*Buteo regalis*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), and northern harrier (*Circus cyaneus*).

1.4 Plan Goals

The goals of the Plan are:

1. To provide a SPA-wide approach to open space management, maintenance, and monitoring.
2. To provide specific methods for open space management, maintenance, and monitoring.
3. To eliminate the need for multiple management plans when new open space is dedicated by each project within the SPA.
4. To reduce Agency and City staff workload by providing an agreed-upon method for corrective actions.
5. To provide a platform for grant funding.

1.5 Definitions

Although these terms have been defined in the text, this definition section has been provided for a quick reference.

1.5.1 Annual Report

The yearly report prepared by the Monitoring Biologist in conjunction with the Preserve Owner/Manager that will be submitted to the USFWS and the USACE by June 30th of each year.

1.5.2 *Biological Opinion*

The specific biological opinion issued by the USFWS for each relevant project within the SPA. Projects within the SPA required to obtain a Biological Opinion include:

- Carpenter Ranch (Service File No. XXXX)
- Folsom 138 (Service File No. XXXX)
- Hillsborough (a.k.a. Folsom 560) (Service File No. XXXX)
- Folsom Heights (Service File No. XXXX)
- Folsom South (Service File No. XXXX)
- Javanifard & Zarghami (Service File No. XXXX)
- Prairie City Road Business Park (Service File No. XXXX)
- Sacramento Country Day School (Service File No. XXXX)
- Backbone Infrastructure (Service File No. XXXX)

1.5.3 *California SHPO*

The California State Historic Preservation Office.

1.5.4 *CDFG*

The California Department of Fish and Game.

1.5.5 *City*

The City of Folsom.

1.5.6 *Developer*

The relevant developer for each project within the SPA, or its successors or assignees, undertaking construction activities within any phase of the permitted project.

1.5.7 *Invasive Plants*

Invasive plants are plants that are not native, and replace native vegetation or native habitats. The Monitoring Biologist and the Preserve Owner/Manager can refer to the species found on the California Invasive Plant Council (Cal-IPC) California Invasive Plant Inventory to assist them in determining if a plant is an invasive plant species of concern.

1.5.8 *Memorandum of Agreement (MOA)*

Memorandum of Agreement between the USACE, California SHPO, Advisory Council on Historic Preservation, and each individual developer within the SPA.

1.5.9 *Monitoring Biologist*

The primary scientist, consulting scientist, or firm hired to assist the Preserve Owner/Manager in performing the duties and obligations required by this Plan.

1.5.10 *Native Plant Species*

For the purposes of this Plan, plants native to the SPA Open Space are defined as those plants believed by the scientific community to have been present in Sacramento County prior to the settlement of Europeans. *The Jepson Manual* (Hickman 1993) will be the primary reference for determining if a plant is native or non-native. However, because this reference is specific only as to subregions, which encompass portions of several counties, the Preserve Owner/Manager can consult with the Monitoring Biologist, local botanists, or the local chapter of the California Native Plant Society to determine if a plant should be considered native to the SPA Open Space.

1.5.11 *Non-Native Plant Species*

Any plant not considered a Native Plant Species as defined above.

1.5.12 *Open Space Conservation Values*

Open Space Conservation Values are defined as the physical, biological, and environmental processes needed to maintain the suitability of the habitats in the Open Space Preserve.

1.5.13 *Passive Open Space*

The ±688-acre SPA Passive Open Space includes the bike and pedestrian trails (and areas within 30 feet of the centerline of the trails) and trail amenities (see Attachment A). Vegetative communities within the Passive Open Space include annual grassland and blue oak woodland/oak savannah. Although these areas will not be subject to a declaration of restrictions, the management and maintenance of these areas will follow the guidelines provided in this document as these areas are immediately adjacent to the Wetland Preserve area.

1.5.14 *Permit*

The specific USACE permit issued for each project within the SPA. Permits issued for projects include:

- Carpenter Ranch (Regulatory No. 200600984)
- Folsom 138 (Regulatory No. 200800326)
- Hillsborough (a.k.a. Folsom 560) (Regulatory No. 200600561)
- Folsom Heights (Regulatory No. 200800331)
- Folsom South (Regulatory No. 200600035)
- Javanifard & Zarghami (Regulatory No. _____)
- Prairie City Road Business Park (Regulatory No. 200600538)
- Sacramento Country Day School (Regulatory No. _____)
- Backbone Infrastructure (Regulatory No. _____)

1.5.15 Plan

The Operations and Management Plan for the Folsom Plan Area Specific Plan Open Space Corridor prepared in compliance with the Permits and the Biological Opinions issued for projects within the SPA.

1.5.16 Preserve Manager

Upon the recordation of the Declaration of Restrictions and dedication of the Wetland Preserve to the City, the City will serve as Preserve Manager. The Developer associated with each specific project within the SPA will act as Preserve Manager prior to the dedication of the Wetland Preserve to the City. In either case, the Preserve Manager is responsible for the monitoring and reporting as described in this Plan.

1.5.17 Preserve Owner

Initially the parties responsible for the maintenance and management of Wetland Preserve within the SPA Open Space, will be the current owners. The expected long-term owner and party responsible for the long-term maintenance of the Wetland Preserve and Passive Open Space within the SPA will be the City.

1.5.18 Qualified Personnel

Professional biologists, botanists, and other specialists will be employed to assist the Preserve Manager in performing the duties and obligations required by this Plan.

1.5.19 SPA

Folsom Plan Area Specific Plan

1.5.20 SPA Open Space

The Folsom Plan Area Specific Plan Open Space which is made of two components: the Wetland Preserve (± 302 acres) and the Passive Open Space (± 688 acres).

1.5.21 USACE

The United States Army Corps of Engineers.

1.5.22 USFWS

The United States Fish and Wildlife Service.

1.5.23 Wetland Preserve

The Wetland Preserve encompasses a total of ± 302 acres and supports numerous plant communities, including wetland, oak woodland, annual grassland, and Valley foothill riparian.

Approximately 44.308 acres of waters of the U.S. fall within the Wetland Preserve including: vernal pools (1.723 acres), seasonal wetlands (0.896 acre), seasonal wetland swale (7.846 acres), seep (6.325 acres), marsh (0.141 acre), creek/channel (13.801 acres), ditch (0.554 acre), intermittent drainage (7.314 acres), and pond (5.708 acres). Additionally, 0.048 acre of waters of the State also occur within the Open Space Preserve, this includes vernal pool (0.019 acre), seasonal wetland (0.003 acre), and ditch/canal (0.026 acre). The vernal pools and seasonal wetlands are considered habitat for the special-status species including vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*). Additionally, several elderberry shrubs occur within the Wetland Preserve. Elderberry shrubs represent potential habitat for the Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). These species are discussed in more detail in Section 1.3.3.

The Wetland Preserve also contains areas of historical/cultural significance. At the time of the preparation of this document the precise location of each feature has not been mapped, thus all the avoided areas may not be currently included within the Wetland Preserve. Once negotiations with the California State Historic Preservation Office (California SHPO) are concluded and the resources are mapped, the Wetland Preserve boundary may be adjusted to protect additional area.

2.0 PRESERVE MANAGEMENT DURING PROJECT CONSTRUCTION

2.1 Protective Measures to be Taken During Initial Project Construction

As the projects within the SPA are built, construction will occur outside of the boundary of the Wetland Preserve area, but within the Passive Open Space. In general, where construction will occur within the Passive Open Space of the SPA Open Space, the minimum necessary construction area will be used. To avoid impacts to the Wetland Preserve areas and the biological and cultural resources within the Wetland Preserve areas, the following protective measures will be taken during project construction. Since construction will occur by project, and potentially by phase within each project, the protective measures described below will be initiated at the beginning of each project and/or phase.

2.1.1 Improvement Plans

To ensure that contractors working adjacent to the Wetland Preserve areas are aware of its presence, improvement plans for each phase of development and projects adjacent to the Wetland Preserve areas will show the Wetland Preserve boundaries and Wetland Preserve areas.

2.1.2 Pre-Construction Meetings

Pre-construction meetings for projects adjacent to or in the SPA Open Space will address the location of the Wetland Preserve, the sensitive habitats and cultural resources present, and minimization of disturbance to the SPA Open Space, especially the Wetland Preserve. These meetings should occur prior to the initiation of construction within each phase or project construction. Construction activities shall comply with Permit conditions, Biological Opinion conditions, and, if applicable, the MOA.

2.1.3 Grading within the Preserve

Minimal grading and/or slope construction within and along the SPA Open Space boundaries will be necessary to achieve the appropriate grade to install roads, crossings, detention basins, outfalls, utilities, pads, and bike trails, etc. However, most of the construction activities will be limited to the Passive Open Space of the SPA Open Space. The grading will not disturb or modify existing preserved wetlands or, if applicable, cultural resources in accordance with the MOA. When construction activities occur, access to the SPA Open Space will be restricted to 10 feet beyond the extent of work to protect preserved habitats and cultural resources. Portions of the SPA Open Space that are graded will be hydroseeded with native seed as described below in Section 2.1.7 to re-establish vegetation.

2.1.4 Flagging Preserved Wetlands, Elderberry Shrubs, and Cultural Resources Adjacent to Construction Within the Preserve

Where construction will occur within the SPA Open Space, prior to installation of temporary construction fencing denoting the limits of construction, the developer or the developer's contractor will hire a qualified biologist to flag the preserved wetland(s), elderberry shrubs, and cultural resources within 25 feet of the limits of construction with brightly colored pin-flags so

that workers are aware of the location of the protected habitat/resources and can install the temporary construction fencing accordingly. This includes flagging of features/resources in future phases of the Wetland Preserve areas. If applicable, flagging and/or monitoring of cultural resources locations shall be carried out in accordance with the MOA.

2.1.5 Temporary Construction Fencing

Prior to construction within any project or phase of the SPA, high-visibility temporary construction fencing will be installed along all the Wetland Preserve areas within or adjacent to any active construction. Additionally, temporary construction fencing will be installed along any Wetland Preserve area boundaries outside of the phase under development, but adjacent to where development is occurring. Fencing will also be installed at the limits of construction within the Wetland Preserve areas when improvements such as the bike trail, detention basins, crossings, etc. are constructed. In all cases, this fencing will be maintained daily until permanent fencing is installed. Following completion of construction of each phase of the project, this temporary fencing must be removed.

2.1.6 Storm Water Pollution Prevention

Storm water best management practices (BMPs) help reduce the potential for pollutant discharges into the SPA Open Space, in particularly the Wetland Preserve, and are required by the State Water Resources Control Board for any project over one acre in size or smaller projects that are part of a larger project. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and implemented to control sediment and erosion during construction. This includes preventing sediment-laden runoff from dust control and dewatering. 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 SPA Open Space. For all construction related activities in and adjacent to the SPA Open Space, perimeter BMPs shall be installed (e.g., straw wattle, silt fencing, etc.) and maintained as a minimum sediment control measure at all times (year round).

2.1.7 Use of Native Grasses in Post Construction Revegetation

During initial construction of the within the Passive Open Spaces, and after, when construction work disturbs soil within the SPA Open Space, all seed used to revegetate must be native to California, preferably ecotypes from the Sacramento or surrounding counties. Attachment G provides guidelines for seed mixes for different revegetation situations, but the project engineer will consult with a qualified biologist and will ultimately need to approve the seed mix to ensure that the seed mix will result in revegetation that meets required performance standards. Attachment G also provides local native grass seed companies.

2.1.8 Trash Removal and Post Construction Clean-Up

During construction, paper trash, food wrappers, and other trash often blows into open space areas from adjacent construction sites. The developer or the developer's contractor will remove trash blown into the SPA Open Space from adjacent construction on a daily basis. After construction is complete and the temporary construction fencing has been replaced by permanent fencing (where applicable), temporary fencing and posts will be removed from the

SPA Open Space. Additionally, when disturbed areas adjacent to or within the SPA Open Space 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 SPA Open Space.

2.2 Preserve Management During Project Construction

The developer will serve as Preserve Manager during project construction until such time as improvements within and adjacent to the SPA Open Space is complete. Upon recordation of the Declaration of Restrictions, the Wetland Preserve will be managed by the Preserve Manager. The Declaration of Restrictions will be recorded concurrent with or prior to the initiation of construction activities within each given phase of each development.

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3.0 SPA OPEN SPACE OWNERSHIP AND FUNDING MECHANISM

As indicated previously the SPA Open Space is made up of two components: the Passive Open Space and the Wetland Preserve. The ownership, management, and funding responsibilities for each area are described in this Section.

3.1 Wetland Preserve Owner and Preserve Manager

The area that will become the SPA Open Space is currently owned by multiple property owners (developers). Once construction is completed in a given phase of the SPA Open Space, that phase of the SPA Open Space will be dedicated to the City. Once the City has accepted the dedication and is the owner of that portion of the SPA Open Space, the City will be responsible for resolving any issues that arise in relation to the Wetland Preserve areas within that phase of the SPA Open Space. Additionally, the City will be the Preserve Manager responsible for conducting all maintenance and monitoring activities for the Wetland Preserve described in this Plan for all areas dedicated to the City.

3.1.1 Funding Mechanism

The amount needed to fund the long-term management and monitoring described in this Plan for each year is shown in Property Analysis Record (PAR) printout Section 9 (Attachment H). Funding for the perpetual maintenance of the Wetland Preserve areas will ultimately be provided through a Landscape and Lighting District or Community Facilities District. It is likely that the funding for the Wetland Preserve will become available in phases as each phase of development is completed and the associated funding source begins drawing revenue.

3.1.1.1 Property Analysis Record

PARs are generated through the use of a computer program written by the Center for Natural Lands Management to allow government agencies, land trusts, and preserve management foundations and organizations to better define and understand the financial obligations that come with managing natural areas. The program lists a number of activities, structures, and overhead costs associated with preserve management and allows the user to choose the tasks that apply. These costs are then tabulated and printed out for budgeting purposes.

3.1.1.2 Contingency Funds

A part of the funding for the management of the Wetland Preserve is a contingency fund as shown in the PAR. This fund is in place for emergencies such as vandalism of fencing, signage, or other unanticipated needs.

3.2 Passive Open Space Owner and Manager

The Passive Open Space will be owned and managed by the City.

4.0 SPA OPEN SPACE PERSONNEL

The roles outlined below make up the primary personnel that will oversee, monitor and coordinate the maintenance and management of the SPA Open Space. They are intended to work together as a team to manage the SPA Open Space.

4.1 Preserve Manager

The Wetland Preserve areas will be managed by the City, pursuant to the Declaration of Restrictions (Attachment C) and this Plan. Funding for the perpetual management and care of the Wetland Preserve areas will be provided for through a Landscape and Lighting District or Community Facilities District as described under Section 3.0.

4.1.1 Preserve Manager Responsibilities

The Preserve Manager's responsibilities and duties shall include but not be limited to:

- Reviewing construction activities in and adjacent to the Wetland Preserve.
- Monitoring and seeking correction for impacts to the Wetland Preserve from adjacent land uses.
- Coordinating General Inspections of the Wetland Preserve as required by this Plan.
- Assuring that gates, fencing, and signage at the Wetland Preserve are maintained.
- Removing trash on a quarterly basis.
- Coordinating thatch or non-native (invasive) plant management, in coordination with the Monitoring Biologist.
- Coordinating grazing of the Wetland Preserve as discussed in this Plan.
- Coordinating Biological Inspections of the Wetland Preserve by a qualified biologist ("Monitoring Biologist").
- Reviewing monitoring data and coordinating with the Monitoring Biologist, the USACE, and the USFWS for any remedial action.
- Submitting an Annual Report in coordination with the Monitoring Biologist regarding the status of the Wetland Preserve to the USACE and the USFWS.
- Maintain a File for the Wetland Preserve. This File will contain a record of management and maintenance related activities, correspondence and determinations regarding the Wetland Preserve.
- Arrange for any corrective action necessary to ensure the performance of the habitat within the Wetland Preserve.
- Coordinate use of the Wetland Preserve for education, restoration efforts, or other tasks such as grant proposals.
- Work proactively with the Monitoring Biologist and agency staff.

4.2 Use of Qualified Personnel/Monitoring Biologist

If the Preserve Owner/Manager does not have the appropriately trained staff to carry out any of the specialized tasks required by this Plan, the Preserve Owner/Manager shall retain consultants, professional biologists, botanists, or other types of specialists (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 regarding Valley foothill riparian species and their ecology.

4.2.1 *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.
- Evaluate the presence of newly introduced non-native (invasive) plant species and recommend management, if needed. (This will be limited to new populations or new species. It is understood that there is an existing suite of non-native invasive plant species in the Wetland Preserve areas.)
- Conducting the Biological Inspection, collecting data on the Wetland Preserve areas and preparing reports required by this Plan.
- Evaluating site conditions and recommending remedial action to the Preserve Owner/Manager.
- Assist in reviewing or planning restoration activities, use of the Wetland Preserve areas for education, or other tasks such as grant proposals.
- Work with the Preserve Owner/Manager and agency staff.

All cultural resources work carried out pursuant to this Plan and, if applicable, the MOA shall be conducted, as appropriate, by or under the direct supervision of a person who at a minimum meets the Secretary of the Interior's *Professional Qualification Standards for Archaeology* (48 FR 44739) and who has had at least one year of full-time professional experience at a supervisory level in the study of archaeological resources of the historic period.

4.3 **Passive Open Space Managers**

The Passive Open Space in the SPA Open Space will be managed by the City, or a third party, if relevant. The specific maintenance that is planned to occur within these areas is described in Section 11.0.

4.4 **Aerojet Remediation Personnel**

Although not directly tied to the maintenance or management of the SPA Open Space, Aerojet Remediation personnel are required to access areas of the SPA Open Space. In order to comply with the Regulatory Agency mandated environmental Response requirements, as defined in 42 U.S.C. Section 9601 (25) or comparable environmental action requirements ("Regulatory Agency Response Action Requirements"), Aerojet Remediation personnel will occasionally enter the SPA Open Space to access, install, remove and maintain extraction wells and other associated facilities. Aerojet Remediation personnel should work with the City/Preserve Manager so that all parties are aware of activities occurring within the SPA Open Space. If construction of new wells or modification of existing wells within the Preserve area is necessary notification to the USACE or USFWS is required.

4.5 Changes in Personnel

If the SPA Open Space Owner, Preserve Manager, Qualified Personnel, or any other management personnel are changed, the outgoing and incoming personnel will tour the SPA Open Space together and the former will advise the latter of trends, problem areas, and any administrative difficulties.

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5.0 LONG TERM PRESERVE INSPECTIONS AND REPORTING OF THE WETLAND PRESERVE

Once a declaration of restrictions is recorded against a portion of the Wetland Preserve monitoring will begin for that portion. There is no regular biological monitoring of the Passive Open Space. The schedule for the long-term monitoring is described in the following Section.

5.1 Schedule

The schedule of inspections for the Wetland Preserve is as follows:

- The Monitoring Biologist shall conduct four Biological Inspections each year, once per quarter.
- The Preserve Manager shall conduct (at minimum) two General Inspections each year.

Please see Attachment I for a suggested monitoring timeline. Quarterly is a general guide, the surveys should be timed to best meet the monitoring goals.

5.2 Biological Inspections

In managing the Wetland Preserve, measures must be taken to help ensure that the existing conditions are maintained over the long-term. Inspections by a qualified biologist will help ensure the long-term integrity of the wetland and upland habitats.

The Biological Inspections of the Wetland Preserve will be conducted by the Monitoring Biologist quarterly in order to qualitatively monitor the Wetland Preserve habitats as well as general wetland function, thatch accumulation, newly introduced invasive species, overall Wetland Preserve function, and potentially the grazing regime. The entire perimeter of the Wetland Preserve will be covered, as well as meandering transects through its interior. The surveys are more particularly described below. The first inspection will focus on the hydrology of the vernal pools and the presence of listed vernal pool crustaceans. The second inspection is intended assess the various wetland habitats during the floristic season in particular, the vernal pool habitat. The third inspection will assess the grassland and oak woodland habitats; and the fourth will focus on the riparian habitats, grazing regime, and assessing the success of restoration efforts or remediation activities. Although each of these surveys has a focus, all aspects of the Wetland Preserve will be reviewed, generally, during each visit.

5.2.1 Biological Inspection Tasks

In general, the following aspects of the Wetland Preserve should be monitored during all Biological Inspections.

5.2.1.1 Wetland Function

The purpose of assessing habitat function is to ensure that the preserved wetlands and uplands are continuing have the appropriate hydrologic regime, monitor anthropogenic influences on the different habitats, and to informally document (make a species list as meandering transects are

walked) the plant species that are present and animal species that are using the Wetland Preserve.

5.2.1.2 Thatch Accumulation and RDM Monitoring

The Monitoring Biologist will make an annual determination regarding thatch accumulation during the summer inspections. The summer inspections will include a qualitative evaluation of RDM levels, which may be completed by the Monitoring Biologist or Preserve Owner/Manager. Several management practices can be used to address this issue including controlled burning, mowing, or grazing as described in Section 9.2.2.2.

If grazing is to occur, portions of the Wetland Preserve to be grazed would be leased annually, and adjustments would be made each year to manage the site for the target residual dry matter (RDM - the amount of plant material remaining after a season of grazing). The Wildland Solutions technique (Wildland Solutions 2008), or a similar technique, should be utilized to qualitatively assess vegetation.

The Wildland Solutions assessment technique involves the use of a Robel Pole (a 1-1/8" diameter PVC pipe marked in one inch increments) and two painted golf balls, placed on either side of the Robel Pole, as visual reference points. These visual reference points will be assessed at a distance of 20 feet and 10 feet. Photographs will be taken of each visual reference point at a distance of 20 feet and a height of 5 feet to provide a permanent record of site conditions. The degree of visibility at these distances gives a good estimate of RDM.

Four permanent RDM stations will be established within the grasslands. The permanent stations will be selected to include a full range of variability in topographic position, soil type, slope and aspect. No permanent stations will be located in vernal pools or wetland swales due to their overall low productivity. Each station will be monitored annually using the visual technique described in the Wildland Solutions guide. The results will be used to maintain the grassland at levels of RDM considered appropriate for vernal pool grassland habitat (800-1000 pounds per acre).

5.2.1.3 Newly Introduced Non-Native Plant Species

Throughout the years the Monitoring Biologist will assess the presence of any problematic invasive non-native plant species that become established within the Wetland Preserve and recommend corrective actions as needed. Special attention will be paid to invasive plants. A baseline map will be developed in the first few years and will be used in this annual assessment. During baseline weed mapping, the Monitoring Biologist will walk meandering transects throughout the Wetland Preserve and will identify any problematic non-native plant populations. The extents/locations of invasive species will be mapped using a combination of Global Positioning Units (GPS) data logging and aerial photo interpretation. These data will be used to create a complete baseline weed map using an ESRI ArcGIS mapping program.

5.2.1.4 Wetland Preserve Function

The overall Wetland Preserve function should be assessed, taking into account the above factors and the purpose of the Wetland Preserve, which is to support the flora and fauna of the preserved wetlands and uplands in perpetuity.

5.2.2 Survey Descriptions and Methods

The following paragraphs describe the methods for the surveys to be conducted on an annual basis during the three Biological Inspections.

5.2.2.1 Winter Survey

The purpose of this survey is to review the hydrologic conditions of the site's vernal pools and monitor for changes in the watershed that may affect vernal pool hydrology. The hydrologic integrity of vernal pool habitat is of primary importance to maintaining any current populations of the listed crustacean species. This survey should occur between December and March. The preserved wetlands will be qualitatively assessed for hydrologic function and notes will be made regarding the hydrology of any pools that appear too wet or too dry for the typical hydrologic regime for that wetland type. During this field visit, using a fine mesh dip-net, a USFWS permitted biologist will sample a minimum of ten percent (10%) (randomly selected annually from throughout the Wetland Preserve) of the preserved vernal pools for listed crustacea. The Monitoring Biologist will note any vernal pool branchiopods. A sample data sheet is included in Attachment J for this purpose. When appropriate, management recommendations to preserve vernal pool hydrology and wetland function of other wetlands will be made by the Monitoring Biologist to the Preserve Manager. A 90-day report of findings will be submitted to the USFWS each year that sampling takes place. The Monitoring Biologist's federal permit requires this report. Additionally, all items listed under Section 5.2.1 will be assessed.

5.2.2.2 Spring Survey

The spring survey will occur between April and June. Vernal pool flora will be qualitatively assessed for ten percent (10%) of the vernal pools (randomly selected annually) located throughout the Wetland Preserve. A sample data sheet for this survey has been included in Attachment J. The Monitoring Biologist will assess the vegetative cover and determine if each monitored vernal pool continues to be dominated by vernal pool plant species, recognizing that some of the vernal pools in the Wetland Preserve may not currently be dominated by vernal pool plant species. Plant species having twenty-five percent (25%) vegetative cover or greater will be considered dominant. Of these species, at least eighty percent (80%) will be classified as "vernal pool indicators" or "vernal pool associates" as described in *"California Vernal Pool Assessment Preliminary Report"* (CDFG 1998). It should be recognized that, pre-project, some pools likely do not meet this 80% goal. If the 80% threshold is not met for any individual vernal pool and it does not appear that the pool was historically more of a marginal pool, then notes regarding possible causes for changes in species distribution and recommendations regarding remedial action, if any, should be included in the annual letter report. If none of the plant species in the pool have twenty-five percent (25%) cover or greater, then the plant species with ten percent (10%) cover or greater will be considered dominant and will be analyzed in the same manner. Additionally, all items listed under Section 5.2.1 will be assessed.

5.2.2.5 Summer Survey

As the specific biological monitoring outlined in this section is conducted, the general condition of the oak woodland/savannah will be noted. Specific monitoring methods are outlined below.

Vegetation Monitoring

Understory Grassland Monitoring

A minimum of 5 upland grassland plots will be established throughout the Wetland Preserve. The locations of the initial plots will be determined prior to the finalization of this Plan. These plots should include few random locations across the Wetland Preserve and purposefully selecting points to monitor known native grass populations, areas where invasive weeds are prevalent, or other desired areas. Additional plots within the Wetland Preserve 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 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 around July (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 Attachment J.

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, 5 half-hectare (50m x 100m) representative oak woodland/savannah plots will be established throughout the Wetland Preserve. The locations of the plots will be determined prior to the finalization of this Plan. These plots should include a few random locations across the Wetland Preserve and some purposefully selected points to monitor locations where regeneration has been poor, areas where invasive plants are prevalent, or other desired areas. Additional points within the Wetland Preserve 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 Attachment J.

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 invasive plant map.

5.2.2.4 Fall Survey

The third survey will occur in August or September and will focus on upland habitats, problem areas, and assessing the success of remediation activities and potentially the grazing regime for the coming grazing season. The Monitoring Biologist will make an annual determination of thatch accumulation by using the Residual Dry Matter monitoring guide used in grazing monitoring (Attachment K) 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 Preserve 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 9.2.2. See Section 5.2.1.2 for additional information regarding the monitoring required to assess the grazing regime. Additionally, all items listed under Section 5.3.1 will be assessed.

5.3 General Inspections

The Preserve Manager will conduct General Inspections twice annually. Inspections will concentrate on an evaluation of the following factors: erosion, fire hazard reduction, fencing integrity, condition of signage, trash accumulation, and evidence of unauthorized use by motor vehicles. The entire perimeter of the Wetland Preserve will be covered, as well as meandering transects through its interior. A Preserve Inspection Sheet (Attachment L) will be utilized in order to evaluate these potential problem areas during each field visit. Previous inspection sheets will be reviewed before each visit in order to determine that a possible or recurring problem area is not missed. If any problems are identified, more frequent inspections will be used to closely track any problems as well as to ensure that remedial actions are effective. Evaluation and corrective actions for each potential problem area are described below:

5.3.1 Erosion and Sedimentation

If it is determined that adjacent sheet-flow drainage is causing any erosion, sedimentation or other adverse effects upon the Wetland Preserve, immediate standard erosion control measures (such as the installation wattles) will be implemented. This is most crucial during initial construction activities. If any significant erosion/sedimentation problems occur that result in discharge of sediment into waters of the U.S., the USACE and the USFWS will also be notified and a qualified erosion control specialist will be consulted. See Section 12.0 for remediation

actions for sedimentation. The developer or other parties conducting allowed construction activities within or adjacent to the Wetland Preserve will be responsible for the installation and maintenance of erosion and sediment control measures.

5.3.2 Fire Hazard Reduction

If at any time conditions at the Wetland Preserve become a fire hazard, and require measures beyond a firebreak, the Preserve Owner/Manager will work with USACE, the USFWS, and the local fire authorities to decide on the best method to reduce the fire risk at the Wetland Preserve. The majority of the firebreaks will occur within the Passive Open Spaces, however there are a few instances where a firebreak within the Wetland Preserve is anticipated. Firebreaks are allowed as shown in Attachment A. Firebreaks in other locations within the Wetland Preserve require USACE and USFWS approval.

5.3.3 Fencing, Gates, and Signage

The condition of the fencing, gates, and signage at the Wetland Preserve will be assessed during the General Inspection. The Preserve Owner/Manager will be responsible for maintaining the fencing, gates, and signage, except for residential fencing. Residential fencing will be maintained by the individual homeowner and will be enforced through deed disclosures and the Homeowners Association. The developer(s) are responsible for the initial installation of fencing.

5.3.4 Trash Accumulation

The Preserve Owner/Manager will arrange for the removal of trash from the Wetland Preserve quarterly, or more often if necessary.

5.3.5 Unauthorized Motor Vehicle Use

The perimeter of the Wetland Preserve will be inspected for evidence of unauthorized motor vehicle use/access. If necessary, corrective actions such as repairing locks and gates will be taken. The Preserve Owner/Manager will be responsible for taking the proper corrective actions.

5.4 Agency Monitoring/Inspection

The USACE and the USFWS may inspect and monitor the condition of the Wetland Preserve at any time.

5.5 Annual Reporting Requirements

The Monitoring Biologist will prepare an Annual Report for the Wetland Preserve in conjunction with the Preserve Owner/Manager, which will be submitted to the USACE and the USFWS by June 30th of each year. The letter report will include at minimum, a map of the Wetland Preserve, photos documenting the status of the Wetland Preserve, a description of proposed activities and maintenance or management actions as required by this Plan, a description of actions for which USACE and USFWS notification or approval was not needed, but were carried out during the year, observations from the Biological Inspections, and recommendations for

altered management practices as needed. The report will refer to the USACE regulatory branch number for each project (see Section 1.5.14) and the USFWS file number (see Section 1.5.2). The reports will be sent to the attention of Chief, Sacramento Valley Office, Regulatory Branch, at the USACE and Division Chief, Endangered Species Branch, Sacramento Field Office, at the USFWS.

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6.0 AGENCY NOTIFICATION

The USACE and the USFWS have expressed a desire to be notified when certain management and maintenance activities are undertaken within the Wetland Preserve. It is also recognized that the Preserve Owner/Manager needs to be able to carry out management and maintenance activities in a timely and responsive manner. (In this section "Agency" or "Agencies" means the USACE and the USFWS.) Therefore, the following notification requirements have been defined:

6.1 No Notification Required

If an activity in this Plan does not have a specific requirement for notification, is not a Prohibited Activity (see Section 8.0), review and approval or a permit is not required, then no notification is required. If an activity was not anticipated by this Plan, and therefore is not mentioned, notification is required.

6.2 Notification

For those activities noted in this Plan as requiring Agency notification, the following action 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 Preserve Owner/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 contact the Preserve Owner/Manager to discuss the activity if they do not approve. If the Preserve Owner/Manager is not contacted within 60 days, then the activity will be considered approved. Notification will be made either by fax, email, registered mail, or overnight transmittal.

6.3 Review and Approval

For those activities noted in this Plan as requiring Agency review and approval, the following action 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 Preserve Owner/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.

6.4 Activities Requiring a Permit

While this Plan has been designed to assist the Preserve Owner/Manager to preserve and maintain habitats within the Wetland Preserve and it is not anticipated that routine management activities will affect waters of the U.S., VELB habitat, and/or cultural resources. The purpose of this section is to clarify that any actions not anticipated by this Plan may require a separate permit or other authorization from the USACE and/or USFWS.

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.”

An authorization (Permit) under Section 404 of the Clean Water Act may be required if an activity within the Wetland Preserve will impact waters of the U.S., including wetlands and was not previously permitted. Also, if a project will not result in the permanent loss of waters of the U.S., including wetlands, only temporary loss or “impact”, a permit may still be required. As of the date of this Plan, there are several Nationwide Permits (Nationwide Permits [NWP] are permits for categories of activities that result in minimal impacts on the aquatic environment, many with a 0.50-acre limit on loss of waters of the U.S.) available for maintenance and related activities that might occur within a preserve area. These are NWP 3, *Maintenance*; NWP 7, *Outfall Structures and Maintenance*; NWP 12, *Utility Line Activities*; NWP 13, *Bank Stabilization*; and NWP 27, *Stream and Wetland Restoration Activities*. Issuance of a permit by the USACE may require the USACE to consult with the USFWS pursuant to Section 7 of the Endangered Species Act. Through Section 7 consultation, the USFWS issues a biological opinion that addresses the anticipated effects of the proposed action on listed and proposed species and may authorize a limited level of incidental take¹. If the USACE or another federal agency is not involved with the project, and federally listed species may be taken as a result of the proposed action, then an incidental take permit pursuant to Section 10(a)(1)(B) of the Endangered Species Act should be obtained. The USFWS may issue such a permit upon the permit applicant’s completion of a satisfactory habitat conservation plan for the listed species that would be taken by the project. The USFWS also may provide technical assistance upon request if there is a question as to whether an activity may affect listed and/or proposed species, and to recommend measures that can be taken to avoid or minimize adverse effects. Specific

¹ Take is defined as: “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect listed animal species, or attempt to engage in such conduct” (16 U.S.C. 1538). Harm has been further defined to include habitat destruction when it injures or kills a listed species by interfering with essential behavior patterns, such as breeding, feeding, foraging, or resting. “Harass” in this definition means “...an intentional or negligent act or omission that creates the significant likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR § 17.3). The term “person” is defined as “an individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal government, of any State, municipality, or political subdivision of a state, or any other entity subject to the jurisdiction of the United States.”

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 USACE permit, or USFWS consultation, the Preserve Owner/Manager should seek guidance from the USACE and/or USFWS, as appropriate.

The Preserve Owner/Manager may avoid negative effects to federally-listed species by designing and implementing measures that will minimize effects to the species to the extent that no "take" of listed species will occur.

6.5 Emergency Situations

Should an emergency situation arise that requires immediate action in an upland area, and would normally require that the USACE and/or USFWS be notified or have review and approval authority, the USACE and/or USFWS will be notified verbally within 48 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 waters of the U.S., including wetlands, but would normally require that a permit be obtained from the USACE, 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.

CDFG 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.

6.6 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 Owner/Manager must notify the USFWS, 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.

7.0 PROHIBITED ACTIVITIES WITHIN THE WETLAND PRESERVE

This section outlines the restrictions on activities that can take place in the Wetland Preserve areas. **It is understood that the following activities are prohibited, except as needed to accomplish the management and maintenance activities described in this Plan. Additionally, if any of these prohibited activities must be undertaken due to special circumstances, they may be reviewed and approved by the USACE and/or the USFWS on a case-by-case basis.**

7.1 Access to the Wetland Preserve

There is no planned public access to the Wetland Preserve, however pedestrian paths are planned within the adjacent Passive Open Space. Pedestrian and bicycle access will be limited to the approved trails within the Passive Open Space in order to minimize unintended impacts to the Wetland Preserve. Additionally, off-trail pedestrian or bicycle access to the Wetland Preserve should be discouraged through signage, fencing, and/or natural barriers. See Section 9.2.1 for a description of authorized access. All other off-trail access to the Wetland Preserve is not allowed.

7.2 Vegetation Removal

No killing, removal, or alteration of any existing native vegetation will be allowed in the Wetland Preserve except as described in this Plan.

7.3 Burning and Dumping

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

7.4 Disking

No disking can occur in the Wetland Preserve.

7.5 Additional Roads, Trails, and Utility Lines

Roads, trails, and utility lines not identified in this Plan will not be allowed in the Wetland Preserve without review and approval of the Preserve Owner/Manager, USACE, and the USFWS.

7.6 Equipment or Fuel Storage

There will be no equipment or fuel storage within the Wetland Preserve.

7.7 Topography

Once adjacent development is complete and authorized structures (e.g., outfalls) have been constructed, no alteration may be made to the existing topography of the Wetland Preserve without the review and approval of the USACE. This includes leveling, grading, or removal of

tailings rock. No exploration, development, or extraction of oil, gas or minerals may be made from the Wetland Preserve.

Installation of new extraction wells is allowed, however if the installation will result in the impact of any biological or cultural resource, review and approval of the USACE, the USFWS, and California SHPO (if deemed appropriate by the USACE) will be necessary. In either case, the Preserve Manager and the USACE should be notified prior to the installation of new extraction wells.

7.8 Pesticides and Chemical Agents

Pesticides and Chemical Agents shall be used as described in Section 9.2.3.3.

7.9 Motor Vehicle Use

No motorized vehicles shall be ridden, brought, used, or permitted on any portion of the Wetland Preserve except as is necessary for maintenance purposes such as stream maintenance (including flood control structures), installation and maintenance of extraction wells, non-native (invasive) plant species management, fencing repair or replacement, trash removal, for emergency or law enforcement situations requiring access by medical, fire or law enforcement vehicles, and access as necessary for utility maintenance.

7.10 Construction

Once adjacent project development is complete and the anticipated structures and improvements within the Wetland Preserve are in place (e.g., outfalls), no construction, placement of new structures, or new roads shall be allowed in the Wetland Preserve without the review and approval of the USACE and/or the USFWS. Installation of new extraction wells and associated utility lines is allowed; however, if impacts to biological or cultural resources will occur as a result of the installation of the well the USACE, the USFWS, and California SHPO (if deemed appropriate by the USACE) will be consulted.

7.11 Non-Native Plants

No non-native plants will be planted in the Wetland Preserve. Please refer to Attachment M for a list of problematic species to avoid planting adjacent to the Wetland Preserve.

8.0 PROHIBITED ACTIVITIES WITHIN THE PASSIVE OPEN SPACE

Although the Passive Open Space are not subject to the Declaration of Restrictions they are a part of the SPA Open Space and activities within these areas could result in inadvertent impacts to the Wetland Preserve areas. This section provides a summary of activities that are prohibited.

8.1 Access to the Passive Open Space

The intent of the Passive Open Space is to allow limited recreational use for residents while maintaining the adjacent habitats in perpetuity. Pedestrian and bicycle access will be limited to the approved trails within the Passive Open Space. Off-trail pedestrian or bicycle access into the Wetland Preserve areas should be discouraged through signage, fencing, and/or natural barriers. See Section 9.2.1 for a description of authorized access. All other off-trail access to the Wetland Preserve areas is not allowed.

8.2 Vegetation Removal

Vegetation removal within the Passive Open Space is allowed, however in order to maintain a natural setting the City should remove the minimum amount of vegetation necessary. Care should be taken to avoid removing elderberry shrubs and vegetation removal work should avoid mechanical removal of vegetation around any cultural resource. Chemical agents may not be applied within 100 feet of an elderberry shrub. Vegetation removal associated with the water quality basins and adjacent to outfalls is permitted, but should be limited to the area of the basins.

8.3 Burning and Dumping

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

8.4 Disking

Light disking for firebreak purposes can occur in the Passive Open Space of the SPA Open Space, however mowing is the preferred method for firebreak maintenance. All other disking should be avoided, except for disking associated with activities performed under the EPA Requirements.

8.5 Additional Roads, Trails, and Utility Lines

Roads, trails, and utility lines identified in this Plan will be allowed in the Passive Open Spaces and were reviewed and approved by the USACE, the USFWS, and California SHPO as part of the Permit and the Biological Opinion. Installation of new trails within the Wetland Preserve area and significant modifications to approved trail alignments, may require review and approval of the Preserve Owner/Manager, the USACE, the USFWS, and California SHPO (if deemed appropriate by the USACE).

Access to and the installation, removal and maintenance of extraction wells and other facilities is allowed, however if the activities will result in the impact of any biological or cultural resource, review and approval of the USACE and the USFWS will be necessary. In either case, the Preserve Manager should be notified prior to the installation of new extraction wells.

8.6 Equipment or Fuel Storage

There will be no permanent equipment or fuel storage within the Passive Open Space.

8.7 Topography

Maintenance of authorized structures is allowed, provided that maintenance will not impact waters of the U.S., sensitive habitats, or cultural resources without first obtaining the appropriate authorization and/or permits.

Installation of new extraction wells is allowed, however if the installation will result in the impact of any biological or cultural resource, review and approval of the USACE, the USFWS, and California SHPO (if deemed appropriate by the USACE) will be necessary. In either case, the Preserve Manager should be notified prior to the installation of new extraction wells.

8.8 Pesticides and Chemical Agents

Pesticides and Chemical Agents shall be used as described in Section 9.2.3.3.

8.9 Motor Vehicle Use

No motorized vehicles shall be ridden, brought, used, or permitted on any portion of the SPA Open Space except as necessary for SPA Open Space maintenance purposes such as stream maintenance (including flood control structures), installation and maintenance of extraction wells, non-native (invasive) plant species management, fencing repair or replacement, trail maintenance, trash removal, emergency or law enforcement purposes, and access as necessary for utility maintenance.

8.10 Construction

Once adjacent project development is complete and the anticipated structures and improvements within the Passive Open Space are in place (e.g., water quality basins, outfalls, trails, trail amenities), no construction, placement of new structures, or new roads shall be allowed in the Passive Open Space without the review and approval of the City. If construction will impact waters of the U.S. or other sensitive resources, the USACE, USFWS, and/or California SHPO may need to be contacted. Maintenance of authorized structures is allowed provide that maintenance will not impact waters of the U.S., sensitive habitats, or cultural resources without first obtaining the appropriate authorization and/or permits.

Access to and the installation, removal and maintenance of extraction wells and other facilities is allowed, however if the activities will result in the impact of any biological or cultural resource, review and approval of the USACE and the USFWS will be necessary.

8.11 Non-Native Plants

No non-native plants will be planted in the Passive Open Space. Please refer to Attachment M for a list of problematic species to avoid planting within the SPA Open Space.

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9.0 LONG TERM MANAGEMENT OF THE WETLAND PRESERVE

9.1 Adaptive Management

In preparing a management plan for habitat to be preserved in perpetuity, it must be acknowledged that there will undoubtedly be future developments in habitat and species management that may affect how the Plan Goal is met. This management plan can only provide guidance for adopting new technologies or practices as they are developed. Ultimately, the Preserve Owner/Manager in coordination with the Monitoring Biologist, the USACE, and the USFWS, must determine the appropriate management decision for a given situation.

The following management strategies, approved uses, and restrictions are intended to provide a framework for the long-term management and operation of the Wetland Preserve. Before considering any management action, the Preserve personnel must consider the Plan Goal, which is to ensure that the protected wetland and upland habitats within the Wetland Preserve are maintained in good condition such that it will continue to support the flora and fauna of the uplands and waters of the U.S., including wetlands, in perpetuity. Furthermore, this Plan cannot anticipate all possible site conditions. Therefore, if a condition arises which is not specifically addressed by this Plan, the Preserve Owner/Manager may upon review and approval by the USACE and the USFWS, adopt techniques not described here.

9.2 Preserve Management Activities and Guidelines

The following outlines management and maintenance activities that are allowed within the Wetland Preserve.

9.2.1 Authorized Access

The intent of the Wetland Preserve is to maintain the habitats and resources of these areas in perpetuity, limited access to the Wetland Preserve will further this goal. Public access to the SPA Open Space will be limited to the trail system within the Passive Open Space. No regular public access to the Wetland Preserve is permitted. Passive and educational access to the Wetland Preserve is encouraged, but should be coordinated with the Preserve Owner/Manager to reduce the potential for inadvertent impacts to protected habitats. The public can learn to respect and enjoy the protected habitats and resources if they are provided appropriate access. Pedestrian access to any portion of the Wetland Preserve will be discouraged through signage, fencing, and/or natural barriers. Access to the Wetland Preserve for maintenance activities (such as utility maintenance) is allowed, but should be restricted to the immediate area where maintenance is occurring. Access for the installation of new ground water extraction wells is allowed, pending review and approval of the Agencies, if necessary, and notification to the Preserve Manager. If in the future it is decided to use grazing to either manage invasive species or for firebreak maintenance, access to the Wetland Preserve by the grazing contractor will be allowed. Access to the Wetland Preserve for mosquito abatement activities, in emergency or law enforcement situations, by medical, fire or law enforcement personnel or vehicles is allowed. Approved access to the Wetland Preserve for educational, clean-up, well-monitoring, or habitat restoration activities is allowed (See Section 12.0). Other authorized access may be required to maintain habitats, these specific activities and the access required will be determined as the project moves forward.

9.2.2 Thatch Management

Historically, grassland habitats burned periodically due to the occasional wildfire. These fires would burn dead plant material or thatch, keeping it from building up. Native ungulates, and later cattle, have inhabited the grasslands within the Wetland Preserve. The grazing and trampling action of these animals also would have reduced the amount of dead plant material. In urban preserves, thatch has an opportunity to build up because of the lack of fires and grazing. This buildup of thatch can be detrimental to the Wetland Preserve habitats. During the one of the biological surveys (as discussed in Section 5.2), the Monitoring Biologist will make a determination as to the extent of thatch accumulation and if it is adversely impacting the Wetland Preserve habitats. Two methods for managing thatch are outlined below:

9.2.2.1 Mowing

One method to remove thatch is the mechanical mowing. In order for mowing to be effective for thatch removal, the cut material would need to be removed from the site. In addition, the mowing regime should be timed in order to minimize the invasion of non-native weedy upland species, particularly yellow star-thistle. Equipment should be cleaned prior to entry into the Wetland Preserve to avoid the spread of invasive species. 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 this Wetland Preserve. It is anticipated that such mowing practices would be needed, at the most, once every two to three years. Mowing equipment is allowed in the Wetland Preserve for thatch management. Mowing does not require agency notification.

9.2.2.2 Grazing for Habitat Management

The goals of grazing within the Wetland Preserve are to maintain species diversity and desired species composition by reducing the accumulation of thatch within the wetland and upland areas. Grazing is not required by this Plan, but is discussed here in the event that it is selected as a management technique. Due to the size and/or configuration of the Wetland Preserve, goats and/or sheep would likely be the preferred grazers.

An essential component of the success of this grazing management is regular communication between the Preserve Owner/Manager, the Monitoring Biologist, and the grazing contractor regarding decisions about adjusting the below mentioned grazing variables. Coordination of grazing practices with the other long-term Wetland Preserve management methods will enhance the overall long-term viability the Wetland Preserve. The grazing contractor will be oriented from the start as to the sensitivity of the habitat present at the Wetland Preserve and of the goals of this Plan. The Preserve Owner/Manager should choose a grazing contractor who understands, and is in agreement with, the goals of managing the Wetland Preserve.

9.2.3 Non-Native Plant Species Management

Management of non-native plant species can be a complex and expensive task. It is important to recognize that the Preserve Owner/Manager can only conduct as much non-native (invasive) species management as can be accomplished with the funding provided as part of this Plan or by obtaining other funds such as grant funds (not required by this Plan).

The Monitoring Biologist and the Preserve Owner/Manager can refer to the species found on the California Invasive Plant Council (Cal-IPC) California Invasive Plant Inventory (2006 and 2007) to assist them in determining if a plant is an invasive plant species of concern. The Table 1 of the current lists has been included as Attachment N, however Cal-IPC may update this list from time to time. The new list will be appended to this Plan as it is updated. The list can be found at <http://www.cal-ipc.org/>.

During the first two or three years of surveys, a general map of invasive plants on the Cal-IPC inventory will be mapped either through the use of aerial photographs or GPS technology. When finalized, the map can be added to this Plan. The map should be updated every 5 years or as needed. In these years and for the initial mapping, funding for mapping will be from the endowment funds set aside for non-native plant management. This map can be used in subsequent years as a baseline of existing conditions. It is unreasonable to require or expect eradication of established invasive species as identified in baseline surveys at the site. The required management of non-native plants will therefore be limited to the management of newly introduced invasive plants and working to contain the spread of existing invasive plant populations that are a threat to the Conservation Values as limited by available funding.

Beyond management activities, if the Preserve Owner/Manager would like to pursue more extensive removal of non-native species through volunteer efforts or grant funding, that is encouraged. The Monitoring Biologist and the Preserve Owner/Manager can refer to the species found on the California Invasive Plant Inventory to assist them in determining if a plant is an invasive plant species of concern, and which species should be given priority for management.

In addition to looking for existing invasive species during the General Inspections, the Monitoring Biologist will also assess the presence of any newly introduced invasive plant species during the Biological Inspections and recommend removal as needed. Three methods of removing or controlling these species are outlined below:

9.2.3.1 Hand/Mechanical Removal

Hand removal or use of small hand powered or handheld equipment (such as a Weed Wrench or a chainsaw) is always the preferred method of removing invasive plant species from the Wetland Preserve, if practical. If hand removal methods are tried and found to be ineffective, or the problem is too widespread for hand removal to be practical, then mechanical methods (use of larger equipment with motors such as mowers) or biological controls as described below can be implemented.

9.2.3.2 Biological Controls

Biological controls are natural parasites, predators or pathogens that are released to combat non-native species. For example, there are several natural enemies of yellow star thistle that have been introduced from Europe to act as biological controls against this invasive species. The insects begin life within the seed head of the flower and develop there, feeding on the seeds. County Agricultural Commissioner would be the point of contact for use of these biological controls within the Wetland Preserve. They currently (2010) do not have a program for providing the hairy weevil for biological control; however, they must be contacted if it biological controls obtained from other sources are proposed for use.

Biological controls should be used with caution and only after contact with the Agricultural Commissioners Office. If biological control methods are tried and found to be ineffective or if biological control methods are not available for the target species, then herbicides can be used, but only as outlined below. The USACE and the USFWS will be notified if biological controls will be used in the Wetland Preserve.

9.2.3.3 Use of Herbicides for Non-Native/Invasive Plant Management

Herbicides can be used for the management of non-native invasive plant species. Hand or mechanical removal should be the first choice for all non-native invasive plant species removal. Herbicides can be potentially harmful; however invasive species can also be extremely detrimental to native habitats. The use of chemicals will be considered carefully and the most recent research regarding the appropriate herbicide for the target plant will be reviewed prior to their use. Chemicals must be applied according to the label. This approval does not obviate the need for the Preserve Owner/Manager to obtain any other applicable approvals for the use of these chemicals.

9.2.4 Tree Removal

If any of the native trees at the Wetland Preserve become diseased and are a threat to other trees or are a danger to public safety or private property, removal will be allowed. This statement does not imply permission to undertake the removal of any tree without obtaining any appropriate tree removal permits, if applicable. Non-native tree removal is allowed. In addition, removal will be consistent with CDFG regulations if the tree is in a riparian area. Removal may require a nesting raptor survey consistent with applicable laws. If a tree has died, is not a threat to other trees, a danger to public safety, or to private property, removal is not required. Dead trees are often important habitat elements for wildlife and should remain in the Wetland Preserve.

9.2.5 Vegetation Debris Removal within Alder Creek

A drainage easement over the low-flow channel up to the 100-year floodplain will be dedicated to the City and/or Sacramento County Department of Water Resources. This drainage easement will allow the City and/or Sacramento County Department of Water Resources to conduct certain flood control activities within the drainage corridor. These activities may include vegetation removal adjacent to structures such as road or tail crossings and outfalls. Existence of this drainage easement does not negate the City's and/or Sacramento County Department of Water Resources' obligation to abide by federal and state laws. Vegetation removal for the maintenance of the channel in the Wetland Preserve may require a 1602 Streambed Alteration Agreement from CDFG. It should be noted that this type of work only be done if truly needed, to minimize disturbance to the drainages. Disturbance or removal of soil or sediment from the drainages will most likely require a Permit from the USACE. As such, written authorization or a permit will be required prior to undertaking such activities. The Preserve Owner/Manager should contact the USACE to determine what type of authorization for the maintenance work is required.

9.2.6 Beaver Management

The Preserve Owner/Manager will be responsible for assessing the beaver population within the Wetland Preserve. Reduction of predator populations and increases in perennial flows due to development in the region has apparently led to an increase in beavers throughout the area. If beaver dams become established, the City should consult with the Monitoring Biologist to 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 if removal of the beavers is appropriate. The use of beaver baffling devices is allowed. Situations where beaver management may be prudent are when beaver dams are causing water levels to rise such that they are causing or have the potential to cause property damage or adversely affect the adjacent wetlands and riparian vegetation. Care should be taken to weigh the effects of the beaver's presence. Beaver dams can also result in positive impacts to streamside habitat. Work should be done by hand, but if the dam is too large, equipment such as backhoe with rubber tracks/tires can be used. Vegetation removal for the maintenance of the channel in the Wetland Preserve may require a 1602 Streambed Alteration Agreement from CDFG. Disturbance or removal of soil or sediment from the drainages will most likely require a Permit from the USACE. The City will be responsible for managing beaver populations. If removal of beaver populations is deemed necessary then work will be done in consultation with CDFG.

9.2.7 Mosquitoes

If mosquito control within the Wetland Preserve is necessary, the local Mosquito Vector Control District (MVCD) will independently implement mosquito control measures. The Sacramento-Yolo MVCD has prepared a management plan for mosquito control (Sacramento-Yolo Mosquito Vector Control District 2005). This management plan addresses management strategies for dealing with mosquito populations within protected habitats. Due to recent occurrences of certain mosquito borne diseases, such as West Nile Virus, the MVCD has been conducting aerial as well as ground spraying. These techniques are used to combat large areas and are not designed in such a manner to allow exclusion of particular pieces of property. Thus, if these techniques are repeated there is no way of preventing these pesticides from entering the Wetland Preserve. If the MVCD plans on conducting a more targeted management activities within the Wetland Preserve it will be their responsibility to obtain any required State or Federal approvals.

9.2.8 Homeowner Liaison

The City will be responsible for informing residents whose property adjoins the Wetland Preserve if they are in violation of any of the stipulations of the Declaration of Restrictions and to require remediation if necessary (see Section 12.0).

9.2.9 Trash Removal

At minimum, the City will remove accumulations of trash and other unwanted debris from the Wetland Preserve quarterly, or more often if necessary.

10.0 LONG TERM MANAGEMENT OF THE PASSIVE OPEN SPACE

The purpose of this section is to provide guidelines for activities in the Passive Open Space. Although these areas are not subject to a declaration of restriction, care should be taken when managing these areas so that management will not result in inadvertent impacts to the Wetland Preserve areas.

10.1 Passive Open Space Management Activities and Guidelines

The following provisions outline management and maintenance activities that are allowed within the Passive Open Space.

10.1.1 Authorized Access

The intent of the Passive Open Space is to allow access to the SPA Open Space. Allowed public access to the SPA Open Space will be limited to the trail system within the Passive Open Space. This type of passive and educational access to the SPA Open Space is encouraged. The public can learn to respect and enjoy the protected habitats and resources if they are provided appropriate access. Off-trail pedestrian access to any portion of the Wetland Preserve areas will be discouraged through signage, fencing, and/or natural barriers. Access to the Passive Open Space for maintenance activities (such as trail maintenance, utility maintenance, ground water sampling) is allowed. Access for the installation of new ground water extraction wells is allowed, pending review and approval of the Agencies, if necessary. If in the future it is decided to use grazing to either manage invasive species or for firebreak maintenance, access to the Passive Open Space by the grazing contractor will be allowed. Access to the Passive Open Space for mosquito abatement activities, in emergency or law enforcement situations, by medical, fire or law enforcement personnel or vehicles is allowed.

10.1.2 Firebreak Management

Historically, grassland and oak savannah/woodland habitats burned periodically due to the occasional wildfire. These fires would burn dead plant material or thatch, keeping it from building up. Native ungulates, and later small grazers such as goats/sheep, inhabited the grasslands within the Passive Open Space. The grazing and trampling action of these animals would have reduced the amount of dead plant material. In urban open space areas, thatch has an opportunity to build up because of the lack of fires and grazing. This buildup of thatch can be detrimental to the habitats and result in an increased fire risk. The City will be responsible for maintaining the 30-foot firebreak that will occur at the back of residential and commercial lots. Firebreaks in other areas are not expected to occur. Firebreaks in the Passive Open Space are expected to include mowing or a light disking of a 30-foot path at the back of residential lots and if necessary pruning of trees up to a 6-feet in height. The City shall not conduct any firebreak activities within the Wetland Preserve.

10.1.3 Non-Native Plant Species Management

If an invasive weed species is found within the Passive Open Space it would be prudent to control this species before it has a chance to spread to the adjacent Wetland Preserve area. The City could contact the Monitoring Biologist to obtain suggestions for dealing with invasive

plant species. For restrictions on the use of herbicides and/or mechanical methods of weed control see Sections 9.2.3.1 and 9.2.3.3.

10.1.4 Tree Removal

If any of the native trees within the Passive Open Space become diseased and are a threat to other trees or are a danger to public safety or private property, removal will be allowed. This statement does not imply permission to undertake the removal of any tree without obtaining any appropriate tree removal permits, if applicable. Non-native tree removal is allowed, consistent with Section 9.2.3. In addition, removal will be consistent with CDFG regulations if the tree is in a riparian area. Removal may require a nesting raptor survey consistent with applicable laws. If a tree has died, is not a threat to other trees, a danger to public safety, or to private property, removal is not required. Dead trees are often important habitat elements for wildlife and should remain in the SPA Open Space.

10.1.5 Trash Removal

The City will be responsible for trash pickup along the roadways, trails and in areas adjacent to amenities.

11.0 INSTALLATION AND LONG TERM MAINTENANCE OF STRUCTURES AND IMPROVEMENTS

The following provisions outline the allowed maintenance of structures and improvements present within the SPA Open Space. Vegetation removal (e.g., mowing vegetation adjacent to trails and groundwater extraction wells) associated with these structures is not allowed unless explicitly stated below. If maintenance or replacement activities associated with these structures will directly impact preserved waters of the U.S. (including wetlands) or will occur within 100 feet of elderberry shrubs, the USACE or the USFWS will be notified and any appropriate permits will be obtained (see Section 6.4). If waters of the U.S. (including wetlands) or elderberry shrubs will not be impacted by maintenance or replacement of any of these structures or improvements, then the Preserve Owner/Manager will review the plans for the activity to be sure that as little disturbance to the Wetland Preserve occurs as possible, but the USACE and/or the USFWS will not have to be notified. These activities will be described in the Annual Report. In addition, areas disturbed will be restored (see Section 12.0).

11.1 Protective Measures to be Taken During Post-Development Construction Within the Wetland Preserve

After the SPA has been built out, occasional construction may take place along the boundary of the Wetland Preserve (e.g., on-going Aerojet activities such as well monitoring, closing wells, relocating wells, outfall replacement/repair, and trail maintenance). Past experience has shown that biological resources in urban preserves are vulnerable to disturbance during construction. In general, the minimum necessary construction area will be used (if within the Wetland Preserve). Construction limits will be set that do not encroach on any preserved wetlands or cultural resources. To avoid impacts to the Wetland Preserve and the protected resources, the following protective measures will be taken during project construction.

11.1.1 Pre-Construction Meetings

Pre-construction meetings for construction occurring adjacent to or in the Wetland Preserve area will address the presence of the Wetland Preserve, the sensitive habitats and resources present and minimization of disturbance to the Wetland Preserve. The Preserve Owner/Manager can also conduct a post-construction inspection to determine if those conducting the construction need to do any post-construction remediation. The developer or party conducted allowed construction activities within the Wetland Preserve will be responsible for conducting the pre-construction monitoring and if necessary retaining a construction monitor.

11.1.2 Temporary Construction Fencing

After the SPA projects have been built out, occasional construction may take place in the Wetland Preserve (e.g., on-going Aerojet activities such as well monitoring, closing wells, relocation of wells, and outfall maintenance/repair). Prior to construction activities, high visibility temporary construction fencing will be installed to limit construction to the immediate area where construction is planned. All preserved wetlands, elderberry shrubs, and cultural resources, will be pin-flagged, to avoid impacts not authorized by a permit. In all cases, this

fencing will be maintained daily until permanent fencing is installed, prior to the completion of construction of each portion of the project.

11.1.3 Storm Water Pollution Prevention

Storm water best management practices (BMPs) help reduce the potential for pollutant discharges into the Wetland Preserve and are required by the State Water Resources Control Board for any project over one acre in size or smaller projects that are part of a larger project. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and implemented to control sediment and erosion during construction. This includes preventing runoff from dust control and dewatering. 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 Wetland Preserve. For all construction related activities in and adjacent to the Wetland Preserve, perimeter BMPs shall be installed (i.e., straw wattle, silt fencing, etc.) and maintained as a minimum sediment control measure at all times (year round).

11.1.4 Use of Native Grasses in Post Construction Revegetation

When construction work disturbs soil within the Wetland Preserve area, all seed used to revegetate must be native to California, preferably ecotypes from Sacramento or surrounding counties. Attachment G provides guidelines for seed mixes for different revegetation situations, but the project engineer will ultimately need to approve the seed mix to ensure that the seed mix will result in revegetation that meets required performance standards. Attachment G also provides contact information for local native grass seed companies.

11.1.5 Trash Removal and Post Construction Clean-Up

During construction, paper trash, food wrappers, and other trash often blow into preserve areas from adjacent construction sites. The developer or construction manager will remove trash blown into the Wetland Preserve area from adjacent construction on a daily basis. After construction is complete and the temporary construction fencing has been replaced by permanent fencing (if applicable), temporary fencing and posts will be removed from the Wetland Preserve area. Additionally, when disturbed areas adjacent to or within the Wetland Preserve area 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 Wetland Preserve area.

11.2 Protective Measures to be Taken During Post-Development Construction Within the Passive Open Space

After the Project has been built out, occasional construction may take place in the Passive Open Space (e.g., on-going Aerojet activities such as well monitoring, closing wells, relocation of wells, replace or repair outfall, bike trail maintenance, water quality basin maintenance). Past experience has shown that biological resources in urban open space areas are vulnerable to disturbance during construction. In general, construction shall be limited to the Passive Open Space, if encroachment into the Wetland Preserve areas is required, the City will work with the Monitoring Biologist to determine appropriate steps. Construction limits will be set that do not encroach on any preserved wetlands or cultural resources. To avoid impacts to the Passive

Open Space and the wildlife habitats, the following protective measures will be taken during project construction.

11.2.1 Pre-Construction Meetings

Pre-construction meetings for construction occurring adjacent to or in the Passive Open Space will address the presence of the wildlife habitats as well as the adjacent Wetland Preserve, the sensitive habitats and resources present and minimization of disturbance to the Wetland Preserve area. If areas encroach into the Wetland Preserve area, the Preserve Manager can also conduct a post-construction inspection to determine if those conducting the construction need to do any post-construction remediation.

11.2.2 Temporary Construction Fencing

Prior to construction activities, high visibility temporary construction fencing will be installed to limit construction to the immediate area where construction is planned. This fencing will reduce the potential for disturbance of the habitats. Any resources warranting special protection will be pin flagged to avoid impacts not authorized by a permit. In all cases, this fencing will be maintained daily until completion of construction.

11.2.3 Storm Water Pollution Prevention

Storm water best management practices (BMPs) help reduce the potential for pollutant discharges into the SPA Open Space and are required by the State Water Resources Control Board for any project over one acre in size or smaller projects that are part of a larger project. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and implemented to control sediment and erosion during construction. This includes preventing runoff from dust control and dewatering. 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 Wetland Preserve. For all construction related activities in and adjacent to the Wetland Preserve, perimeter BMPs shall be installed (i.e., straw wattle, silt fencing, etc.) and maintained as a minimum sediment control measure at all times (year round).

11.2.4 Use of Native Grasses in Post Construction Revegetation

When construction work disturbs soil within the Passive Open Space, all seed used to revegetate must be native to California, preferably ecotypes from Sacramento or surrounding counties. Attachment G provides guidelines for seed mixes for different revegetation situations, but the project engineer will ultimately need to approve the seed mix to ensure that the seed mix will result in revegetation that meets required performance standards. Attachment G also provides contact information for local native grass seed companies.

11.2.5 Trash Removal and Post Construction Clean-Up

During construction, paper trash, food wrappers, and other trash often blow into preserve areas from adjacent construction sites. The City will remove trash blown into the Passive Open Space from adjacent construction on a daily basis. After construction is complete and the temporary construction fencing has been replaced by permanent fencing (if applicable), temporary fencing

and posts will be removed from the Passive Open Space. Additionally, when disturbed areas adjacent to or within the Passive Open Space 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 Passive Open Space.

11.3 Fencing, Signage, and Bollards

11.3.1 Fencing

11.3.1.1 Temporary Construction Fencing

See Sections 2.1.5 and 11.1.2 for information on temporary fencing required during construction.

11.3.1.2 Initial Installation of Fencing and Fencing Types

The initial installation of fencing in the SPA Open Space is the responsibility of the developer who's property that portion of the SPA occurs in. Permanent fencing for the SPA Open Space as the project builds out as part of the adjacent development. Existing fencing will be assessed for integrity and will be repaired as needed. The type of fencing will vary according to the adjacent parcel land use (roadway, residential, business, etc.); however, in all cases, fencing has been designed to prevent vehicle access and allow unrestricted visual access into the SPA Open Space (see Attachment A). The approved fencing types are wood, chain link, barbed wire, post and cable, masonry sound wall, and wrought iron (tubular steel) with or without knee wall. If a land use change adjacent to the SPA Open Space dictates a change in the type of fencing between those listed above that is allowed. For approximate locations of permanent fencing see Attachment A.

11.3.1.3 Maintenance and Repair

Maintenance and replacement of fencing and signage must be restricted to the minimum area needed to fix the fencing. Whenever possible, maintenance and replacement of fencing should take place from outside the Wetland Preserve area. The different fencing treatments, maintenance responsibility, and funding sources for the fencing are addressed below.

Roadway and Bike Trail Fencing

Along roadways and portions of the trails, fencing will be post and cable or natural barriers. Several areas of trails are adjacent to thickets of blackberry or other dense vegetation or adjacent to steep hills that will serve as natural barriers to trespass. The Preserve Owner/Manager will be responsible for the maintenance and replacement of fencing along roadways and bike trails.

Residential Fencing

The maintenance and replacement of fencing, where the SPA Open Space is adjacent to private property within the development project, is the responsibility of the adjacent property owner(s)

or Homeowner's Association (HOA). The homeowner's, the City, or the HOA will be responsible for enforcing the fencing requirements in the CC&R's.

Adjacent Open Space Fencing

If other projects outside of the SPA are developed adjacent to any of the SPA Open Space parcels, and the open space of that project is adjacent to the SPA Open Space, with the approval of the Preserve Owner/Manager, the fencing between the two can be taken down if it is desired or practical. The removal of common fencing could allow for wildlife passage or joint management.

Additional Fencing Requirements

Fencing may also be installed along the boundary of each phase. As with other areas of the SPA Open Space, fencing will utilize natural barriers where feasible and installation of fencing such as chain link, post-and-cable, or wrought iron can be used in areas where no natural barriers exist. This fencing can be removed once the next phase of construction begins.

11.3.1.4 Covenants, Conditions, and Restrictions Required

Each development within the SPA will have Covenants, Conditions and Restrictions (CC&Rs) will make the owner aware of the SPA Open Space adjacent to the property. They will be informed that this is protected property and that they are required to maintain their fencing in good repair. The CC&Rs will also have descriptions and diagrams of fencing types present along their SPA Open Space, and specifications for such fencing.

11.3.2 Preserve and Interpretive Signs

Wetland Preserve area signage will be installed to inform the public of the presence of the Wetland Preserve area. Sample sign language has been included as Attachment O. Approximate sign locations are shown in Attachment A. If the Preserve Owner/Manager feels that additional signage is warranted then more may be installed. In addition to the smaller signs posted along Wetland Preserve boundaries, interpretive signs may be installed along the Passive Recreation corridor. The content of the signs will educate the public about Valley foothill riparian and oak woodland habitats, their conservation, common species observed, and would encourage respect for the SPA Open Space. The signs will be placed along the bike trail or adjacent to areas of significant historical/ecological value. Exact locations should be determined in the field after construction to ensure the best view of the SPA Open Space's habitats in conjunction with each sign. The developer is responsible for the initial cost of installing Wetland Preserve signage and interpretive signage. Preserve Owner/Manager will be responsible for the maintenance and replacement of the signage.

11.3.3 Bollards and Gates

The City will be responsible for the maintenance of authorized gates into the SPA Open Space and for keeping them locked to prevent unauthorized motor vehicle access. All other gates, such as gates installed by residents or other entities allowing access into the SPA Open Space are prohibited. The City, in conjunction with the Homeowners Association, will be responsible

for notifying any party that has installed an unauthorized gate into the SPA Open Space and require its removal and replacement with the appropriate fencing. Bollards will be placed at each point where a bike trail enters the SPA Open Space (see Attachment A). The City will be responsible for the maintenance and replacement of the bollards and for keeping them in the upright position when maintenance vehicles are not accessing the SPA Open Space.

11.4 Water Quality Basins

Several water quality facilities will be constructed within the SPA Open Space. Storm drains will be directed to these facilities to allow for sediments to be settled prior to water being discharged into the creek or intermittent drainages within the Wetland Preserve. Depending on the size of the storm event, water will be detained for 6 to 8 hours. Locations of the water quality basins are shown in Attachment A.

11.5 Trail System

As depicted on the SPA Open Space detail map (see Attachment A) a paved bike trail and unpaved walking trails will meander through the Passive Recreation portion of the SPA Open Space. Although the trails exist within the Passive Open Space, care should be taken so that maintenance activities of the trails do not encroach upon the Wetland Preserve area. The maintenance described below is provided as a guideline for activities that are expected to occur within the Passive Recreation trail system.

The bike trail alignment shown in the detail maps is the expected route, but may vary in areas upon further land planning. In areas where the bike trail crosses drainages, bridges will span the drainages to avoid impacting wetlands/waters.

To the extent possible natural barriers such as topography or vegetation will be utilized to detour off-trail access; however, there are several locations where fencing will be utilized to protect biological or cultural resources. The extent of the fencing required is depicted in Attachment A. If during construction the Preserve Owner/Manager feels that additional fencing is warranted in order to protect the adjacent preserved habitat or cultural resource, more fencing may be added. Installation of additional fencing will be the responsibility of the developer. Bollards will be placed at each location where the bike trail enters the SPA Open Space. Routine maintenance activities including repainting stripes, fixing cracks, and mowing on either side of the bike trail are allowed. Use of herbicides to maintain the 3-foot bike trail shoulder is allowed. Monitoring of the installation of post and cable shall be carried out in accordance with Stipulation 4 of the MOA.

11.6 Outfalls and Drainage Swales

Run-off from developed areas within the SPA must reach the creeks or drainages within the SPA Open Space. Past experience has shown that ill-designed or inappropriately placed outfalls can permanently and adversely impact the hydrology of preserved wetland features. This was taken into consideration during outfall design. The outfalls and their approximate locations are shown in Attachment A.

11.7 Firebreaks

The Sacramento County Fire Department has required a 30-foot firebreak to occur adjacent to commercial and residential lots. Firebreaks may be mowed (not disked) such that vegetation is 2 inches high or less. The 30-foot firebreak is located within the Passive Open Space that is immediately adjacent to residential lots and roadways (see Attachment A). The City will be responsible for implementing the mowed firebreak as well as arranging for a ground nesting bird survey to be conducted each year prior to the mowing of firebreaks.

11.8 Bridge Crossings and Detention Culverts

To keep water flowing at the various bridge crossings, vegetation and large woody debris can be cleared from within these structures within the SPA Open Space in accordance with a MOU between the City and/or Sacramento County and CDFG. The City and/or Sacramento County will be responsible for clearing vegetation from these structures.

11.9 Utilities

As depicted in Attachment A, there are several areas of the SPA Open Space that are or will be crossed by utility lines. Access to the Wetland Preserve areas for the installation, maintenance, and replacement of existing and proposed utility lines and poles is allowed and will be restricted to the minimum area needed to accomplish the task. Installation of utilities across protected cultural resources loci and features must be carried out in accordance with the MOA and will require review and approval by the USACE. The USACE, at its discretion, may seek concurrence from California SHPO.

11.10 Rail Road Tracks

11.11 Aerojet Remediation Activities

Entry in the Preserve areas by Aerojet Remediation staff is required for Regulatory Agency Response Action Requirements. Activities in the Preserve areas may include but are not limited to the construction, operation, maintenance and repair of facilities required for the response activities as well as monitoring and sampling associated with the remediation. Remediation staff should attempt to limit construction activities to the minimum area required. If construction activities will impact protected resources, including cultural resources, then the Aerojet Remediation staff will be responsible for obtaining the appropriate permits and/or authorizations. Certain remediation activities may require staff to occasionally ford the creek to access isolated monitoring wells on the north side of Alder Creek. It is expected that creek crossing will mostly occur during low flow periods, unless an emergency situation occurs. Crossings points will coincide with pre-development access points.

12.0 REMEDIATION/RESTORATION ACTIVITIES

12.1 Post-Construction Remediation/Restoration

The replacement of the previously mentioned structures or improvements in the Wetland Preserve may require post-construction restoration. These structures or improvements were originally permitted as part of the project through the USACE, the USFWS, and CDFG. For these cases, post-construction remediation/restoration means, for example, hydroseeding areas of the Wetland Preserve that were disturbed by equipment, restoring the original grade where the intent was not to alter it, cleaning up construction debris, 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 Attachment P.

12.2 Restoration of Declaration of restrictions Violations/Vandalism

It is difficult to anticipate and provide a mitigation measure for all potential violations of the Wetland Preserve's declaration of restrictions, however, the following table outlines some potential violations and mitigation guidelines. If a particular situation is not listed here, that does not mean that restoration is not required. In these cases, determining an appropriate mitigation measure will be at the discretion of the Preserve Owner/Manager in coordination with the Monitoring Biologist.

Type of Disturbance	Mitigation Guideline
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 (Attachment G) and implementing the proper erosion control measures until the bare ground becomes vegetated again.
Removal of Native Tree or Shrub Habitat	Restoration for the removal native trees or shrubs should 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. Monitoring of the replacement plants should be done for at least two seasons.
Waters of the U.S., including wetlands	Restoration for fill/loss of waters of the U.S. should result in the removal of fill from the feature, potentially the minor re-grading and revegetation of the feature (if appropriate) and monitoring for at least two seasons to gauge the feature's recovery. The Preserve Owner/Manager will contact the USACE if fill/loss of waters of the U.S., including wetlands, has occurred and submit for review and approval what remediation/restoration is proposed (see Section 6.3). While the normal time period for the USACE to review and approve an action is 60 days, the USACE will make every effort to respond in a timely manner to requests regarding waters of the U.S., including wetlands, so that restoration can be implemented at the appropriate time of year (e.g., before the rainy season).

Type of Disturbance	Mitigation Guideline
Sedimentation in Vernal Pools	If sedimentation within a vernal pool occurs, the Preserve Manager will notify the USACE and the USFWS. The Preserve Owner/Manager will wait until summer when the vernal pool is dry. The Monitoring Biologist will make an assessment of the vernal pool at that time to determine if remediation (i.e., removal of the sediment) is warranted, or if the pool is recovering sufficiently on its own. Indicators of recovery include the re-establishment of vernal pool plant species and recovery of the pool's vegetative cover. If the first year of monitoring indicates that no remediation will be needed, one more year of monitoring will be conducted. Monitoring will consist of one winter visit and one summer visit to assess the overall health of the vernal pool. If the first year of monitoring/first summer assessment indicates that removal of the sediment is warranted, it will be conducted during the summer months when the pool is completely dry. The sediment will be removed by hand shovel. Care will be taken to remove only the sediment and not disturb the original grade of the vernal pool. Two years of monitoring after the remediation has taken place are required. The USACE or USFWS may also require mitigation in the form of mitigation bank credits if after two years the remediated pool is not showing progress toward recovery.
Impacts to Elderberry shrubs	Restoration for impacts to elderberry shrubs should include planting of compensation plantings. The Preserve Owner/Manager should contact USFWS to determine the appropriate mitigation for impacts to elderberry shrubs.
Fencing	Restoration for the destruction or modification (e.g., installing an unauthorized gate) of SPA Open Space fencing should include fixing or replacing the section of fencing to its original specifications as enforced by CC&Rs.
Structures, Landscaping, Other Improvements, etc.	Any unauthorized structure, landscaping, or other improvement should be removed from the SPA Open Space. If any of the above habitats was disturbed, mitigation will be required using the above mitigation measures as guidelines.

12.3 Timing/Process for Corrective Actions

Minor corrective measures not requiring notification or approval of the USACE and/or the USFWS (e.g., prevention of unexpected runoff, prevention of unauthorized access to the area by placing locks on gates, etc.) will be carried out by the Preserve Owner/Manager within sixty (60) days, unless site conditions warrant delay (i.e., if soil is saturated and equipment would damage the upland habitat in the Wetland Preserve, it may be necessary to delay work until conditions improve). All other corrective actions will take place when conditions are best suited for restoration to occur, and after the USACE and/or the USFWS have been notified or the Preserve Owner/Manager has received approval.

13.0 RECREATION, EDUCATION, AND RESTORATION

13.1 Educational Activities in the Wetland Preserve

The Wetland Preserve represents an opportunity to encourage a sense of ownership and respect for open space and wildlife habitat in local students. Use of the Wetland Preserve for education will be limited to students, parents, and faculty of the local school district, local area residents, or other persons with the consent of the Preserve Owner/Manager. Individuals or groups using the Wetland Preserve for educational purposes will coordinate their use with the Preserve Owner/Manager. If the educational activities will be passive in nature, such as an occasional walk through the Wetland Preserve to discuss plants and animals of the wetland habitats, then the consent of the Preserve Owner/Manager is sufficient. If active use (other than restoration activities) of the Wetland Preserve is proposed, or regular, but passive use of the Wetland Preserve is proposed, review and approval of the USACE and the USFWS is required. To avoid repeated inquiries with the USACE and the USFWS, a use plan could be developed by the interested school or school district for a one-time approval. See Section 13.4, below, for review and notification information on restoration activities.

13.2 Recreation

There is no recreation planned to occur within the Wetland Preserve. All recreation activities are limited to Passive Open Space of the SPA Open Space.

13.3 Community Clean-up Days

Often, communities have open space or creek clean-up days. Teams of residents “adopt” an open space area and pick up trash. Individuals or groups participating in a clean-up event will coordinate their use of the Wetland Preserve with the Preserve Owner/Manager. More extensive use of the Wetland Preserve by community groups, such as restoration or educational activities may require notification of the USACE and the USFWS.

13.4 Future Habitat Restoration/Enhancement

In the future, the Preserve Owner/Manager or other group/organization may want to conduct habitat restoration or enhancement within the Wetland Preserve. This could include the removal of non-native (invasive) plant species, planting native plants, or other restoration activities. A list of native plants that can be used in restoration has been included as Attachment P. This list is not all-inclusive; other locally native plants can be used in restoration. Restoration activities that involve work in waters of the U.S., including wetlands, may require a permit under Section 404 of the Clean Water Act, and/or a Streambed Alteration Agreement from CDFG. Nationwide Permit (NWP) 27, *Stream and Wetland Restoration Activities*, is available from the USACE for these type of activities. An example of a restoration activity that does not require USACE approval, is planting acorns or oak seedlings in the Open Space Preserve. An example of a restoration activity that would require USACE approval is the recontouring of a creek bank and planting it with riparian species to stabilize an area of erosion. The Preserve Owner/Manager will not need to notify the USACE if restoration activities do not require a permit from the USACE, however, these activities should reviewed by the Monitoring Biologist and will be described in the Annual Report. If there is a question regarding whether a

restoration activity will require USACE approval, the Preserve Owner/Manager should seek guidance from the USACE.

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LIST OF FIGURES

Figure 1. SPA Open Space Site and Vicinity

Figure 2. Natural Resources Conservation Service Soil Types

Figure 3. Plant Communities