APPENDICES

Appendix A – River West-Madera Resource Assessment

River West-Madera Master Plan

June 5, 2012

Resource Assessment

The River West-Madera area consists of 795 acres of publicly owned land located in Madera County along the northern side of the San Joaquin River between Highway 41 and Scout Island. The Resource Assessment presents the area's existing characteristics, as well as constraints and opportunities to future planning efforts.

River West-Madera Master Plan

RESOURCE ASSESSMENT

FIGURES

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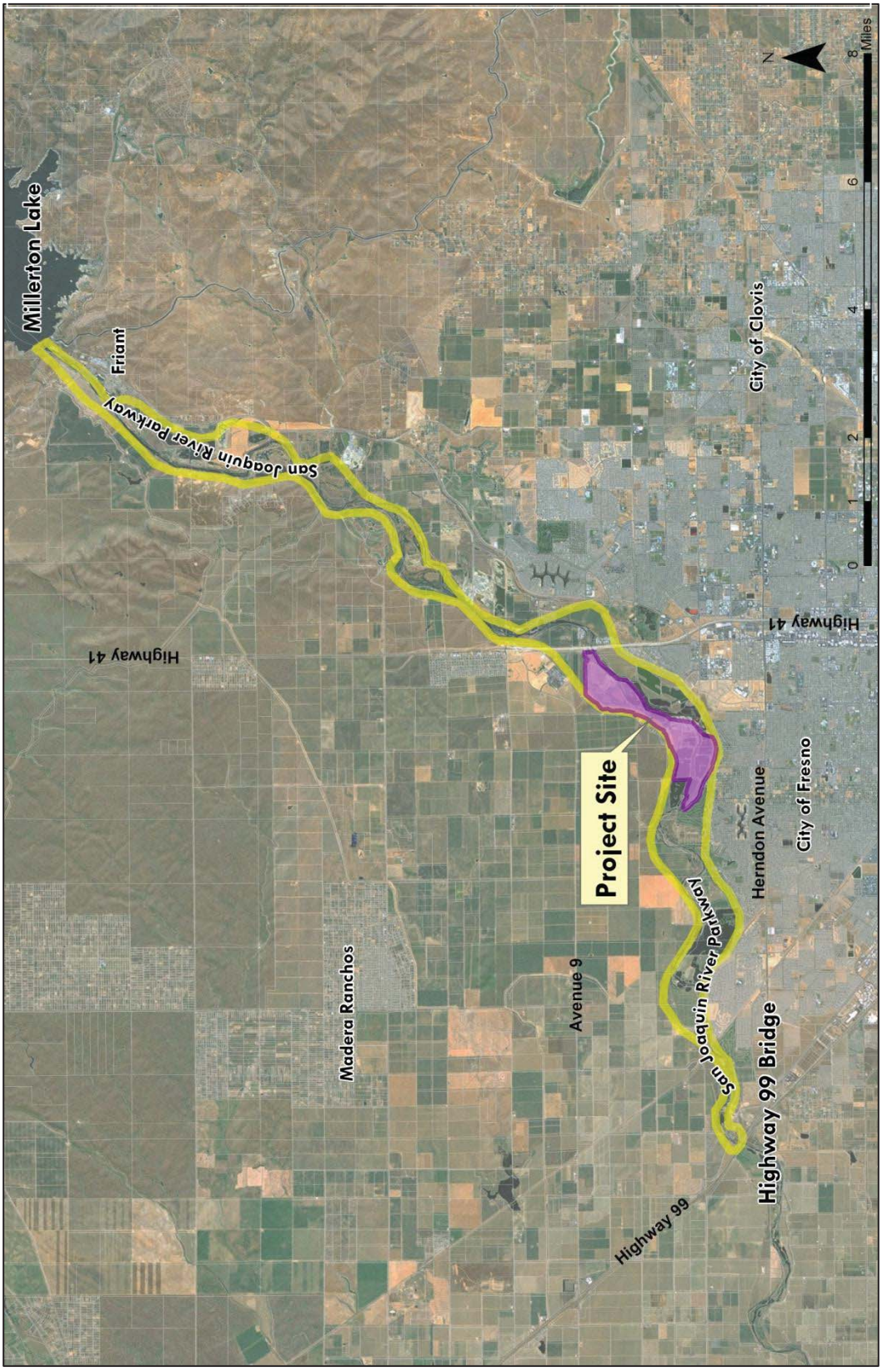
EXISTING CHARACTERISITICS

Introduction

The River West-Madera Resource Assessment document provides insight into the existing characteristics of Sycamore Island and the Van Buren Unit and presents opportunities and constraints related to the site's conditions. The opportunities and constraints inform the design of the Master Plan, based from analysis of site conditions, agency input, and public input. Potential approaches to the design of the Master Plan are categorized into four main categories, including the following:

- Natural Environment (biological resources, habitat)
- Access (access to the site and viewpoints of the site)
- Recreation (circulation within the site and recreational opportunities)
- Education (environmental interpretation)

FIGURE 1: SAN JOAQUIN RIVER PARKWAY AND RIVER WEST-MADERA



Land Use and History

Currently, ten separate parcels are located within the project area, all of which were acquired by the State of California from 2002 through 2005 after the cessation of mining activity onsite. The project area is currently designated as Agricultural Exclusive in the 1995 Madera County General Plan, a designation reflecting the agricultural activity prior to mining that began in the 1960s. The primary use of the project area today is wildlife habitat and recreation.

Cultural History

In contrast to the numerous archaeological excavations in the south-central Sierra Nevada and adjacent foothills, there has been little archaeological work done in the central San Joaquin Valley generally or in the project vicinity specifically. Archaeological evidence suggests that the valley's initial occupants settled mostly in lakeshore and streamside environments and used the foothills seasonally. Several archaeological sites have been recorded in the immediate site vicinity. In addition to sites located along the San Joaquin River, many small processing stations and temporary camps have been found along seasonal channels near the lower foothills suggesting a pattern of widespread use of this area during the late Holocene. The San Joaquin River supplied an abundance of salmon during the fall and spring and the numerous granite outcroppings along the river and smaller tributaries provided grinding surfaces to process acorns, a staple of the California Indian diet.

The Yokuts tribes occupied virtually all of the San Joaquin Valley and the surrounding foothills. Within the project vicinity, the Yokuts tribes identified by Latta whose spheres of influence extended into the current study area were the *Dumna* and *Hoyima* Yokuts. Some sources place the *Hoyima, Hoyim'a* or *Hoyimha* (plural *Hoyeyami*) on the north side of the San Joaquin River opposite the *Pitkachi*. The *Hoyima* may have ranged as far north as the Fresno River. *Hoyima* settlements were at *K'eliutanau*, on "a creek entering the San Joaquin from the north, and at *Moyoliu* above the mouth of Little Dry Creek". The *Dumna*, a subgroup of the Foothill Yokuts, was located around present day Millerton Lake.

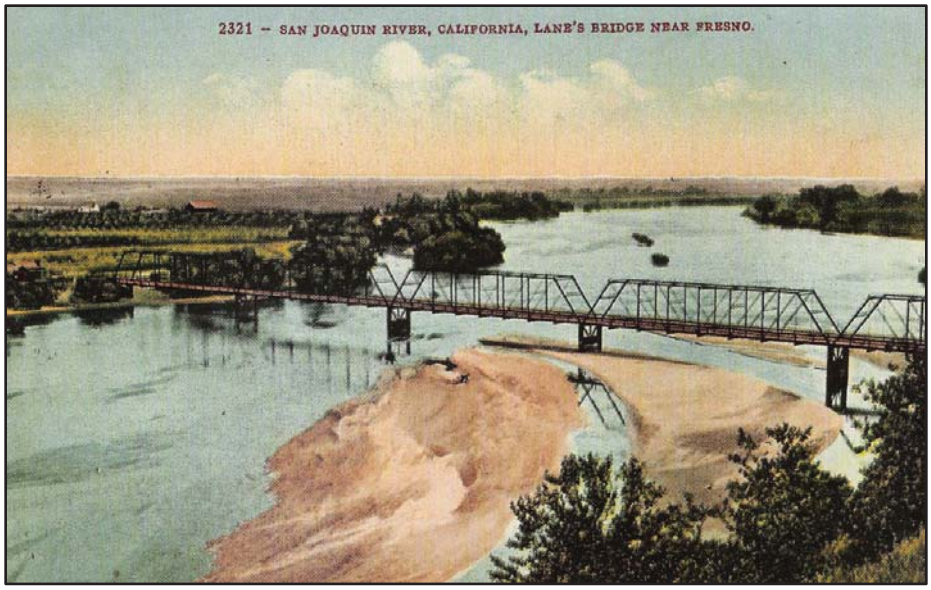


FIGURE 2: HISTORIC LANES BRIDGE.
SOURCE: SYCAMOREISLANDPARK.COM

Western influence upon the San Joaquin River began in the late 19th Century as the lower stretches of the river were dredged to ensure navigability. Steamboats and other boats were used for transportation up the river from Stockton and

the Delta to as far north as the vicinity of the project area. Following the First World War, the portion of the river north of Fresno, including the project area, saw increasing recreation. Forms of recreation in the vicinity of the project area included fishing, boating, and swimming. One man's quote exemplifies the recreational aspect of the historic salmon runs on the River: —Up and down the river, the salmon fishing was popular. The people would turn out for the salmon runs. They would go up and camp by the river, and would picnic and fish. A trolley line extended north from Fresno to provide access to what used to be Fresno Beach, which was located in the vicinity of the project area. Figure 2 shows the historic Lane's Bridge, which once spanned the river near where the existing Highway 41 bridge exists today.

FIGURE 3: RECREATIONAL BOATING IN THE VICINITY OF THE PROJECT AREA.
SOURCE: SYCAMOREISLANDPARK.COM

The construction of the Friant Dam in the late 1930s changed the river dramatically. The historic salmon runs documented on the river eventually ceased to exist. The majority of the river flow was redirected into irrigation canals, including the Friant-Kern Canal and the Madera Canal. The river flows today are but a fraction of the historic flows.

Sycamore Island

The modern history of Sycamore Island dates from 1950, when James and Carrie Moen moved from Berkeley to manage her family's working ranch. It was located at a point roughly two miles southwest of the San Joaquin River—Highway 41 intersection, in Madera County, where the river separated into major and minor channels.

This formation, along with a large number of sycamore trees on the property, led to its being named "Sycamore Island Ranch" in 1952. At different times, it is said to have been home to a cattle herd, a watermelon patch, fish hatcheries, and a blue crawdad farm. Despite these commercial presences, Sycamore Island was also well-known for its wildlife. Reports note that fauna ranged "from ducks and egrets to deer and raccoons," and cohabited with the Moens and their various business ventures.

In February 1963, a rock and gravel plant was created on a large segment of the property. The Moens leased 358 acres to Stewart and Nuss, Inc., of Fresno, for this purpose. Concurrently, for the same purpose, the firm leased 158 acres on the Fresno County side of the San Joaquin from local

land developer Oscar Spano. According to Mr. Moen, work on the rock and gravel plant actually commenced in 1960.

Controversy surrounded the move to extract sand and gravel at Sycamore Island, as both neighborhood residents and the California Department of Fish and Game contested Fresno County's issuance of a conditional use permit for the operation. While various restrictions were imposed on plant hours, excavation areas and waste/dust abatement, it was requested that a fifteen-foot strip alongside the river be preserved to retain natural vegetation and some of the wildlife habitat.

While the initial habitat loss was unfortunate, it developed that the gravel pits had some offsetting beneficial effect on local wildlife. River water would naturally drain or seep into the gravel pits, creating more than a half-dozen ponds which became stocked with various fish types, including catfish, carp, stripers, crappie, and largemouth bass. The ponds also provided a convenient stop for local and migrating waterfowl.

This teeming quasi-preserve encouraged the Moens to open up the property for camping and fishing enthusiasts, bringing as many as 100 cars every weekend. Eventually, it was sheltered by more than 400 trees, where as many as 160 different bird species could be sighted, and canoeing and kayaking became popular in the adjoining waterway.

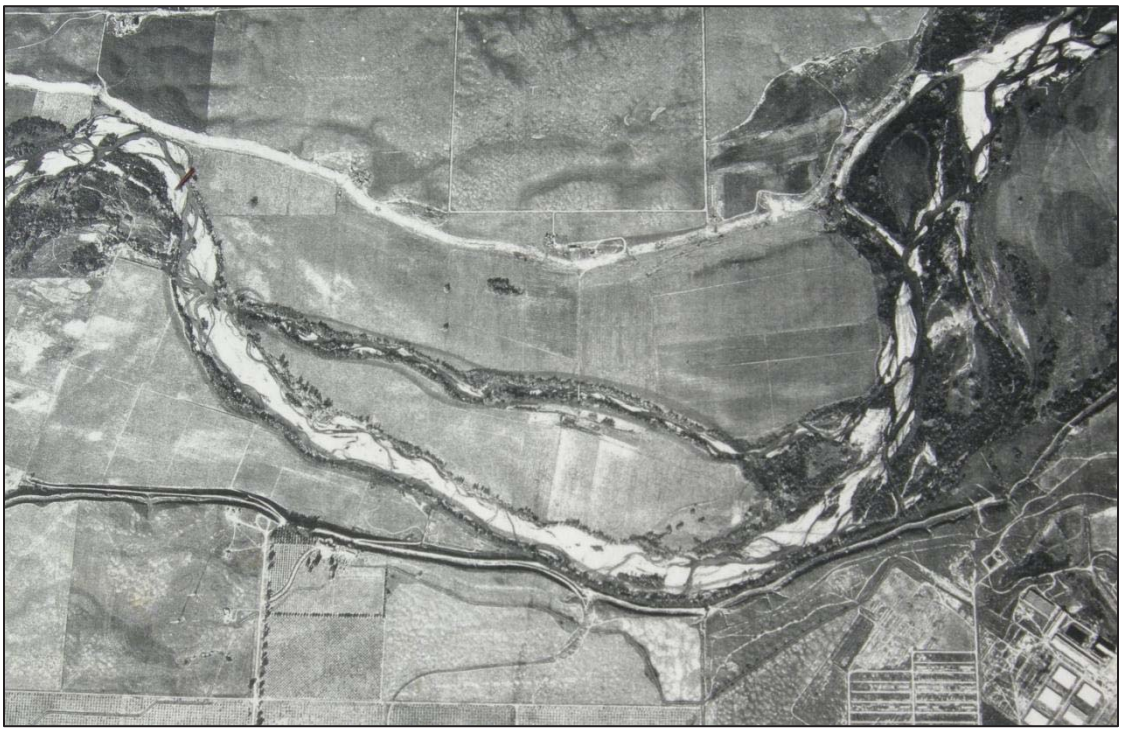


FIGURE 4: AERIAL PHOTO OF SYCAMORE ISLAND, JANUARY 1950.
SOURCE: SYCAMORE ISLAND PARK

Stewart and Nuss continued operations on Sycamore Island with little fanfare. In 1988, to meet new environmental regulations, it installed a closed-gravel-washing system to keep silt from building up in the river. Also, to comply with the California Mining and Reclamation Act of 1975, the company was further obligated to reestablish the island's foliage, including planting seven trees per acre in areas

where excavations were complete. By the late 1990s, the Sycamore Island gravel plant was playing out and winding down operations. John C. Buada, a Stewart and Nuss representative, said at the time: "Ninety-five percent of all sand and gravel in this area has been excavated from the San Joaquin. That's all of Fresno, Mendota, Clovis, Madera, all the concrete, asphalt, every foundation, every home and all the concrete commercial buildings, driveways and schools."

Calaveras Materials, successor to Stewart and Nuss, completed mining in 2005. The reclamation plan was intended to restore the site for wildlife habitat and recreation. Madera County approved final reclamation in 2009.

With the departure of the Moens' two children, neither of whom were interested in ranching or other ventures, and the return of Sycamore Island to non-commercial purposes, the family elected to sell the property. In November 2006, it was purchased by the San Joaquin River Conservancy for $6.6 million. The acquisition was intended to help preserve and restore the San Joaquin River's natural resources and promote the recreational use of the site as planned through the mining operation's reclamation plan and Parkway Master Plan. Sycamore Island joined a series of properties set aside for those purposes, together eventually forming a twenty two-mile-long Parkway on the San Joaquin River from Friant Dam to Highway 99.

At present, the property is opened for public fishing and river access by the Conservancy and its concessionaire, Falcontail Enterprises. The concessionaire operates a bait shop, maintains the property and associated facilities, collects day use fees, and pays a portion of the fees to the Conservancy.

Sycamore Island is bisected by a side channel of the San Joaquin River, designated herein "the North Channel." The demolition of a culvert bridge across the main channel of the river in 2005 during gravel plant reclamation caused the North Channel to go dry in all but higher flows; hence Sycamore Island is only an island during wet years. One of the main river channels, along the ranch's southern border, retains its past contours and appearance.

Van Buren Unit

East of Sycamore Island Park is 300-acres that were owned by the Cobb family for several generations (other partners owned the area for shorter periods of time). The area is now owned by the San Joaquin River Conservancy. Unlike the Moen family that purchased their property in 1948, the Cobb family, led by Van Buren Cobb and his wife Minerva, came to California from Indiana in 1868 where they purchased property along the San Joaquin River. For purposes of this report the site was given the name Van Buren, the first member of the Cobb family to settle the site, as a historical reference of the area. This historical name complies with the San Joaquin River Conservancy's place naming guidelines (it is important to note that the Conservancy Board has yet to formally approve the name used in this report). Charles H. Cobb, born in 1869, remained on the farm until 1900 when he moved to Fresno with his brother, A.J. Cobb, to establish a livery stable business. Although he engaged in several other business ventures in Fresno, Charles H. Cobb continued to work the family farm on the San Joaquin River. In 1926, Mr. Cobb was urged to run for a vacant seat in the California legislature. Mr. Cobb won the election easily and in 1927, took his seat in the California State Senate.

The Van Buren Unit was later owned by Lawrence S. Cobb, the son of Senator Cobb. The Cobb family continued to farm their property along the San Joaquin River into the 1950s, when it appears the Cobb family leased out 300-acres of land to a mining company for sand and gravel extraction.

According to one source, sand and gravel extraction commenced in 1955 by a gentleman named Moore, whose operation continued through 1959. From 1959 through 1961, the Griffith Company took over the operation and used the material primarily for the construction of the Lemoore Naval Air Base. Industrial Asphalt operated the plant at this location from 1961 through 1965, and then in 1965 the company Volpa-Jerkovich took control of the sand and gravel operation until 1975.

Over the next twenty-eight years, companies operating the sand and gravel operation included: 1) Madera Rock & Asphalt (1975-1979); 2) Madera Rock & Asphalt Supply (1980-1981); 3) and San Joaquin Sand & Gravel (1982-2003) (Buada, Personal Communication 2011). According to recent satellite photography, sand and gravel operations on this property ceased around May 2004. The same imagery indicates that the buildings associated with the operation were removed by the gravel company by June 2004. The mining operation's reclamation plan focused on the creation of wildlife lakes and riparian islands. Madera County approved final reclamation of the property in 2010.

In 2003 the San Joaquin River Conservancy acquired the property for $4.9 million. The purpose of the acquisition was to preserve and protect wildlife habitat and natural resources, and to implement public access and recreation consistent with the Parkway Master Plan.

Surrounding Properties and Planned Development

The San Joaquin River channel represents the southern boundary of the project area. The Fresno County line generally follows the river channel. Across the river channel near Highway 41 are located fields utilized for grazing and a small home site. Gravel mining operations also occurred on the Fresno County side of the river, where several ponds exist. The Fig Garden Country Club and residential subdivisions are located across the river to the southwest of the project area. City of Fresno development generally extends along the entire bluff south of the project area, overlooking the river bottom. The exception to residential development in the city of Fresno is commercial office development surrounding the Nees Avenue and Palm Avenue intersection southwest of Sycamore Island.

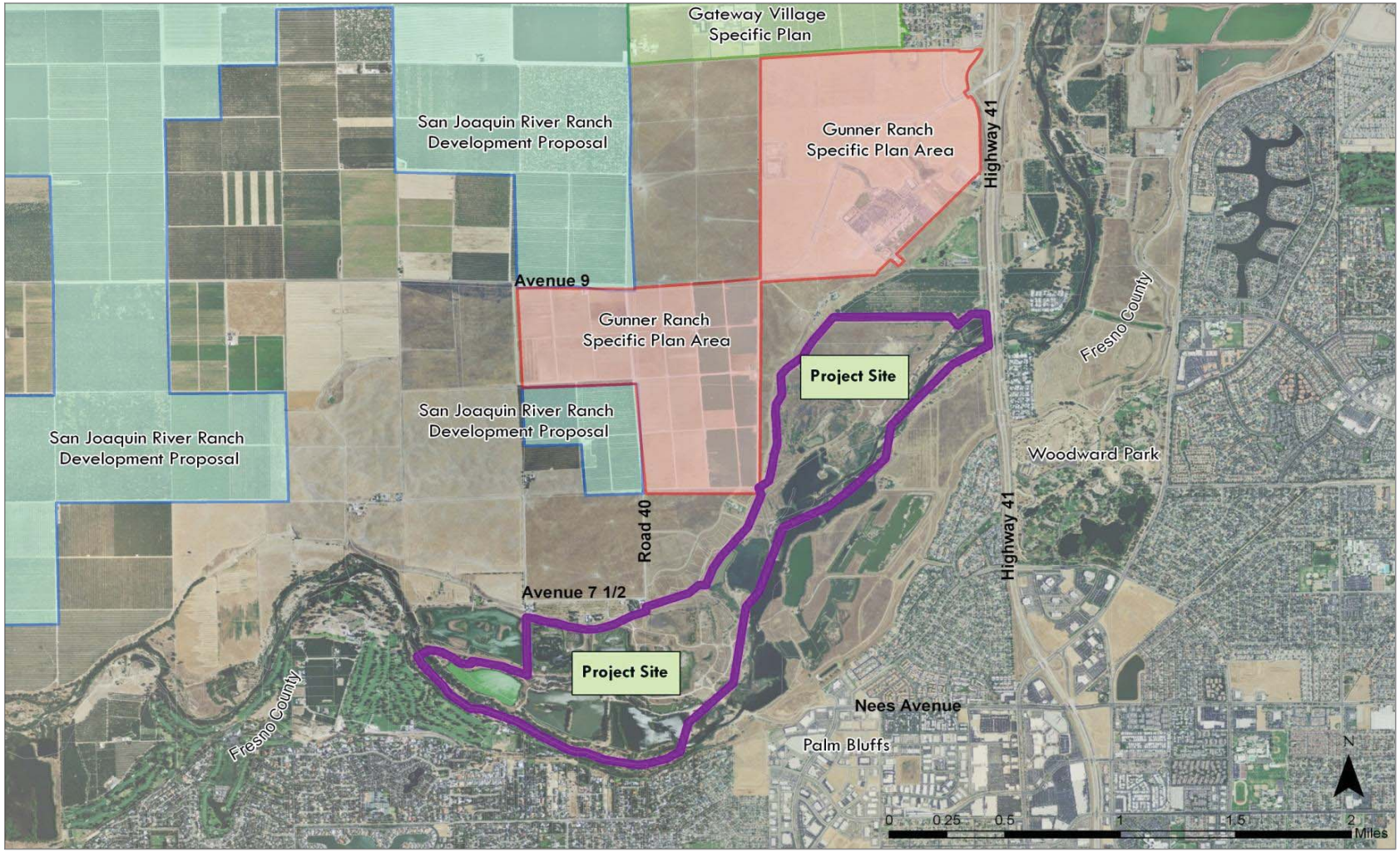
Scout Island, an environmental education property managed by the Fresno County Office of Education, is located immediately downriver (west) of the project area. Upriver (east) of the project area is Highway 41, a four lane freeway. The bluff north of the project area offers a drastically different perspective than from the Fresno County bluffs. Children's Hospital of Central California is located northeast of the project area and includes a large complex of three story buildings and other support facilities. Despite the presence of the Hospital on the bluff, only a scattering of single family homes exist located on grazing land. Below the Hospital on the river bottom is the River Park Golf Center, a par three golf course with a driving range. Between the Golf Center and the project area is bare agricultural land.

A number of developments are proposed adjacent to the project area in Madera County, many of which could dramatically change the area north of the project area. Surrounding Children's Hospital to the north and southwest is the Gunner Ranch Specific Plan, an area slated for mixed commercial and residential development. The proposal includes over 2,800 housing units and over 2 million square feet of mixed use commercial space. While located adjacent to the project area, only a southern corner of the Specific Plan area actually makes contact with the project boundary. The proposed Specific Plan's Trails Plan indicates a trail connection between that corner and River West-Madera.

This trail connection, if feasible, would provide important non-vehicular recreational access into River West-Madera for the general public and future residents.

Located north of Gunner West, Gateway Village was approved in 2007 for over 6,500 housing units. Extending from Avenue 10 to Avenue 12, Gateway Village will provide an additional population base in need of recreational access to River West-Madera. Further development was proposed in 2008 west of Gunner Ranch. Now named San Joaquin River Ranch, the proposal consists mainly of residential development and as of 2011, has yet to proceed through environmental review. At the time of application submittal, the proposal involved over 20,000 housing units spread across 3,795 acres.

FIGURE 5: PROPOSED DEVELOPMENT ADJACENT TO RIVER WEST-MADERA IN MADERA COUNTY



Circulation & Facilities

Existing Offsite Access

Access is provided to the River West area at two points, on the far eastern edge near Highway 41 and on the western side of the project area north of Sycamore Island. A private road easement provides road access from Rio Mesa Boulevard and Avenue 9. A "license to park" easement (between San Joaquin River Parkway & Conservation Trust, Inc. and Lawrence David Cobb II) allows for parking at the end of the private road easement for public parking and walk-in access.

FIGURE 6: THE ACCESS ROAD FROM RIO MESA BLVD. AND AVE. 9 ENDS AT A LOCKED GATE.

The property is not open for general public access. A locked gate keeps vehicles from entering the Van Buren Unit on a regular basis. However, vehicles have illegally driven onto the site via a small dirt road through the adjacent agricultural property.

A public access easement provides entry from Avenue 7 ½ to Sycamore Island Park. The access road and all internal roads are unpaved, single lane roads.

Potential Access Points

Currently, no access exists across the river to Fresno County. As recently as 2005 an earthen culvert bridge provided direct access to Sycamore Island from near the intersection of Palm Avenue and Nees Avenue in the City of Fresno for the past gravel mining operation at Sycamore Island. This bridge and another remnant bridge crossing in the vicinity were removed by Calaveras Materials during reclamation.

The San Joaquin River Parkway Master Plan identifies a conceptual trail crossing from Sycamore Island to the Fresno County side where gravel haul roads previously crossed the river channel. The trail identified in the San Joaquin River Parkway Master Plan for the project area is part of a continuous multiple use trail that is envisioned throughout the entire Parkway. As a result of a study of several potential river crossings, the San Joaquin River Parkway Conservation and Trust proposed a crossing adjacent to the easternmost pond within the Van Buren Unit. The study took into consideration potential impacts resulting from the San Joaquin River Restoration Plan as well as other factors in evaluating potential river crossings. Conceptual illustrations from the River Parkway Trust's study are shown in Figures 7 and 8.

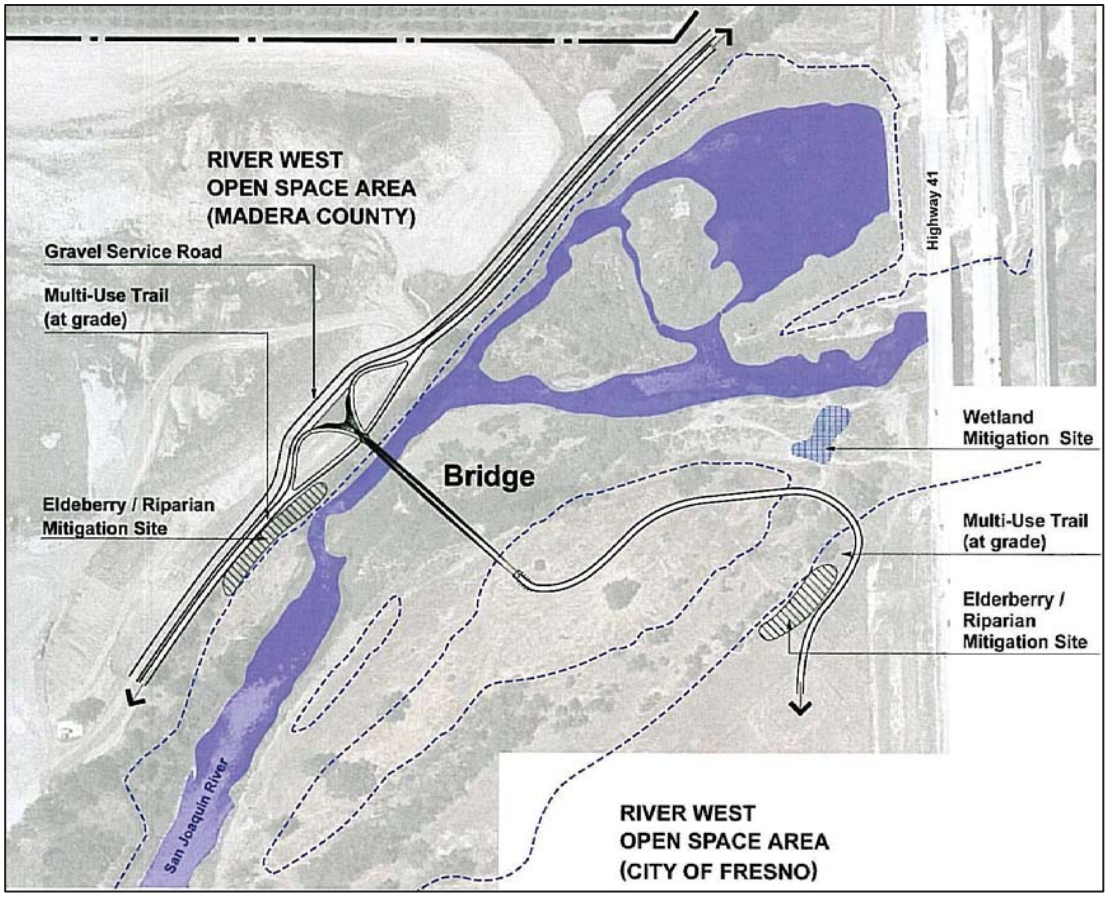


FIGURE 7: RIVER CROSSING PROPOSAL, SAN JOAQUIN RIVER PARKWAY CONSERVATION AND TRUST.

The proposed Gunner Ranch Specific Plan, located north of the project area, abuts the center of River West-Madera on the Specific Plan's southeast corner. The two properties meet on the side of an eighty foot tall bluff. Views of the City of Fresno and the entire river bottom are afforded from the southeast corner of the Gunner West project area. However, access may be limited to the river bottom due to the 80%+ grade of the bluff. Within the Van Buren Unit, roughly 2/3 mile north of the southeast corner of Gunner Ranch, bluff slopes decrease to near 10% grade. While trail connections are more feasible in this location, publicly owned property is disconnected from the Gunner Ranch project area by a 500 to 1,000 foot wide strip of private property. A trail easement has been dedicated to Madera County from the Golf Center to the top of the bluff near Children's Hospital. If one or more trail connections can be made north from River West-Madera to the top of the bluff, connections are then possible to future trail networks within planned development areas.

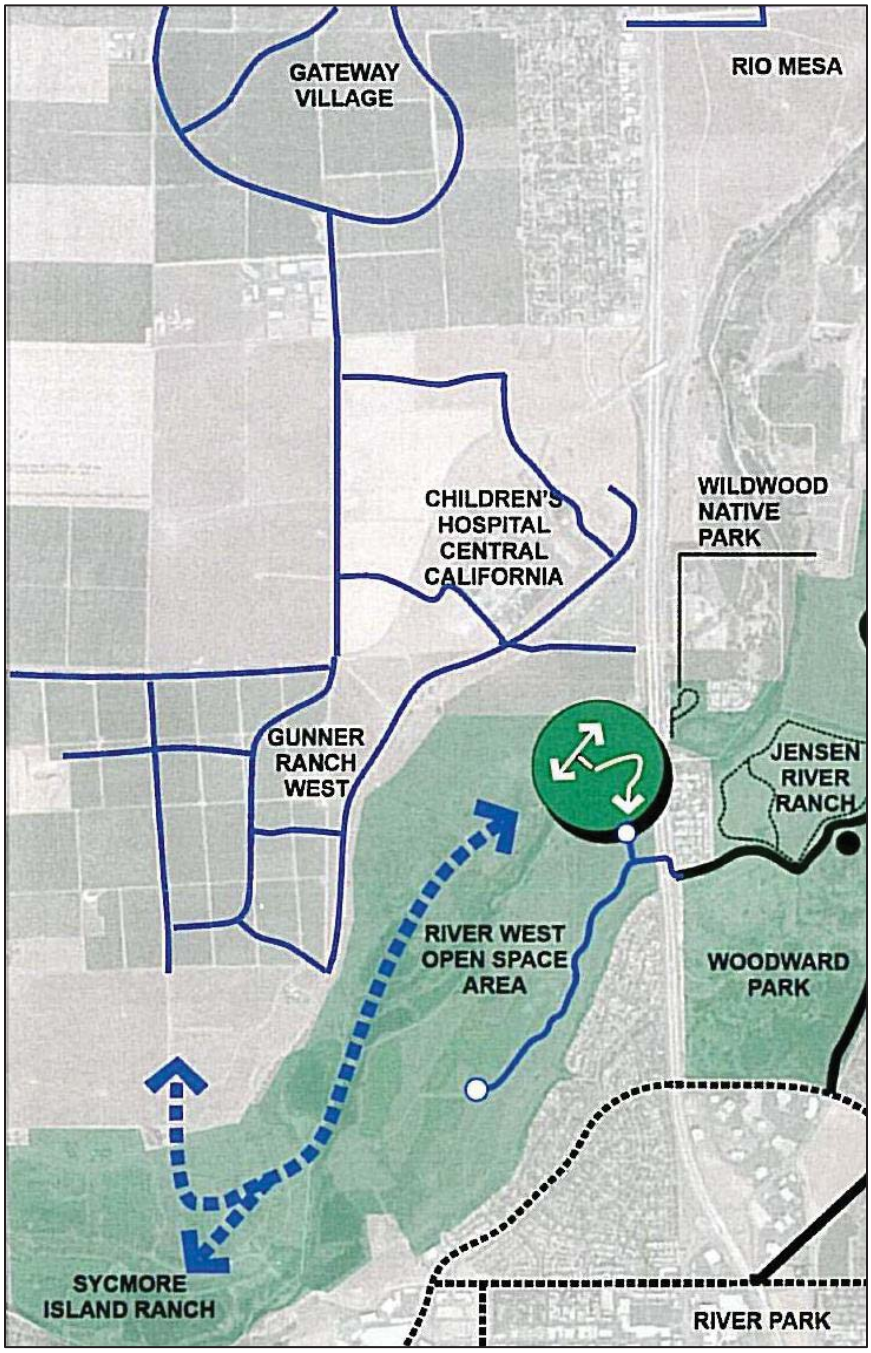
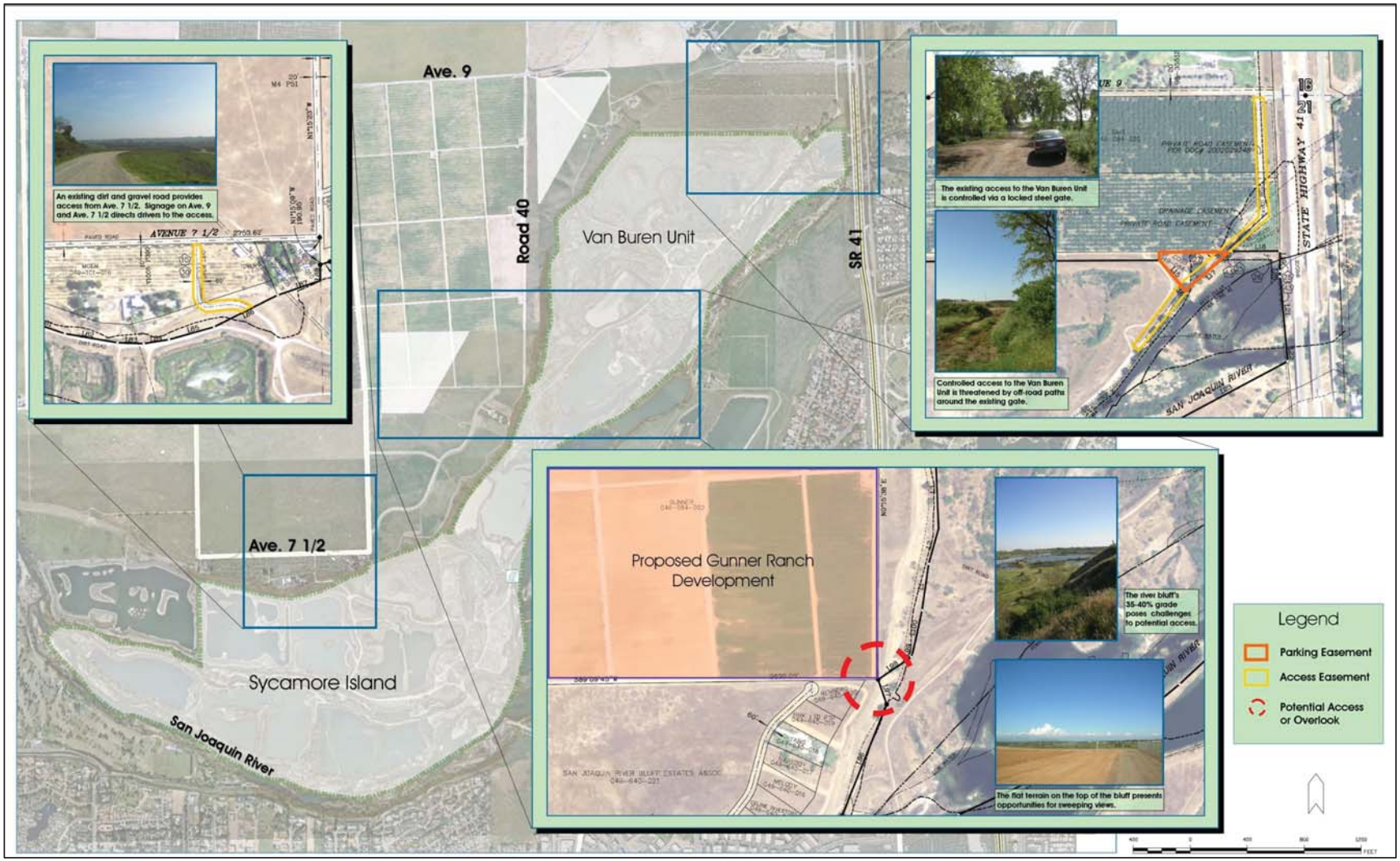


FIGURE 8: RIVER WEST-MADERA OFFERS POTENTIAL CONNECTIONS TO TRAILS WITHIN PLANNED DEVELOPMENT IN MADERA COUNTY. *DIAGRAM COURTESY THE SAN JOAQUIN RIVER PARKWAY CONSERVATION AND TRUST*

FIGURE 9: EXISTING AND POTENTIAL ACCESS



Onsite Roads

FIGURE 10: BREAK IN THE LEVEE DISCONNECTING SYCAMORE ISLAND FROM THE VAN BUREN UNIT.

Circulation within the project area consists of dirt roads remaining from the previous sand and gravel mining operations. The roads provide a wide, compact surface commonly measuring in width from eight to nine feet. Road surfaces are either compact dirt or a mix of dirt and gravel. Some areas, such as in the vicinity of the Sycamore Island bait and tackle shop, the access drives measure from nine to twenty feet in width. The majority of existing use roads are adequate for vehicle circulation around most of both Sycamore Island and the Van Buren Unit. Some of the roads in thickly vegetated areas are constrained due to overhanging trees or bushes. Erosion also poses a problem where roads follow the edge of the river or steep embankments along ponds. The eastern access to the Van Buren Unit is threatened in the long term from a meander in the river, which continues to erode the northern river bank and move the river channel closer to the existing road.

On Sycamore Island, existing dirt and gravel roads generally follow the boundaries of the ponds. On the south side of two ponds located adjacent to the existing river channel, the road follows a berm which is interrupted by breaks where river water flows into the ponds. The most southwesterly pond is connected to the river on its western end, where the former road is disconnected via a break in the levee. The river flows into and out of the most southeasterly pond and thereby disconnects the existing roads.

On the southern end of Sycamore Island, immediately south of the bait and tackle shop, dirt fill and a culvert provide access across the North Channel of the river to a wide parking area utilized for fishing and river access. The existing culvert is unarmored and exposed to erosion from normal flows. In order to provide a solution, the San Joaquin River Conservancy is replacing the culvert with an alternative that will withstand and safely pass channel flows. The Department of Water Resources is currently evaluating several alternative replacements, including corrugated metal pipe (CMP), concrete pipe, box culvert, con-span, and a prefabricated bridge. The new facility will have the capacity to carry visitor vehicles, maintenance vehicles, emergency response vehicles, and allow for pedestrians.

The Van Buren Unit is currently separated from Sycamore Island through a break in the levee between the River and a gravel pit. The San Joaquin River Conservancy may repair the levee break in order to reconnect Sycamore Island to the Van Buren Unit. The repair will isolate the pond from the river to ensure the river channel is maintained as envisioned in the River Restoration Program. Therefore, an engineered hydraulic connection to the pond from the river may be pursued.

Existing public access onto the Van Buren Unit is limited to guided tours and supervised stewardship activities only. The area is closed to vehicular traffic and all guided tours are by foot. Vehicular access to Sycamore Island is generally permitted where roads currently exist. Other than the existing roads, no trails exist. Without auto traffic, the roads have the capacity to handle horse, bicycle, and pedestrian access.

Boating Facilities

Sycamore Island offers access to the multiple ponds in the area via five separate small boat ramps. The primary use on Sycamore Island includes fishing in both the River and onsite ponds (three of which are directly connected to the river channel). Existing boat ramps are in varying conditions from rarely maintained dirt ramps to well maintained gravel and concrete ramps. Water levels have decreased within Sycamore Island's interior ponds over the past decade, resulting in limited boating access to Sycamore Island's interior ponds, especially during dry years. The reduction in water levels has been attributed to the closure of the gravel operation onsite, which actively pumped water from the river into an up-gradient sedimentation pond, thereby filling the interior ponds below. The southernmost pond within the Van Buren Unit has an improved small boat ramp. However, the area is currently closed.

FIGURE 12: WELL-MAINTAIED GRAVEL AND CEMENT RAMP INTO RIVER CHANNEL

FIGURE 11: POORLY MAINTAINED GRAVEL/DIRT RAMP INTO POND

Onsite Facilities

No structures or other facilities currently exist on the Van Buren Unit. However, a well and septic system remain where a host formerly resided during operation of the sand and gravel mine. After the sand and gravel operation ceased operation, both Madera County and the San Joaquin River Conservancy ensured that onsite facilities would remain for potential future improvements as the San Joaquin River Parkway continued to develop for recreational putposes.

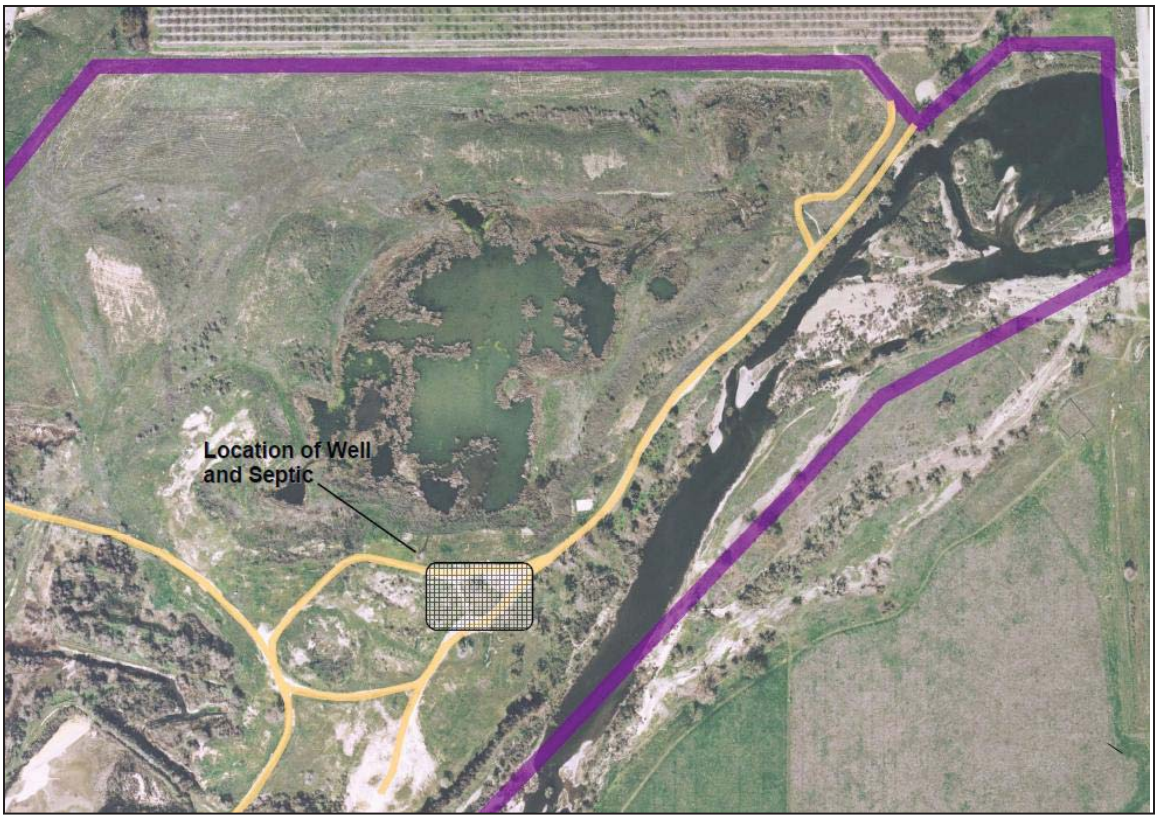


FIGURE 13: LOCATION OF EXISTING WELL AND SEPTIC, VAN BUREN UNIT

Sycamore Island is improved with a bait and tackle shop and a storage shed. Both buildings remain from former mining activities onsite. A vault toilet restroom is installed, as well as twelve concrete picnic tables, and portable toilets are maintained as well by the concessionaire. Two river bridges were removed, and a culvert bridge across the North Channel is in place, as discussed earlier.

Regulation

Agencies with Jurisdiction

The San Joaquin River Conservancy Act brought the San Joaquin River Conservancy into existence in 1992. The Conservancy is charged with developing the San Joaquin River Parkway and coordinating efforts and mediating differences among the state and local jurisdictions that form its governing board. The Parkway planning area encompasses the river floodplain from Friant Dam to Highway 99. The Conservancy has management jurisdiction for the lands it has acquired for the Parkway.

The River West-Madera project is a result of the Conservancy's partnership with Madera County to create a plan that meets Parkway goals and objectives and is seamlessly integrated with local land use, conservation, and recreation planning.

The Parkway Master Plan sets forth policies that will influence the conceptual design of River West-Madera. Most notably, the following policies related to trail locations and buffers to protect wildlife will guide many of the recommendations within the Master Plan:

- NP1: Sets minimum width for wildlife corridors on both sides of the river and provides buffers from more intensive uses.
- NP11 & NP12: Avoid rookeries when considering more intensive uses and trails.
- NRD1.1: Site new facilities in previously developed areas or restored sites. Overlooks and viewing areas must avoid intrusion into sensitive habitat areas.
- NRD10: Requires a continuous strip of riparian vegetation throughout the parkway with a minimum required width.
- RO1: Locate intensive recreational activity away from sensitive natural resources.

Madera County is the land use authority for the River West-Madera project area. The boundary between Madera and Fresno Counties varies from different maps, including U.S. Geological Survey, Assessors Maps, and road maps. The official boundary line is represented by the center line of the low water channel of the San Joaquin River. County boundaries are set forth in California Government Code section 23120 and clarified through the 1959 court case, Bishel v. Faria, which established the centerline of low water channel rule.

Responsibility for water resources management in California is shared among several agencies. The State Water Resources Control Board (State Water Board) is responsible for the water rights and water quality functions of the state, including the San Joaquin River. The Board has jurisdiction to issue permits and licenses for appropriation of San Joaquin River surface water and any underground streams. (The California courts have jurisdiction over the use of percolating ground water, riparian use of surface waters, and the appropriate use of surface waters initiated prior to 1914.)

The State Department of Fish and Game (DFG) is responsible for regulating activities that may have an effect on state-listed plant and wildlife species. Through a Streambed Alteration Agreement, the DFG requires notification and must approve any implementation suggested in the Master Plan that will substantially divert, alter, or obstruct the flow of the River or any side channels. Notification and approval is also required of any activity that may change the bed, channel, or banks of the River or

any reclaimed ponds onsite. Most waterways subject to the DFG's jurisdiction will also be subject to regulation by the U.S. Army Corps of Engineers, yet not all areas under Army Corps jurisdiction require permits from the DFG. The DFG requires that all implementation measures are conducted in a manner that is protective of fish and wildlife resources.

The River West-Madera area contains "waters of the United States" and likely contains jurisdictional wetlands as defined by the federal Clean Water Act. The U.S. Army Corps of Engineers regulates all waters of the United States and jurisdictional wetlands. Corps permits will be necessary for all activities conducted onsite that would involve any excavation, dredging, fill, or disposal into waters of the United States. Permits will also be needed for any activities that may alter or modify the course, condition, location, or capacity of the river. If these activities are planned, a jurisdictional delineation of wetlands and waters must be completed.

The California State Lands Commission (SLC) also has jurisdiction within the project area. The SLC has established the boundaries of state sovereign lands (the river channel owned by the State) and lands in the public trust (lands between the ordinary low and high water marks within upland private and public ownerships).The SLC has regulatory and management jurisdiction for State Sovereign Lands and lands in the public trust easement. The SLC works in cooperation with other agencies, such as the San Joaquin River Conservancy, in order to protect the public's rights to use the river for commerce, navigation, fisheries, recreational uses such as fishing and hunting, and the preservation of habitat and open space. As a steward of the San Joaquin River, the SLC prepares environmental documents for land use changes within the River and comments on environmental documents for projects that may affect the River.

San Joaquin River Restoration Program

Several State and federal agencies participate in the San Joaquin Restoration Program, the result of a settlement to provide sufficient salmon habitat in the San Joaquin River from Friant Dam to the Delta. Agencies involved include the DWR, DFG, National Marine Fisheries Service, USFWS, and the U.S. Bureau of Reclamation. The Program is based on two goals:

- **Restoration**: To restore and maintain fish populations in "good condition" in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.
- **Water Management**: To reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows provided for in the Settlement.

As of 2011, Program activities include interim water releases to facilitate more natural River flows. The program environmental review field surveys and other important studies are underway.

The River West-Madera Master Plan is located within Reach 1A of the San Joaquin River as it relates to the River Restoration Program. Reach 1A stretches from Friant Dam to the Highway 99 bridge. As the upper stretch of the river, Reach 1A is to the reach in which salmon spawning will occur. The reach is particularly conducive to spawning due to the presence of gravel and "riffles."

According the DWR, the project area is within the most impacted stretch of Reach 1A as a result of sand and gravel mining that has dramatically changed the river's natural course and functionality as salmon habitat. In-channel mining and gravel pits that are not isolated from the channel degrade salmon habitat by creating large areas for water to collect and warm during the hot summer months. In order to maintain salmon habitat, water temperatures must be kept cool. The historic relatively narrow channel has been maintained for the most part east of the Highway 41 bridge where water temperatures remain cool enough for salmon spawning. Further, fish in warm water habitat will prey on reintroduced salmon.

The high impact of sand and gravel mining upon the project area could be detrimental to the creation of salmon habitat in Reach 1A. Therefore, the Restoration Program's main goals are to fill or isolate gravel pits to reduce the influence of warm water upon the main river channel. Several sections of the river channel within the project area may need to be reconstructed in order to facilitate the restoration of salmon habitat. Figure 14 is a schematic identifying a typical cross section of reconstructed river channel, along with a typical method utilized to reconstruct river channel where the channel has been impacted by in-channel mining activity. Figure 14 is not meant to indicate the final channel design of the river within the project area, but is intended to give a general idea of reconstructed channel design.

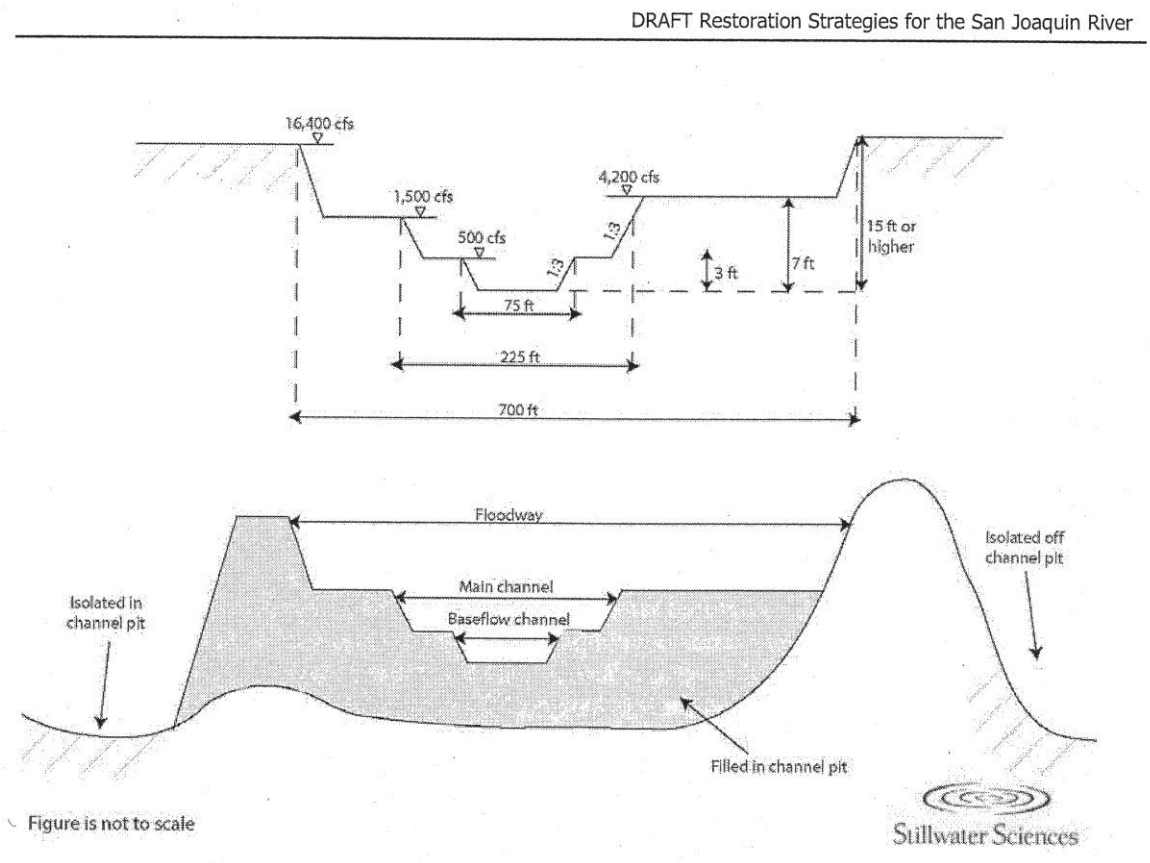


FIGURE 14: CONCEPTUAL DIAGRAM OF RESTORED RIVER CHANNEL

Several other Restoration Program goals are intended to recreate viable salmon habitat within the project area. Existing river diversions, such as irrigation pumps or siphons will be screened to ensure salmon remain within the river channel. Stretches of the river that have been preserved in their natural state, or at least where the channel is well-defined, are intended to be preserved. Other important targets for preservation include existing areas with riffles and side channels, both of which are conducive to spawning. The North Channel on Sycamore Island may become an important side channel for salmon habitat.

River Restoration: Important Planning Issues of Concern in the Project Area

Areas where the river channel is not well defined or is interrupted by gravel pits may be modified through the Restoration Program in recreating a functional river channel (see Figure 15). Since these disturbed sections may be significantly modified in the future, major recreation and restoration improvements (including replanting, trails, and other features) should be located away from these areas to the extent possible. Areas planned for recreational activities and/or river access should also be directed away from stretches of the river with riffles, where spawning activity is likely to take place, so as to discourage the disturbance of spawning activity. Instead, public access and proximity to the river should be directed to stretches of the river with slow moving water or pools. However, public outreach goals of the River Restoration Program may include carefully designed spawning viewing areas and involve interpretive signage. Public viewpoints near riffled stretches of the river should be designed to restrict access to the river.

Future restoration activity may include short term, yet potentially significant impacts on the project site, such as soil disturbance and vehicular impacts necessary for river channel reconstruction. Fill form higher and un-utilized areas of ground near the river channel may be utilized to create new floodplain areas or augment the river channel.

Existing roads adjacent to the river channel will be important to river restoration activity in the future, including vehicle and heavy equipment access. The maintenance of existing roads formerly used for sand and gravel mining activity will be important in facilitating future restoration efforts.

Floodplain habitat has been found to be of high importance for salmon rearing. The Restoration Program's plans for the restoration of isolated sand and gravel pits in the river floodplain are limited in scope. Some isolated pits are influenced by seasonal fluctuations in groundwater levels, thereby sustaining what are becoming robust plant and animal communities. However, many existing isolated pits are not influenced by seasonal groundwater fluctuations and therefore do not support the plant and animal communities they were originally intended to support. Furthermore, pits that may become isolated as a result of river restoration activities may only be influenced by seasonal river fluctuations, mostly involving floodwater cresting over the floodway banks during flood events. The Department of Fish and Game, Bureau of Reclamation, and the Department of Water Resources are working together to ensure viable floodplain rearing habitat is accounted for in the Restoration Program. It remains to be seen how the need to preserve and/or create floodplain rearing habitat for salmon will affect the isolated gravel pits.

While many invasive plant species threaten the viability of river habitat, the River Restoration Program remains in its early stages and does not plan to include invasive species control measures at this time.

FIGURE 15: RIVER CHANNEL WITH RIFFLES ON THE SOUTHWESTERN EDGE OF SYCAMORE ISLAND

Special Considerations

Security

In the past, the mining companies maintained active security patrols to preclude trespass, protect their assets, and protect against the risk of public injury.

The Conservancy is required by statute to keep its properties closed for general public river access, recreational, and educational use until and unless it has adequate resources for proper operation and management.

The Conservancy has provided for operations and management for seasonal fishing and river access, four days per week, at Sycamore Island through a contract (concession agreement) with a private service provider. The vendor is responsible for collecting use fees, opening and closing the site, providing clean restroom facilities, providing for litter cleanup and waste disposal, and ensuring that visitors conform to the rules for use of the site. The site is closed during winter months and at night.

The Van Buren Unit is closed to the public. Licensed groups provide stewardship activities, such as tree planting, invasive species removal, and litter cleanups, and educational field trips within the Van Buren Unit.

FIGURE 16: SIGNAGE PROHIBITING ILLEGAL ACTIVITY, RIVER NEAR PALM AND NEES AVE., CITY OF FRESNO

The Conservancy maintains locked gates on the access roads into both sites, and posts signs prohibiting trespass, camping, campfires, shooting and hunting. In some locations, barbed wire fences serve to discourage unauthorized access. The Conservancy relies on periodic inspections to identify and repair vandalism, dispose of illegally dumped wastes, and address illegal activities through coordination with state and local enforcement agencies.

The public has the right to recreate and fish on the banks of the state's inland waterways, including the San Joaquin River, provided they access the river lawfully from a public road or open public area. Informal public river access in the project vicinity occurs at the access road to the Van Buren Unit, and on the Fresno side of the river in the vicinity of Palm and Nees avenues, where a recently-gated private road allows pedestrian access to the river. Four days a week the public can also use the Conservancy's Wildwood Native Park, just upstream of the Highway 41 bridge, to get to the river and traverse or boat up and downstream.

The City of Fresno recently adopted a City Ordinance which prohibits river access after 10:00 p.m., and prohibits in the river bottom camping, campfires, open fires, fireworks, shooting, and off-road vehicles, among other prohibitions. The County of Fresno adopted a similar measure. The County of Madera has not adopted any of these prohibitions.

Security and public safety problems, and associated habitat damage, presently occurring in the vicinity of the project area include: trespass into Conservancy and privately owned lands, off road vehicles, camping and campfires, occasional shooting and poaching, and illegal dumping.

The plan for River West Madera will envision the improvements, facilities and operations necessary to properly and safely provide daily, year-round or seasonal services to the general public.

Physical

Geology/Soils

The project area is within the San Joaquin Valley, a flat expanse between the Sierra Nevada Mountains and Coastal Ranges consisting of various sediments that have been deposited over millions of years. On the eastern side of the Valley, the soil is composed predominantly of soils derived from a granitic parent material originating from the Sierra Nevada. Over its geologic history, rivers have moved back and forth, depositing sediment worn from the mountains above, fanning out into large alluvial floodplains. This process contributed to the flat topography and the rich agricultural soil found today. The project area, located on the eastern edge of the Valley, is unique in that the flat topography has been cut by the river as it emerges from the foothills. As a result, tall, steep bluffs mark the general river floodplain in the project area. The river has incised the floodplain from ancient sediment. The only rocks existing in the project area include gravel washed down by the river itself.

Thirteen soil types of varying mixtures of sands and loams are located within the perimeter of the project site according to the Soil Surveys of Madera (Survey Unit CA654) and Fresno County (Survey Unit CA653) (USDA-NRCS 2011). Approximate boundaries of these soil types are shown in Appendix A.

Flooding

The majority of the project area is designated within a 100-year flood zone. Flood zone maps were revised as recently as 2001 by the Federal Emergency Management Agency (FEMA), following extensive flooding in 1997. Maps were originally generated utilizing a 100 year base flood elevation below a flow of 20,000 cubic feet per second (cfs). However, the 1997 flood event was approximated at 67,000 cfs, radically changing potential flood impacts throughout the river floodplain. Therefore, the new flood zone maps utilize a 100 year base flood elevation of 71,000 cfs. Note that due to gravel mining in operation through the year 2005 (four years following 2001 flood zone mapping), the topography of the project area has changed, which may affect 100 year flood flows. Three separate flood zones have been identified with the project area. Each flood zone is detailed below, including the description and limitations of each designation:

- Zone X: Indicates areas of 0.2% annual chance of flood.
- Zone AE: Indicates areas that would be subject to flooding by the 1.0% annual chance of flood (100 year flood event). Any habitable structure places within the AE zone must be flood proofed or elevated above the 100 year base flood elevation. Structures must be designed and constructed so as to not incur substantial damage and cannot hinder flood flows. Fill utilized to elevate structures must be taken from onsite (no imported fill, must be from within the AE zone) to ensure no net displacement of flows or flow capacity.

- Zone AE, Floodway: Indicates areas that must be kept free of encroachment so that 1.0% annual chance of flood can be carried without substantial increase in flood heights. Flows include strong currents, not standing water. No obstructions may be placed in the floodway, including improvements that may obstruct flows or may become loose during a flood event.

FIGURE 17: FLOOD WATERS OVER SYCAMORE ISLAND IN 1997

It is important to note that plans are currently being formulated that may substantially increase flood protection requirements in much of the entire San Joaquin River floodplain. No later than 2012, the Department of Water Resources will release the Central Valley Flood Protection Plan, which is intended to curb urban development and reliance upon levies in the flood prone areas of the Central Valley.

Expected High Flow

The maximum controlled release from Friant Dam is approximated at 8,000 cfs. Spring flows as projected within the San Joaquin River Restoration Plan are projected to fall under 8,000 cfs and any release above 8,000 cfs will impact existing developments within the San Joaquin River Parkway. Therefore, 8,000 cfs should be utilized for maximum spring flow projections in the context of the River West Master Plan.

This maximum controlled release from Friant Dam (8,000 cfs) is contained with the existing river channel. The North Channel in Sycamore Island also experiences flows. All existing paths, buildings, and use areas are not impacted from the maximum controlled release. The existing culvert that allows auto access across the North Channel is currently insufficient for such flows; however, plans are underway to correct this deficiency.

FIGURE 18: FEMA FLOOD ZONE MAP OF PROJECT SITE

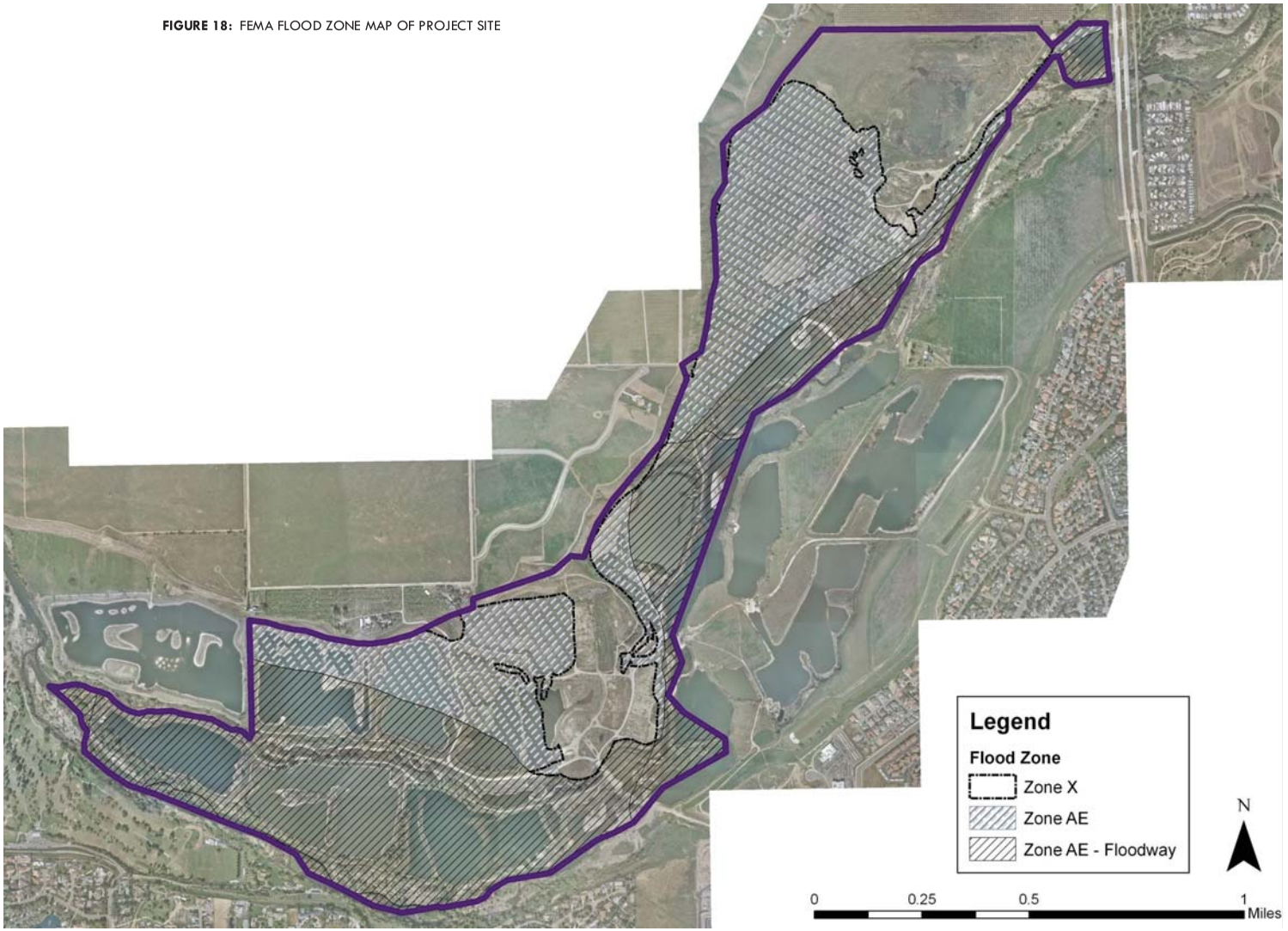
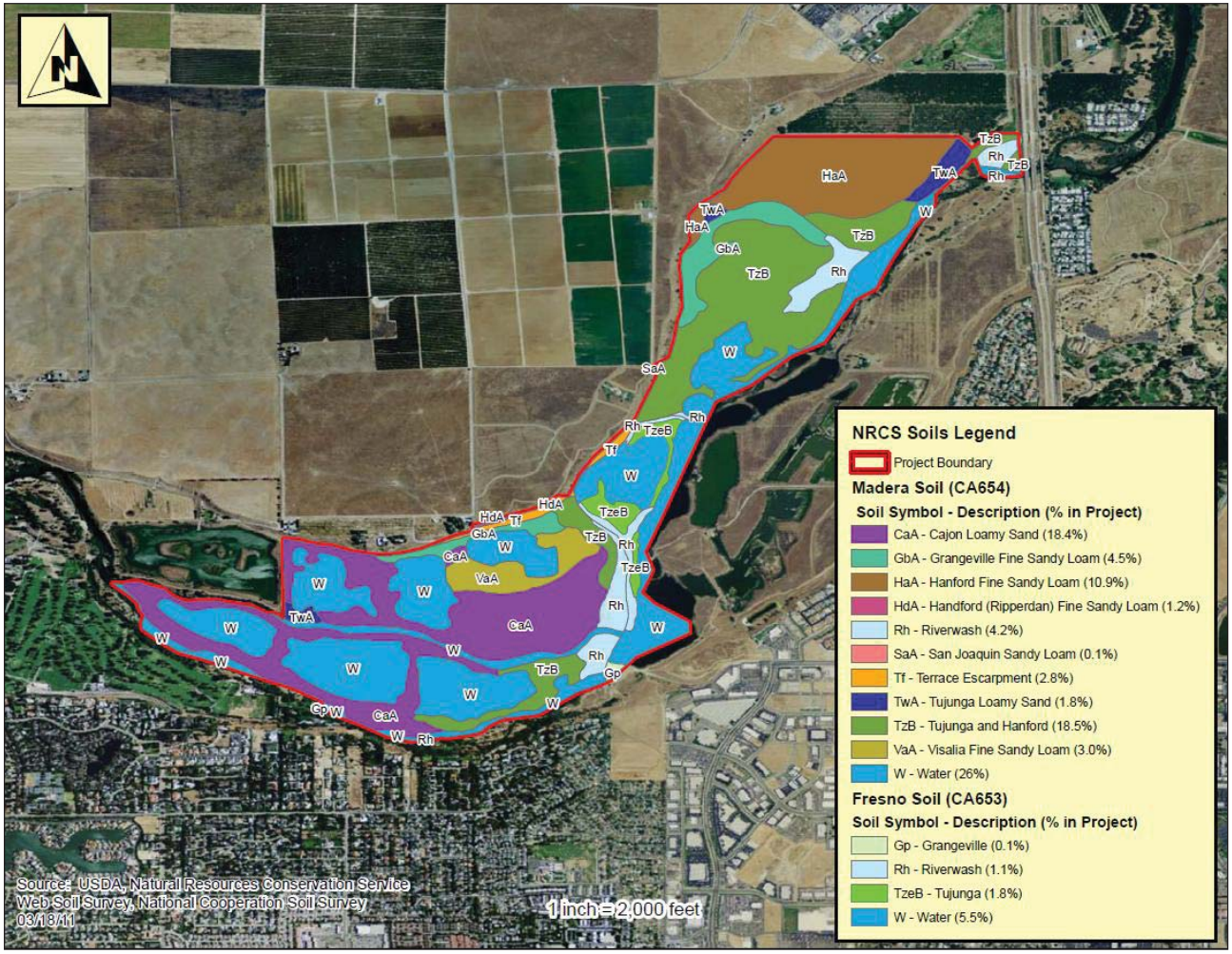


FIGURE 19: SOIL MAP



Natural Resources

Historically, the project area has been utilized for agricultural production including alfalfa and various tree crops. The river bottom offered flat, fertile soil resulting from frequent flooding that deposited rich silt. Surface water was also easily accessible. The potential for sand and gravel in the river bottom to fuel the growth of nearby Valley cities was quickly realized. The project area provided roughly one million tons of sand and gravel on an annual basis beginning in the early 1960s and ending in the 2000s. Approximately 40 million tons of sand and gravel are estimated to have been extracted from the entire site. Mining operations, having ceased in the 2000s, have extracted the majority of sand and gravel resources available within the project area.

Decades of sand and gravel mining and the resulting change in topography severely limits the area's ability to support agricultural production today. Limited areas of uplands appropriate for irrigation remain on the project area.

Landforms and Visual Quality

The project area, extending east from Scout Island to Highway 41, consists of a relatively flat floodplain with interspersed pits and ponds surrounded by relatively steep river bluffs. The most prominent landforms within the project area include the following:

- San Joaquin River main channel running from east to west through the project area
- Steep, north and south facing bluffs identifying the approximate boundaries of the river floodplain
- Numerous pits and ponds interrupting the otherwise relatively flat topography of the floodplain

Ground surface levels within the project area and vicinity range from 249 feet at the river low water level to 331 feet at the top of the river bluff south of Children's Hospital. The bluff slope ranges between 60% and 80% grade on both the north and south sides of the river floodplain. Elevations along the bluff top in Madera County average 330 feet, whereas elevations on the river bottom average 250 feet.

Unobstructed views of the project area are available from one public road, Highway 41. Views are also obtained from the two access points to the project area, including the Avenue 7 ½ access to Sycamore Island and the Avenue 9 access near Highway 41. Views are also obtained from the Palm and Nees Avenue access to the south of the project area, although, the entry is currently closed to vehicular access. Open space views of the project area are obtained from the northwest corner of Woodward Park in Fresno and a short trail located along the bluff adjacent to residential communities in the City of Fresno. Several photographs are provided to illustrate the visibility of the project area. Other views of the project area are limited due to obstruction by private residences, office buildings, and limited access due to the steep bluffs that surround the site.

Views from Highway 41 Bridge

Motorists are offered views of the Van Buren Unit looking west of the Highway 41 bridge over the river. Additionally, direct views of the river, views of the River Park Golf Center, and Children's Hospital are available from the Highway.

Views from Southeast corner of Gunner Ranch

The southeast corner of the property proposed for the Gunner Ranch development is situated 90 feet above the project area, separated by a steep bluff with over an 80% grade. The bluff top view offers uninterrupted views of the Van Buren Unit and the center of the project site. Views looking upriver are also afforded, as well as views of the opposite bluff and the City of Fresno.

Views from Avenue 7 ½ access to Sycamore Island

All of Sycamore Island is visible from the access from Avenue 7 ½ in Madera County. Nearly all of the pits created by mining activity on the former Moen property are visible in the foreground. Views of the river channel are blocked by sycamore and eucalyptus trees. The southern river bluffs within the City of Fresno are visible, as well as residential and office development on top of the bluff. Pacific Gas and Electric transmission lines are visible in the foreground passing across Sycamore Island.

Views from bluff trail at Del Mar Avenue, City of Fresno.

A ½ mile trail follows the southern bluff in the City of Fresno beginning at Del Mar Avenue and ending at Churchill Avenue. The trail offers expansive views of the river bottom. Views are offered east to Highway 41 and the Van Buren Unit and westward including Sycamore Island. The entire northern bluff in Madera County is visible as well.

Views from Spano Park, City of Fresno

Spano Park, located at the northern terminus of Palm Avenue in the City of Fresno, offers expansive bluff-top views of the entire project area. Spano Park offers the highest public vantage point in the vicinity of the project area from which to view the river bottom.

FIGURE 20: VIEW FROM AVENUE 7 ½ ACCESS SOUTHEAST OVER SYCAMORE ISLAND AND CITY OF FRESNO

FIGURE 21: VIEW FROM AVENUE 7 ½ ACCESS SOUTH OVER SYCAMORE ISLAND AND CITY OF FRESNO

FIGURE 22: VIEW FROM SOUTHEAST CORNER OF GUNNER RANCH EAST OVER VAN BUREN UNIT

FIGURE 23: VIEW FROM SOUTHEAST CORNER OF GUNNER RANCH SOUTH TOWARD THE CENTER OF THE PROJECT AREA

FIGURE 24: VIEW FROM HIGHWAY 41 BRIDGE TOWARD VAN BUREN UNIT

FIGURE 25: VIEW FROM HIGHWAY 41 BRIDGE DOWNRIVER

FIGURE 26: VIEW FROM BLUFF TRAIL AT DEL MAR AVE. (CITY OF FRESNO) TOWARD VAN BUREN UNIT

FIGURE 27: VIEW FROM BLUFF TRAIL AT DEL MAR AVE. (CITY OF FRESNO) TOWARD SYCAMORE ISLAND

FIGURE 28: VIEW FROM SPANO PARK (CITY OF FRESNO) TOWARD VAN BUREN UNIT

FIGURE 29: VIEW FROM SPANO PARK (CITY OF FRESNO) TOWARDS CENTER OF PROJECT AREA

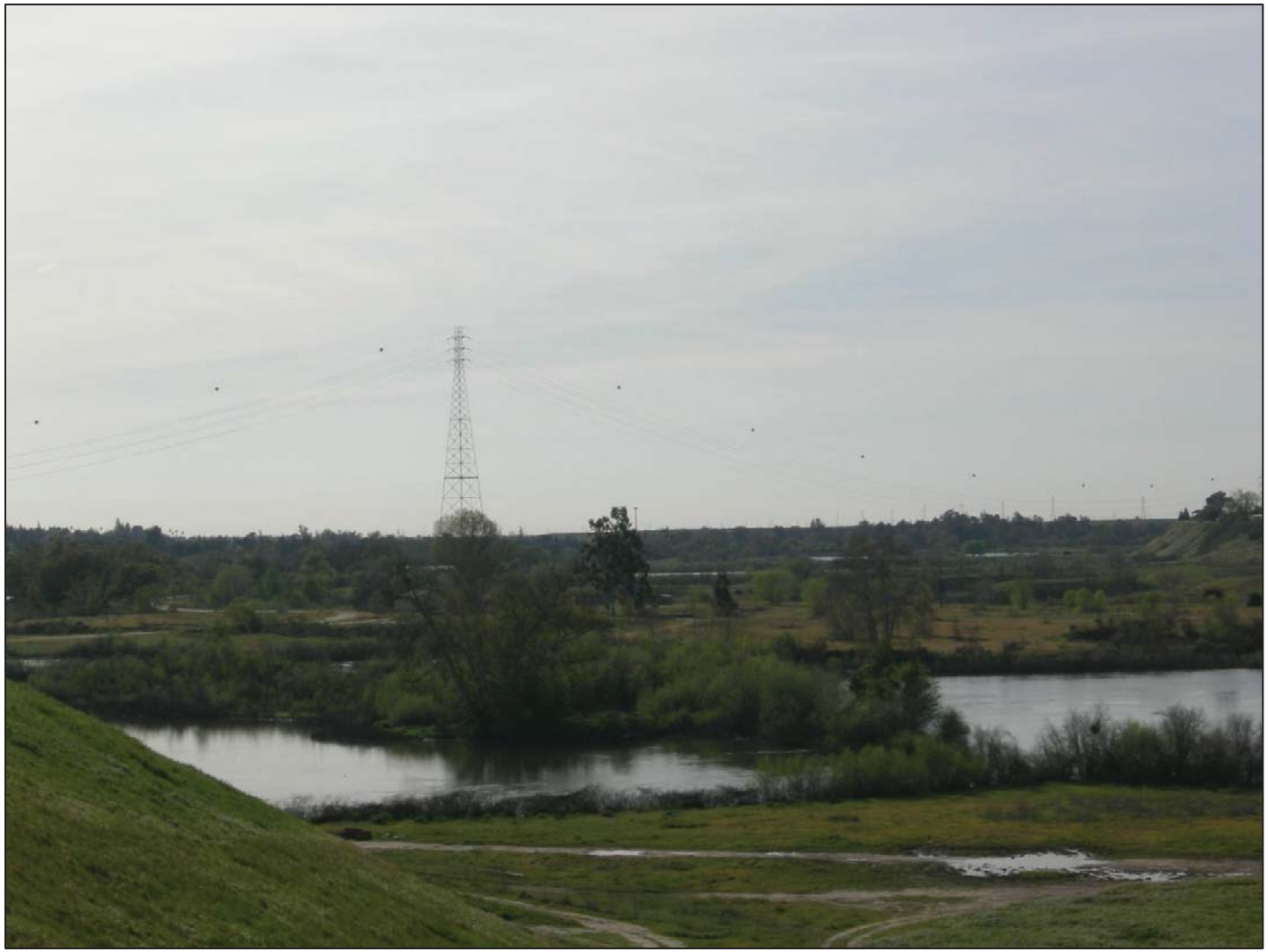


FIGURE 30: VIEW FROM SPANO PARK (CITY OF FRESNO) TOWARD SYCAMORE ISLAND

Biology

Background

The site has undergone several transformations since the 1950's, including use for ranching and agricultural purposes (i.e. cattle, sheep, watermelons, fish, and crawfish etc.), and in 1963 the land was developed for sand and gravel mining operations. The site has been highly disturbed by mining during the historical use as a sand and gravel extraction location.

Reclamation of the area has been successfully accomplished in a significant portion of the property with the creation of several water features that support a variety of associated habitats. In addition to the created basins, the site also includes an interlinking system of berms, open fields, and access roads. However, little natural habitat remains when compared to other native portions of the San Joaquin River. There are only small bands of habitat that are relatively native on the subject property. The areas that are somewhat undisturbed are along the immediate edges and limited fringe of the San Joaquin River, near the entrance to the northeastern portion of the property, and at the toe of the bluff along the northern border of property. However, even these areas exhibit influences and alterations from the previous development and are not considered in a native wetland, riparian, woodland, or mixed chaparral state.

The wetland areas are primarily associated with the created water features. The fragmented riparian area adjacent to the river traverses from the eastern portion of the subject property to the west along the southern edge of the project location. The fragmented woodlands are comprised primarily of separate valley oak, cottonwood, sycamore, and eucalyptus dominated assemblages. There are short zones of intergradations between the various habitats.

Due to the influence of storm events and upstream releases from Friant Dam, the dynamics and characteristics of the habitat can vary through the year, as experienced during the early part of the year (Jan-Feb 2011) when storm flow raised the water level in the river approximately five or six feet in places causing some near stream areas to become temporarily inundated.

Habitat Types

The surveyed habitats were classified as Annual Grassland, Valley Foothill Riparian, Riverine, Lake, Freshwater Pond, Mixed Willow, Mixed Chaparral, Freshwater Emergent Wetland, Freshwater Forested/Shrub Wetland, Sycamore Woodland, Fremont Cottonwood Woodland, Eucalyptus Woodland, Barren and Urban.

These classifications were derived from combining the habitat categories described in Wildlife Habitat Relations program, the National Wetland Inventory, and the Manual of California Vegetation since the use of a single descriptor method did not, in the consultants' opinion, adequately portray the site biological condition.

The following Table provides the habitat acreages and percent of coverage.

TABLE 1 - RIVER WEST HABITAT CLASSIFICATION SUMMARY			
Classification	**Acronym**	**Acres**	**% Coverage**
Annual Grassland	AGS	244.59	30.6%
Lake	LAC	105.48	14.1%
Mixed Willow Series	MWS	74.40	9.3%
Fresh Water Pond	FWP	105.48	13.2%
Riverine	RIV	46.55	5.8%
Fremont Cottonwood Series	FCS	43.35	5.4%
Freshwater Emergent Wetland	FEW	40.92	5.1%
Freshwater Forested/Shrub Wetland	FFSW	36.70	4.6%
Urban	URB	29.34	3.7%
Valley Foothill Riparian	VRI	28.17	3.5%
Mixed Chaparral	MCH	13.75	1.7%
Sycamore Woodland	SYC	12.49	1.6%
Barren	BAR	7.61	1.0%
Eucalyptus Woodland	EUC	2.88	0.4%

It should be noted that due to the varying degree of habitat intergradations of one habitat into the other that the total acreage for the habitat can exceed the project boundary total acres. This is a common artifact of the blending of the habitats as they transition from one type to the other coupled with the inherent inaccuracies when rounding the decimal place up or down. The minor discrepancies do not affect the generalized percentage totals which present a sufficient level of accuracy for the purposes of this document. However, the values should not be substituted for engineered calculations for designs or other applications.

FIGURE 31: RIVER WEST HABITAT CLASSIFICATION – SYCAMORE ISLAND

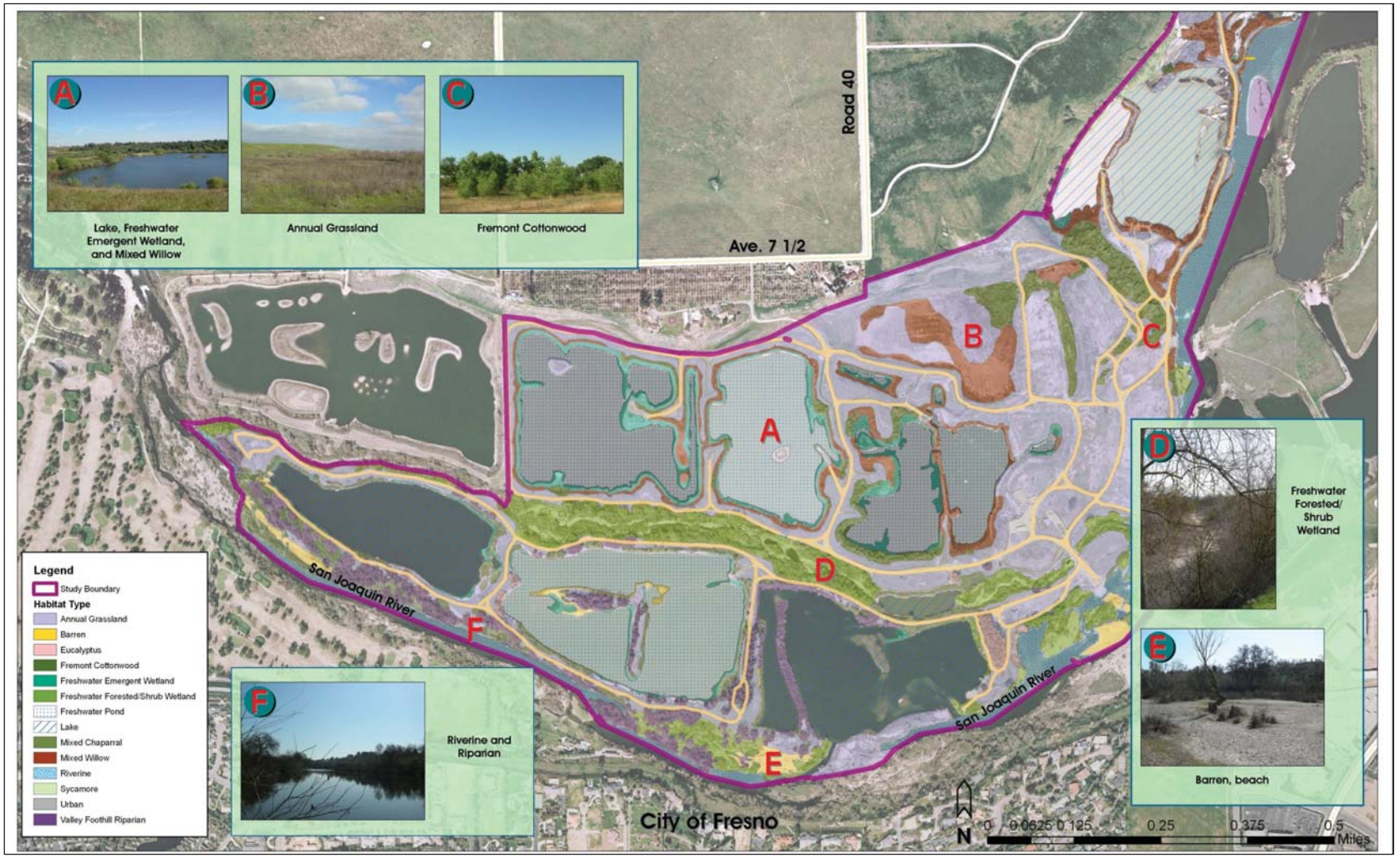
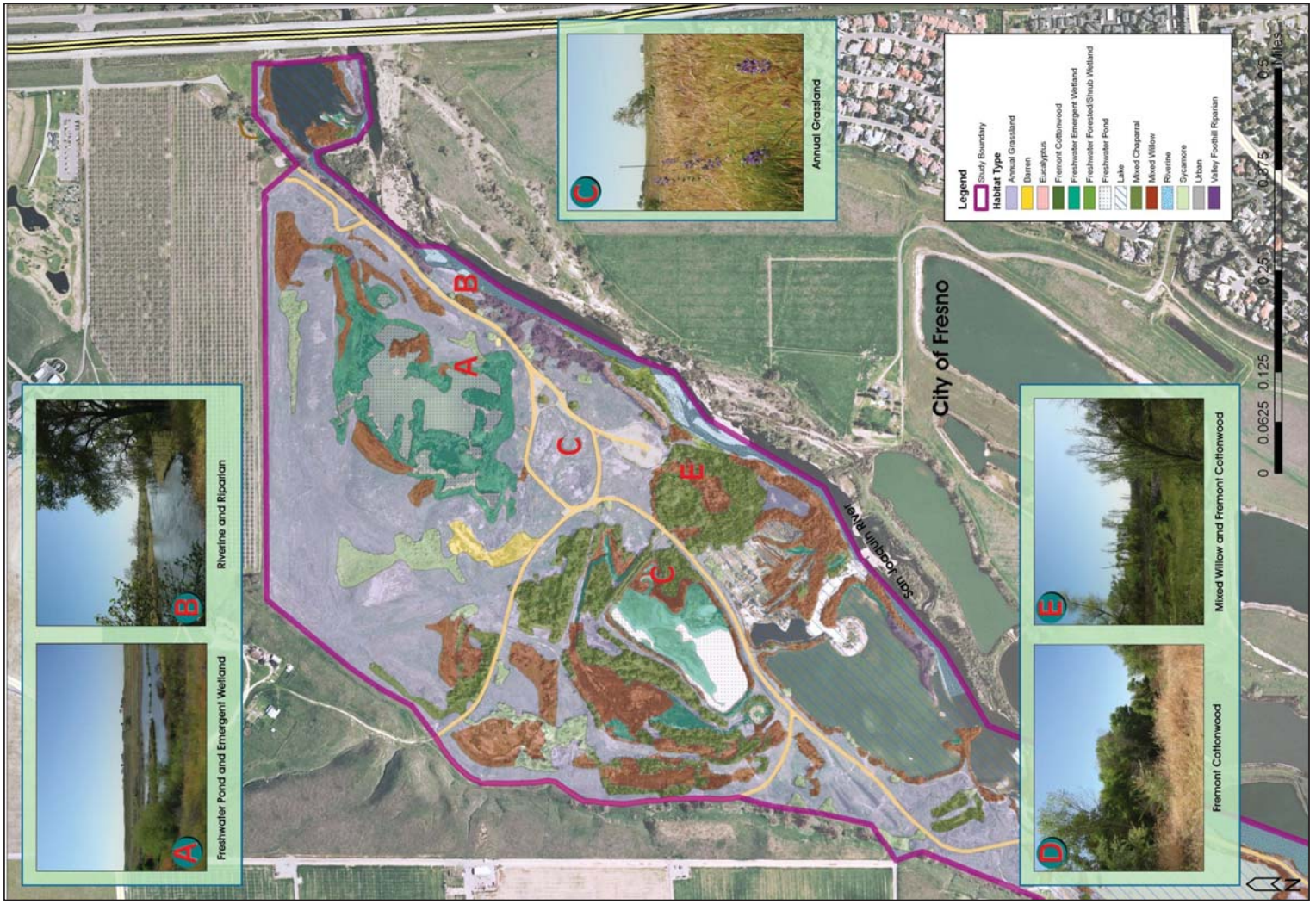


FIGURE 32: RIVER WEST HABITAT CLASSIFICATION – VAN BUREN UNIT



Annual Grassland

Annual grassland (244.59 acres or 30.6%) is the most abundant community type at the project site. It should be noted that the grassland acreage overlaps into some of the riparian, wetland and individual or grouped woodland features since the grasses tend to grow up to the base of the trees and intergrades with the other habitat types in most areas. The riparian, wetland, woodland and other feature locations used in this report are based on aerial photography approximation of the area coupled with the use of handheld GPS system for field verification, and therefore could possibly duplicate some of the grassland areas calculations. It should be further noted that while the surface mining reclamation has been relatively successful, the annual grasslands at the site are still considered disturbed due to previous mining activities that unconsolidated and segregated the soils by mechanical means prior to placement and contouring by tracked vehicles. The species palette in the grassland includes numerous ruderal and invasive noxious plants that degrade the quality of the grasslands. Additionally, at Sycamore Island the continued use for recreational activities and associated parking has downgraded the quality of the grassland community. The resulting grasslands are located on the more level areas across the majority of the north and eastern portions of the project site, and as an understory in riparian and the woodland locations scattered around the project site.

Non-native annual grasses dominate the annual grassland of the project site. Characteristic dominant non-native grasses observed include soft chess (*Bromus hordeaceus*), wild oat (*Avena fatua*), and ripgut brome (*Bromus diandrus*). Tarweed (*Holocarpha heermanii*) and vinegar weed (*Trichostema lanceolatum*) are common forbs in the annual grasslands of the project site.

FIGURE 33: GRASSLAND LOCATED IN THE VAN BUREN UNIT

Annual grasslands provide breeding and foraging habitat for a variety of bird species. The proximity of the isolated and clustered oak, sycamore, cottonwood and eucalyptus trees scattered around the annual grasslands in addition to the fragmented and un-fragmented riparian area along the San Joaquin River on the site enhances the value of the annual grasslands by providing foraging habitat for those species that nest in wooded communities; however, the level of disturbance to the site would likely reduce the use of the site by those species when compared to "natural" sites that are less impacted by the level of human contact realized at the location.

Red-tailed hawk (*Buteo jamaicensis*), and Osprey (*Pandion haliaetus*) are two of the raptors among the wildlife species observed

utilizing the annual grassland during the field surveys. The Red-tails appear to be using the site for foraging while the Ospreys have built a large stick nest in the eastern portion of the property on a power pole located within a grassland island surrounded by an unpaved roadway. Typically, annual grasslands provide habitat for many mammal species, particularly small rodents and their larger predators.

The following mammals or their signs (i.e., scat, tracks, hair, fur, etc.) were observed in the annual grasslands along the mixed riparian and oak tree habitat along the river: black-tailed deer (*Odocoileus hemionus)*, bobcat (*Lynx rufus*), black-tailed hare (*Lepus californicus*), and coyote (*Canis latrans*). The site was observed to have obvious communities of gopher or ground squirrel holes or mounds in some of the northern grasslands and along the upland bluff.

Mixed Willow/Fremont Cottonwood Series

The project site supports two types of riparian communities which freely intermingle. They are Fremont Cottonwood Series (43.35 acres or 5.4%)" and Mixed Willow Series (74.40 acres or 9.3%).

The occurrence of these riparian types depends largely upon the permanence of the water source and the level of stream disturbance that has occurred. These community types are also referred to as the "Great Valley Mixed Riparian Forest" and the "Great Valley Cottonwood Riparian Forest," respectively. Riparian communities occur along river, stream, and creek courses where the presence of water keeps soils moist and therefore supports a vegetation makeup different from the surrounding drier upland areas. Riparian trees and shrubs are tolerant of long periods of surface waters and/or saturated soil conditions along a stream corridor, and also have the ability to tap into deeper zones of soil moisture during the dry season via extended root systems. Riparian systems occur where steep slopes channel water from spring rains into shallow channels or folds in the topography. Although often dry except for late winter and early spring, the drainages are often more densely vegetated than the surrounding slopes as plants take advantage of seasonal pulses of moisture. Both the Fremont cottonwood series and mixed willow series tend to occur on relatively fine-textured alluvium deposited by seasonal flooding.

The type of riparian vegetation in the project site depends on the type of stand and whether it occurs along a perennial or an intermittent seasonal drainage. The canopy of Fremont cottonwood dominated riparian stands in the area is typically less than 25 meters in height and may be continuous or open. Mixed willow riparian stands typically have a canopy that is less than 10 meters in height and the understory is typically sparse.

The vegetation in the Fremont cottonwood series is dominated by Fremont cottonwood (*Populus fremontii*), black willow (*Salix gooddingii*), and California ash (*Fraxinus dipetala*). Buttonbush (*Cephalanthus occidentalis*), white alder (*Alnus rhombofolia*), California buckeye (*Aesculus californica*), arroyo willow (*Salix lasiolepis*), and California grape (*Vitis californica*) are common understory species. In contrast, the mixed willow series is dominated by willows including black willow, arroyo willow, and narrowleaf willow (*Salix exigua*).

Cottonwood/willow riparian communities are distributed across approximately 117.75 acres of the site. These communities occur in the project area along the San Joaquin River and ponds.

Urban

The structure of urban (29.34 acres or 3.7%) vegetation varies.

Five types of vegetative structure are defined in the urban category: tree grove, street strip, shade tree/lawn, lawn, and shrub cover. Tree groves, common in city parks, green belts, recreation facilities, and cemeteries, vary in height, tree spacing, crown shape, and understory conditions, depending upon the species planted and the planting design. Shade trees and lawns are typical of urban areas and try to replicate natural savannas. Structural variation in the shade tree/ground cover type is typical when a large number of species are incorporated in the landscape. Grassland and lawns are structurally the most uniform vegetative units of the California urban habitat. A variety of grass species are employed, which are maintained at a fairly uniform height and continuous ground cover. Biomass productivity is greater than natural grasslands because of irrigation and fertilization.

In this study, urban vegetation is used to describe locations where manmade structures, paths, roads, and other improvements have been placed. Some of the native trees planted in disturbed areas for habitat reclamation were included for this study in this vegetation type. The site has both clustered plantings and individual plantings which have a full array of coverage from dying remnants to a continuous canopy in some areas of the site. Mature tree groves vary in height from 19.3 m (64 ft.) (eucalyptus) to 14.5 m (48 ft.) (Sycamore). Coverage by grassland or ruderal species in the urban areas of the site varies from 0 to 90 percent. Both continuous and discontinuous canopies are observed. Most of the trees planted for reclamation planted in the disturbed grassland habitats, but other ground covers are not uncommon

It is evident that the site at one time had a robust irrigation system feeding the trees planted to meet surface mining reclamation requirements; however, now that reclamation has been completed, irrigation is not maintained throughout the site.

FIGURE 34: A COMPACTED ROAD WITH A TRANSMISSION TOWER AND A STORAGE BUILDING IN THE DISTANCE, SYCAMORE ISLAND

Shrub cover is more limited in distribution on the site than the other structural types. Height ranges from 10 cm (4 in) tall to tree height.

The juxtaposition of urban vegetation types with other vegetation produces a rich mosaic with considerable edge areas. The overall mosaic may be more valuable as wildlife habitat than the individual units in that mosaic.

Mixed Chaparral Series

The scrub habitat contiguous to and along the San Joaquin River has been primarily classified as Mixed Chaparral (13.75 acres or 1.7%).

The Mixed Chaparral is a structurally homogeneous brushland type dominated by shrubs with thick, stiff, heavily cutinized evergreen leaves. Shrub height and crown cover vary considerably with age since last burn, precipitation regime (cismontane vs. transmontane), aspect, and soil type. At maturity, cismontane Mixed Chaparral typically is a dense, nearly impenetrable thicket with greater than 80 percent absolute shrub cover. Canopy height ranges from 1 to 4 m (3.3 to 13.1 ft.), occasionally to 6 m (19.6 ft.). On poor sites, serpentine soils or transmontane slopes, shrub cover may be only 30 to 60 percent and shrubs may be shorter, 0.5 to 3.0 m (1.6 to 9.8 ft.). Considerable leaf litter and standing dead material may accumulate in stands that have not burned for several decades.

Sycamore Woodland Series

The Sycamore Woodland Series (12.49 acres or 1.6%) is characterized by *Platanus racemosa* as the dominant species in the canopy overstory as widely spaced trees.

The Platanus racemosa alliance occurs in a variety of wetland and riparian locations, including perennial stream courses that are seasonally or intermittently flooded and terraces that are above the active floodplain subject to high-intensity flooding. Various other tree species may be present in the over-and understory, but they are subordinate. Sycamore woodlands occur in cismontane California from the Central Coast Ranges and Sacramento Valley east to the Mojave and Colorado Deserts and south to Baja California. In the mixed alliance of Sycamore and Cottonwood, both species may occur as co-dominants, or one is dominant and the other is subdominant in the overstory canopy.

Barren

Barren habitat (7.61 acres or 1.0%) is defined by the absence of vegetation.

Any habitat with <2% total vegetation cover by herbaceous, desert, or non-wildland species and <10% cover by tree or shrub species is defined as barren. Structure and composition of the substrate is largely determined by the region of the state and surrounding environment. In the marine and estuarine environment, barren habitat includes rocky outcroppings in the intertidal and subtidal zones, open sandy beaches and mudflats. Along rivers, it includes vertical river banks and canyon walls.

Eucalyptus Woodland Series

Eucalyptus habitats (2.88 acres or 0.4%) range from single-species thickets with little or no shrubby understory to scattered trees over a well-developed herbaceous and shrubby understory. Two recognizable stands occur in both the Van Buren Unit and Sycamore Island.

In most cases, eucalyptus forms a dense stand with a closed canopy. Stand structure for this habitat may vary considerably because most eucalyptus have been planted into either rows for wind protection or dense groves for hardwood production and harvesting. Eucalyptus is often found in monotypic stands. The genus is composed of over 150 species with high morphological diversity. Thus, habitat structure may be affected if more than two or three species coexist. Tree size may vary considerably depending on spacing and species. Typically, trees may range in height from 26 to 40 m (87 to 133 ft.) and have diameters (dbh) of 21.8 to 38.4 cm (8.6 to 15.1 in), with most growth occurring in the first 15 years. Trees in excess of 46 to 80 m (152 to 264 ft.) are not uncommon.

Valley Foothill Riparian Habitat

The fragmented and consolidated riparian habitat (28.17 acres or 3.5%) is most concentrated on the project site along the fringe of the San Joaquin River. For the purpose of this study, the habitat was characterized by fragmented stands of various types of shrubs with isolated oak, willow and cottonwood trees. The shrub layer is sparse, fragmented and when present consists primarily of buckbrush (Ceanothus cuneatus) and poison oak (Toxicodendron diversilobum). The understory of trees is dominated by many of the same species as described above for annual grassland. Other characteristic forbs include various wildflowers such as brodiaeias (Brodiaea spp.), clovers (Trifolium spp.), and popcorn flowers (Plagiobothrys spp.).

Riparian habitat provides nesting, foraging, and resting habitat for many species. The acorn crops from oak trees are important food sources for a variety of birds and mammals. Snags (standing dead trees) are common on the project site and provide nesting opportunities for cavity-nesting birds such as acorn woodpecker (Melanerpes formicivorus) and northern flicker (Colaptes auratus); however, neither of these species was observed on site. For some species, all of their life requirements are met in the riparian and oak woodland; other species nest in the wooded habitat and forage in the annual grasslands.

Sensitive Natural Communities

A sensitive community has particularly high ecological value or functions. Sensitive communities are considered important because their degradation or destruction could threaten populations of dependent plant and wildlife species and significantly reduce the regional distribution and viability of the community. As the number and extent of sensitive communities continue to diminish, the endangerment status of dependent special-status (i.e., rare, threatened, or endangered) species could become more precarious, and populations of currently stable species (i.e., non-special-status species) could become rare. Loss of sensitive communities can also eliminate or reduce important ecosystem functions, such as water filtration by wetlands and bank stabilization by riparian forests.

Sensitive natural communities occurring at the project site include the fringe of the riparian habitat associated with the reach of the San Joaquin River on the southern border of the site. There were several areas identified on the property associated with seasonal/perennial wetlands. The river and numerous swales and seasonal wetland areas meet the criteria to be considered jurisdictional waters of the United States.

Riverine

Riverine Habitat (46.55 acres or 5.8%) are typically associated with intermittent or continually running rivers and streams. In this case riverine habitat exists within the river channel, where the flow is largely regulated upstream at Friant Dam.

A stream originates at some elevated source, such as a spring or lake, and flows downward at a rate relative to slope or gradient and the volume of surface runoff or discharge. Velocity generally declines at progressively flatter slopes and lower altitudes, and the volume of water increases until the enlarged stream finally becomes sluggish. Over this transition from a rapid, surging stream to a slow, sluggish river, water temperature and turbidity will tend to increase, dissolved oxygen will decrease and the bottom will change from rocky to muddy.

Lacustrine

Lacustrine habitats are inland depressions or dammed riverine channels containing standing water. In this report the lacustrine habitat is segmented into two types of descriptors: 1) referred to as Lake (112.51 acres or 14.1%); and, 2) Freshwater Pond (105.48 acres or 13.2%). The Lake designator is is used herein where a breach has occurred between a gravel pit pond and the river, allowing river flow through the impoundment. Some of the lacustrine features at the site are open to the flow of the river in an upstream and downstream configuration. It is important to note that the bodies of water identified as "lakes" will need to be isolated from the river channel as a result of the San Joaquin River Restoration Plan (SJRRP); therefore, the lake designation merely represents an existing condition that may change as a result of implementation of the SJRRP. The Freshwater Ponds have no direct surface water connection to the San Joaquin River and derive water from riverine infiltration or recharge, stormwater runoff, or occasionally by physically pumping/transferring water. They may vary from small ponds less than one hectare to large areas covering several square kilometers. Depth can vary from a few centimeters to hundreds of meters.

Typical lacustrine habitats include permanently flooded lakes and reservoirs (e.g., Millerton Lake), intermittent lakes (e.g., playa lakes) and ponds (including vernal pools) so shallow that rooted plants can grow over the bottom. Most permanent lacustrine systems support fish life; intermittent types usually do not.

Freshwater Forested/Shrub Wetland Habitat

The Freshwater Forested/Shrub Wetland (36.70 acres or 4.6%) habitat consists primarily of riparian and riverine habitat on the project site directly supported by the San Joaquin River. Riparian areas at the project site support a sparse flora consistent with that of seasonal/perennial wetlands.

This habitat classification was assigned to the landscape and/or vegetation feature that is usually supported and associated with a perennial water source and typically located in a

topographic drainage. Where water ponds or flows because of limitations to surface or subsurface drainage the riparian vegetation community is improved. Subsurface hydrological conditions can be enhanced by the topography of the drainage giving support to a variety of vegetative species that require a longer, more sustained hydro-period. Soil layers impervious to the downward infiltration of water inhibit subsurface drainage resulting in shallow saturation during the wet season. Perennial and seasonal waters and wetlands support distinct vegetation adapted to periodic or continuous inundation during the wet season, and the absence of either ponded water or wet soil during the dry season.

Freshwater Emergent Wetland

Freshwater Emergent Wetlands (40.92 acres or 5.1%) are located throughout the site primarily associated with the freshwater ponds that are not directly connected to the San Joaquin River.

According to Department of Fish and Game's Wildlife Habitat Relation definitions, Fresh Emergent Wetlands are characterized by erect, rooted herbaceous hydrophytes. Dominant vegetation is generally perennial monocots to 2m (6.6 ft.) tall. All emergent wetlands are flooded frequently, enough so that the roots of the vegetation prosper in an anaerobic environment. The vegetation may vary in size from small clumps to vast areas covering several kilometers. The acreage of Fresh Emergent Wetlands in California has decreased dramatically since the turn of the century due to drainage and conversion to other uses, primarily agriculture.

Evaluation of Major Natural Communities

Disturbed Grassland

FIGURE 35: DISTURBED GRASSLAND WITH INVASIVE STAR THISTLE, SYCAMORE ISLAND

The term "disturbed grassland" refers to areas periodically impacted by unnatural disturbance regimes (i.e., mechanical or chemical de-vegetation, off-road vehicles, etc.). Disturbed grassland areas encompass approximately 30.6% of the site. Such areas are periodically disturbed from recreational usage, on- and off- road vehicles accessing the river and the freshwater water features, past gravel mining, or other impacting uses. Generally the only plants occurring in such areas are "weedy" or ruderal species such as Ripgut brome (Bromus diandrus), Tarplant (Holocarpha hermannii), Medusa-head grass (Taeniatherum caputmedusae), Doveweed (Eremocarpus setigerus),

Annual bluegrass (Poa annua), etc. With the exception of Doveweed and Tarplant, these species are classified as non-native or exotic species.

Disturbed grassland habitats can provide limited cover and foraging habitat for various terrestrial vertebrate and avian species. Raptors such as American kestrels (Falco sparvarius), Sharpshinned hawks (Accipiter striatus) and Red-tailed hawks (Buteo jamaicensis) could potentially use the disturbed grassland habitats as foraging sites, specifically those areas adjacent to riparian or oak woodlands. Birds such Mourning dove (Zenaida macroura), Western meadowlark (Sturnella neglecta), Western bluebird (Sialia mexicana) and Savannah sparrows (Passerculus sandwichensis) could somewhat forage within this habitat type. In addition to the avian species associated with the project area, mammals potentially occurring within the disturbed grassland habitats include Western gray squirrels (Sciurus griseus), Black-tailed deer (Odocoileus hemionus columbianus) and Coyotes (Canis latrans). Like the floral species, the disturbance associated with this habitat does somewhat degrade the habitat's value (i.e., importance, desirability, benefit, etc.) to most native wildlife species.

Riparian/Riverine/Wetland Habitats

Wetland, riparian, and riverine habitats support a diversity of wildlife species. The riparian habitat series provides cover and nesting habitat for bird species such as Morning dove, California quail (Callipepla californica), Western meadowlark, and Western bluebird. A variety of birds, including American crows (Corvus brachyrhynchos), European starlings (Sturnus vulgaris), Scrub jays (Aphelocoma coerulescens), Brewer's blackbirds (Euphagus cyanocephalus) and House finches (Carpodacus mexicanus) could potentially forage, roost, and/or nest within this series. Raptors such as American kestrels, Osprey (Pandion haliaetus), Sharpshinned hawks, and Red-tailed hawks could potentially forage, roost, and/or nest within the riparian oak woodland areas. Small mammals occurring within the riparian series include Western gray squirrels, Black-tailed hare (Lepus californicus), Raccoons (Procyon lotor), Black-tailed Deer and American beaver. Mammalian predators such as Coyotes (Canis latrans) and feral dogs (Canis sp.) are attracted to such habitats by the small mammals that potentially occur in them.

FIGURE 36: INTACT NATIVE RIVERINE AND RIPARIAN HABITAT, VAN BUREN UNIT

Disturbance associated with the past and present land practices, including gravel mining, the placement of rock armored erosion control, and drainage culverts collecting runoff appear to

have impacted the riparian/riverine series; therefore, the habitat value rating would be lower for the project area's native wildlife species as compared to an undisturbed native riparian and river system. However, the reclamation of the previous mining activities continues to contribute to the health of the location's habitat by providing several trophic levels for biological diversity.

Drainages and Seasonal Wetlands

The drainages and seasonal wetlands (wetlands) are dominated by "hydrophytic vegetation" or vegetation that is typically adapted for life in saturated soil conditions. Wetlands in the project area were dominated by Rabbitsfoot grass (Polypogon monspeliensis), Cattails (Typha latifolia), Spikerush (Eleocharis macrostachya), Annual bluegrass (Poa annua) and Curly dock (Rumex crispus).

FIGURE 37: WETLANDS CREATED FROM A RESTORED GRAVEL PIT, VAN BUREN UNIT

Wetland habitats can offer cover and foraging habitat for various terrestrial vertebrate and avian species. Raptors such as American kestrels, Red-shouldered hawks, Red-tailed hawks, and Osprey could potentially forage within these wetland habitats, specifically the seasonal wetland areas. In addition, birds such as Mourning doves, Western meadowlarks, and Western bluebirds could potentially occur within the project area's wetlands. In addition, various small mammals including Black-tailed hare and Western gray squirrels could inhabit wetlands associated with the project area. Other small mammals likely to use wetland vegetation as shelter/cover include the Deer mouse (Peromyscus maniculatus) and California vole (Microtus californicus). Unlike the floral species, disturbance associated with the past and existing land practices does not appear to impact the wetlands with regard to wildlife. Therefore, this habitat would most likely possess a higher value rating for the project area's native wildlife species.

Listed Species

The following discussion describes the plant and wildlife species that have been afforded special recognition by federal, state, or local resource agencies or organizations. Special-status species are of relatively limited distribution and may require specialized habitat conditions. Special status species are defined as species that are:

- legally protected under the California and Federal Endangered Species Acts or under other regulations;
- considered sufficiently rare by the scientific community to qualify for such listing; or
- considered sensitive because they are unique, declining regionally or locally, or at the extent of their natural range.

Elderberry plants at various stages of life cycle development are on the project site as either individual plants or in a community setting along the riparian corridor and within the upland communities.

Special status habitats identified in the general area include Great Valley Mixed Riparian Forest, Northern Claypan Vernal Pool, Northern Hardpan Vernal Pool, and Sycamore Woodland. There are no vernal pools, vernal complexes or vernal pool habitats located on the site. There are no claypan or hardpan areas on the site, as it lies within the soils deposited on the floodplain by the San Joaquin River.

Reconnaissance level surveys have been performed for special status habitat type, plant and wildlife species on the project site. A list of special species was generated from the California Natural Diversity Database (CNDDB), United State Fish and Wildlife Service (USFWS), and California Native Plant Society (CNPS) databases using the surrounding nine quads as the basis for identification. Of the 37 special-status species that were originally considered in this analysis, 15 species were excluded from the analysis due to a variety of conditions. The first condition considered was the age of the element sighting. Species were excluded from likely utilizing the site if the species element date was over 50 years old. Many of the archived sightings were from the early 1900s. In addition to the age of the sighting, some species are not likely to utilize the locations due to the lack of suitable habitat; the project site is out of their known range; they were not detected during site surveys; or they were otherwise considered unlikely to occur at the project site based on the disturbed or altered habitats present at the site, or the confirmed presence of multiple predatory species occurring in the required habitat for the species to exist.

TABLE 2 - FEDERAL, STATE, CNPS SENSITIVE SPECIES NINE QUAD LIST							
Scientific Name	**Common Name**	**Federal Listing**	**State Listing**	**Global Ranking**	**State Ranking**	**CNPS Ranking**	**Suitable Site Conditions**
Agelaius tricolor	Tricolored blackbird	None	None	G2G3	S2		Yes
Ambystoma californiense	California tiger salamander	Threatened	Threatened	G2G3	S2S3		No[1,2]
Antrozous pallidus	Pallid bat	None	None	G5	S3		No[1]
Athene cunicularia	Burrowing owl	None	None	G4	S2		Yes
Branchinecta lynchi	Vernal pool fairy shrimp	Threatened	None	G3	S2S3		No[2]
Branchinecta mesovallensis	Midvalley fairy shrimp	None	None	G2	S2		No[2]
Castilleja campestris ssp. succulenta	Succulent owl's-clover	Threatened	Endangered	G4?T2	S2.2	1B.2	No[2]
Caulanthus californicus	California jewel-flower	Endangered	Endangered	G1	S1.1	1B.1	No[1,2]
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	Candidate	Endangered	G5T3Q	S1		No[1]
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	Threatened	None	G3T2	S2		Yes
Dipodomys nitratoides exilis	Fresno kangaroo rat	Endangered	Endangered	G3T1	S1		No[2]
Downingia pusilla	Dwarf downingia	None	None	G3	S3.1	2.2	No[2]
Efferia antiochi	Antioch efferian robberfly	None	None	G1G3	S1S3		No[1]

[1] Species has not recently utilized location due to the age of element sighting being at least over 50 years old; some nearly 100 years old. Habitat may exist but the species may not preferentially select the habitat or location.

[2] Species not likely to utilize location due to lack of suitable habitat; the project site is out of their known range; they were not detected during site surveys; or they were otherwise considered unlikely to occur at the project site based on the disturbed or altered habitats present at the site or the confirmed presence of multiple predatory species occurring in the required habitat for the species to exist.

TABLE 2 - FEDERAL, STATE, CNPS SENSITIVE SPECIES NINE QUAD LIST							
Scientific Name	**Common Name**	**Federal Listing**	**State Listing**	**Global Ranking**	**State Ranking**	**CNPS Ranking**	**Suitable Site Conditions**
Emys marmorata	Western pond turtle	None	None	G3G4	S3		Yes
Eremophila alpestris actia	California horned lark	None	None	G5T3Q	S3		Yes
Eryngium spinosepalum	Spiny-sepaled button-celery	None	None	G2	S2.2	1B.2	No[1,2]
Euderma maculatum	Spotted bat	None	None	G4	S2S3		No[2]
Eumops perotis californicus	Western mastiff bat	None	None	G5T4	S3?		No[2]
Falco mexicanus	Prairie falcon	None	None	G5	S3		Yes
Great Valley Mixed Riparian Forest	Great Valley Mixed Riparian Forest	None	None	G2	S2.2		Yes
Imperata brevifolia	California satintail	None	None	G2	S2.1	2.1	Yes
Lasiurus cinereus	Hoary bat	None	None	G5	S4?		Yes
Leptosiphon serrulatus	Madera leptosiphon	None	None	G1?	S1?	1B.2	No[1]
Linderiella occidentalis	California linderiella	None	None	G3	S2S3		No[2]
Lytta moesta	Moestan blister beetle	None	None	G2	S2		No[1]
Lytta molesta	Molestan blister beetle	None	None	G2	S2		No[1]
Metapogon hurdi	Hurd's metapogon robberfly	None	None	G1G3	S1S3		Yes
Mylopharodon conocephalus	Hardhead	None	None	G3	S3		Yes
Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	None	None	G1	S1.1		No[2]

TABLE 2 - FEDERAL, STATE, CNPS SENSITIVE SPECIES NINE QUAD LIST							
Scientific Name	**Common Name**	**Federal Listing**	**State Listing**	**Global Ranking**	**State Ranking**	**CNPS Ranking**	**Suitable Site Conditions**
Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	None	None	G3	S3.1		No[2]
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Threatened	Endangered	G2	S2.1	1B.1	No[1,2]
Orcuttia pilosa	Hairy Orcutt grass	Endangered	Endangered	G2	S2.1	1B.1	No[1,2]
Perognathus inornatus inornatus	San Joaquin pocket mouse	None	None	G4T2T3	S2S3		Yes
Pseudobahia bahiifolia	Hartweg's golden sunburst	Endangered	Endangered	G2	S2.1	1B.1	No[2]
Sagittaria sanfordii	Sanford's arrowhead	None	None	G3	S3.2	1B.2	No[1]
Spea hammondii	Western spadefoot	None	None	G3	S3		Yes
Sycamore Alluvial Woodland	Sycamore Alluvial Woodland	None	None	G1	S1.1		Yes
Taxidea taxus	American badger	None	None	G5	S4		Yes
Tropidocarpum capparideum	Caper-fruited tropidocarpum	None	None	G1	S1.1	1B.1	No[1]
Tuctoria greenei	Greene's tuctoria	Endangered	Rare	G2	S2.2	1B.1	No[1,2]
Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened	G4T2T3	S2S3		Yes

Special-Status Plant Species

Although the CNDDB, USFWS, and CNPS search did not show any records of special-status plant species occurring at the project site, one of the twelve plant species located in a nine USGS quadrangle search is considered to have potential to occur at the project site. That species is the California satintail *(Imperata brevifolia)*, which is described below. Succulent owl's Clover (*Castilleja campestris ssp. Succulent*); California jewel flower (*Caulanthus californicus*), Dwarf Downingia (*Downigia pusilla*), Spiny-sepaled button-celery (*Eryngium spinosepalum*), Madera leptosiphon (*Leptosiphon serrulatus*), San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*), Hairy Orcutt grass (*Orcuttia pilosa*), Hartweg's golden sunburst (*Psuedobahia bahiifolia*), Sanford's arrowhead (*Sagittaria sanfordii*) and/or Greene's tuctoria (*Tuctoria greeni*) are not likely to occur at the site nor would they likely survive if inoculated at the location due primarily to habitat needs that include a vernal landscape with "mima" mounds or heavy clay soils. Both of these types of habitat conditions are absent from the location.

To date, surveys for special-status plant species have been performed for the species during the "prime" identification periods. None of the species were found or identified during the site visits due in part to the project site lacking suitable habitat; the project site is out of the species known range; or they were otherwise considered unlikely to occur at the project site based on the habitats present at the site.

California Satintail

California Satintail (Imperata brevifolia), a monocot, is a perennial herb that is native to California and is also found outside of California, but is confined to western North America. California Satintail is also classified by the California Department of Food and Agriculture as a Noxious Weed List B: Control required in nurseries, control elsewhere at the discretion of local County Agricultural Commissioner. It is included in the CNPS Inventory of Rare and Endangered Plants as a list 2.1 (rare, threatened, or endangered in California; common elsewhere) species. The species is confined to Chaparral, Coastal Sage Scrub, Creosote Bush Scrub, wetland-riparian communities. It is also equally likely to occur in wetlands or non-wetlands at an elevation of between 0 and 1,640 feet. Since it is considered a Noxious Weed it is not recommended at this time to introduce it into the project area during any habitat restoration activities.

Blue Elderberry

The surveys located numerous individual and clustered Blue elderberry plants that meet the criteria for VELB habitat due to their size (stems greater than 1 in. diameter measured at the base), locations in non-upland habitat, and the community

FIGURE 38: RIVERINE HABITAT WITH BLUE ELDERBERRY, VAN BUREN UNIT

assemblages of multiple plants. The plant serves as the host species for the Valley Longhorn Beetle. Protocol level VELB surveys have not been completed to date. Nonetheless, random plants were inspected and no evidence (i.e. exit holes) of use by the beetle was observed.

Throughout much of its range, the blue elderberry naturally occurs at low population densities in riparian habitat. This species, however, commonly occurs in interior live oak and mixed oak woodlands, chaparral and foothill riparian of the Sierra foothills. Favored locations include dry rocky outcroppings of granite where large bushes are often observed growing out of large cracks in the rock. Although this species grows well on dry exposed foothill slopes and rocky road shoulders, it particularly favors well-watered spots where it can grow rapidly (up to 6 feet in a single year) into small trees.

The blue elderberry appears to be a fire-adapted species that stump sprouts after fire or other disturbance and grows to maturity within 20 to 30 years and then begins to die back as other foothill shrubs and trees mature. Elderberry plants do not appear to be particularly tolerant of overcrowding and shade.

Special-Status Wildlife Species

Eleven special-status wildlife species were considered to have potential to occur at the project site. All of the species have a relative potential for occurring within the project site because of the site's suitable habitat; the project site is in their known range; they were detected during site or nearby location surveys; or they were otherwise considered to occur at the project site. The species assessed include the Tricolored blackbird (*Agelaius tricolor*), Burrowing owl (*Athene cunicularia*), Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), western pond turtle (both northwestern pond turtle [*Clemmys marmorata pallida*] and southwestern pond turtle [*Clemmys marmorata marmorata*] sub-species), California horned lark (*Eremophila alpestris actia*), Prairie falcon (*Falco mexicanus*), Hoary bat (*Lasiurus cinereus*), Hardhead (*Mylopharodon conocephalus*), San Joaquin pocket mouse (*Perognathus inornatus inornatus*), Western spadefoot (*Spea hammondii*), American Badger (*Taxidea taxus*), and San Joaquin kit fox (*Vulpes macrtis mutica*). When considering the habitat requirements of the species in conjunction with the species mobility, migratory, foraging, and breeding needs, the list of species that have an enhanced opportunity to establish on the site property, if given assistance by inoculation, habitat refinement or modification, reduces to the Western Pond turtle by inoculation into the lakes and ponds, Hoary bat by placement of bat boxes, and Western spadefoot by inoculation into ephemeral freshwater ponds. The other species; Tricolored blackbird, Burrowing owl, California horned lark, Prairie falcon, Hardhead, San Joaquin pocket mouse, American badger, and San Joaquin kit fox are very mobile and may or may not use the project habitats depending on species preference and site selection.

The VELB has ample opportunity to utilize the site and is currently within a non-site-specific polygon in the CNDDB that includes the northeastern portion of the project. The element occurrence consisting of a single female was originally dated in 1987 by a DFG biologist 1992 along Highway 41 north of Lanes Bridge and west of the San Joaquin River in the riparian strip between an old turf farm and the river. An additional survey in March 1992 identified 35 potential habitat sites with eight confirmed exit holes. The element occurrence was again updated in June 1999. Additional protocol level surveys may locate the VELB species as the habitat requirements are currently available at the site for utilization. The VELB is further described below.

Valley Elderberry Longhorn Beetle

FIGURE 39: POTENTIAL VELB HABITAT WITHIN THE VAN BUREN UNIT

The Valley elderberry longhorn beetle (Desmocerus californicus dimorphus), was listed as a threatened species on August 8, 1980 (Federal Register 45: 52803-52807) and proposed for delisting by the FWS in February 2007 following a review of the species. This animal is fully protected under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). The VELB is completely dependent on its host plant, elderberry (Sambucus sp.), which is a common component of the remaining riparian forests and adjacent upland habitats of California's Central Valley. Use of the elderberry by the VELB, a wood borer, is rarely apparent. Frequently, the only exterior evidence of the elderberry's use by the VELB is an exit hole created by the larva just prior to the pupal stage. The life cycle takes one or two years to complete. The animal spends most of its life in the larval stage, living within the stems of an elderberry plant. Adult emergence is from late March through June, about the same time the elderberry produces flowers. The adult stage is short-lived. According to the USFWS, VELB habitat is primarily in communities of clustered Elderberry plants located within riparian habitat. The USFWS stated that VELB habitat does not include every Elderberry plant in the Central Valley such as isolated, individual plants, plants with stems that are less than one inch is basal diameter or plants located in upland habitat.

Overall Habitat Value

Portions of the site are separated by fences; the fencing is not considered a restrictive boundary for wildlife migration along the river or riparian corridor. The sites' use as wildlife foraging, or refugia habitat is considered moderate. The habitats are conducive to use by wildlife but the biological value is lowered somewhat due to disturbance and the existing and surrounding development. The observed species appear to be acclimating to human intrusion and activity. The winter and spring river flows can result in a temporary barrier for some terrestrial species.

There are several recognizable jurisdictional waters and wetlands located around the site. Some of these are from natural conditions (e.g. the river channel) and some are the result of manipulation by previous reclamation activities (e.g. freshwater ponds). The dominant habitat types of the project area are characterized as Valley Riparian and disturbed Annual Grassland.

Native flora was represented in the disturbed grassland and riparian habitat; however, there is a widespread influence from non-native noxious species such as Scarlet wisteria, Tobacco tree, Giant reed, and Yellow-star thistle.

The Sycamore Island site is currently utilized for fishing and river access, and recreational use. There are several areas that have been impacted by the parking of vehicles, improved and non-improved access roads,

and recreational usage along the river. The function and value of the remaining habitat types was also somewhat reduced due to the direct impacts from these activities.

FIGURE 40: SCARLET WISTERIA CROWDS RIVERINE HABITAT, SYCAMORE ISLAND

OPPORTUNITIES AND CONSTRAINTS

Opportunities and constraints have been distilled from the existing characteristics analysis. Issue areas include wildlife and aquatic habitat, access and site views, circulation and recreation, and environmental interpretation. In order to provide a basis for recommendations within the Master Plan, potential approaches in dealing with the opportunities and constraints are presented to create a starting point in creating the Master Plan. After the compilation of the existing characteristics analysis, meetings were held with concerned agencies and the general public to gain additional opportunities and constraints.

Agency and Nonprofit Comment

On May 25, 2011, Madera County Planning department staff met with various local, State, and Federal agencies to discuss the findings of the existing characteristics analysis and present opportunities and constraints. Attendees included representatives from the California Department of Water Resources, Department of Fish and Game, and State Parks, U.S. Bureau of Reclamation, County of Fresno, and the San Joaquin River Conservancy. Nonprofit groups in attendance included the San Joaquin River Parkway and Conservation Trust and RiverTree Volunteers. Comments received included the following:

- Explore trail access north into Madera County to Children's Hospital and proposed development beyond.
- Further address endangered species within the environmental review, including the potential occurrence of California tiger salamander, giant garter snake, and Swainson's hawk.
- Limiting vehicular access in sensitive habitat areas is widely supported.
- Elaborate on the need to connect levees for circulation purposes.
- Provide information on the San Joaquin River Parkway and Conservation Trust's trail access and bridge studies in the area.
- Begin dialogue with the developer of Gunner Ranch to explore trail connections and other options.
- Provide a multiuse trail corridor through the Van Buren Unit that may connect to Sycamore Island and/or a multiuse trail on the Fresno side of the river.

Public Comment

On May 26, 2011, a public workshop was held at Children's Hospital to present the existing characteristics analysis and opportunities and constraints for River West-Madera. Approximately 30 people were in attendance. Staff presented a PowerPoint presentation, followed by a question and answer period, and a comment time was allotted for attendees to submit comments on opportunity and constraint posters. Most prevalent was comment regarding public safety and enforcement issues. An opportunity commonly identified included the provision of security fencing to deter illegal activity. The potential for wildfires in the project area were noted as a constraint; therefore, fire breaks were noted as a potential approach to protect surrounding private property. Due to common reports of poaching, off road vehicle use, and other illegal activity, surrounding property owners were outspoken regarding the need for the increased presence of law enforcement personnel.

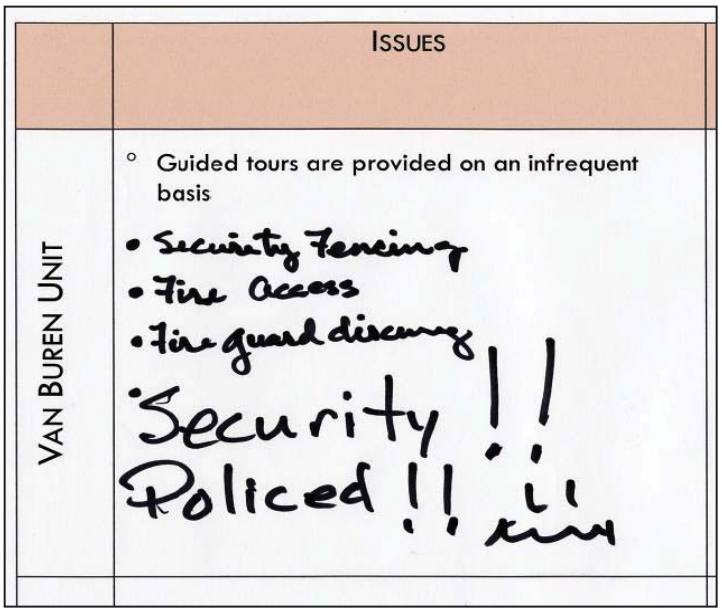


FIGURE 41: PUBLIC COMMENT REGARDING PUBLIC SAFETY AND ENFORCEMENT ISSUES

Opportunity and Constraint Tables

❖ Natural Environment

	Conditions	Opportunities	Constraints	Potential Approaches
Sycamore Island	◦ The site involves a wide array of wildlife and aquatic habitats ◦ Invasive species have heavily impacted several habitats ◦ The River Restoration Program may significantly alter the existing condition of habitats associated with the North Channel, "lakes", and the river channel	◦ Connect habitats disconnected by unnecessary roads ◦ Maintain one mile of preserved native river channel ◦ Maintain North Channel as valuable freshwater forested/shrub wetland habitat ◦ Maintain valuable waterfowl habitat in reclaimed ponds ◦ Maintain existing freshwater fishing habitat within ponds onsite ◦ Allow for the continued passive restoration of former gravel pits onsite ◦ Two riffle areas in the river channel have the potential for salmon spawning* ◦ Remove invasive species in critical areas to allow for improved functionality of the habitats	◦ Established and restored habitats fragmented by multiple access roads ◦ Widespread established presence of highly invasive scarlet wisteria in river channel and many ponds ◦ Large portions of river channel may be heavily impacted (in terms of ability to support cold water habitat for salmon) by in-river gravel mining ◦ Northern ponds somewhat dependent upon pump operated siphon ◦ North Channel cut off from perennial river flows ◦ Riffle areas may be altered by the River Restoration Program*	◦ Coordinate with appropriate agencies for removal of scarlet wisteria onsite and upstream ◦ Coordinate with appropriate agencies to evaluate the long term use of the northern ponds ◦ Eliminate or restrict unnecessary roads to encourage the conjoining of contiguous habitat areas ◦ Ensure that River Restoration efforts include perennial flows to the North Channel* ◦ Work with the appropriate agencies to isolate ponds and ensure hydraulic connections to the river ◦ Avoid recreational access and associated improvements in previously un-impacted areas
Van Buren Unit	◦ The site provides a diverse mix of habitats ◦ Several "native" habitat areas remain onsite, despite historical gravel mining ◦ Gravel mining restoration has been successful where former pits have been converted to extensive wetland areas ◦ At least two nesting raptor sites have been identified onsite ◦ Protected Valley Elderberry Longhorn Beetle habitat (federally protected) exists on eastern portion of the site	◦ Maintain existing intact native and sensitive habitats ◦ Allow for the continued restoration of former gravel pits onsite ◦ Preserve and avoid existing raptor nesting sites ◦ Maintain 2/3 mile of preserved native river channel ◦ One extensive riffle area in the river channel has the potential for salmon spawning*	◦ Erosion developing near eastern access, threatening the stability of the eastern access road abutting the river bank ◦ Established presence of highly invasive scarlet wisteria in river channel and all ponds ◦ Existing road from eastern access abuts protected elderberry bushes ◦ Existing roads adjacent to established osprey nesting site ◦ Portions of river channel heavily impacted by in-river gravel mining	◦ Eliminate unnecessary roads that encroach into sensitive habitat areas ◦ Provide signage adjacent to raptor nesting sites that advises the public against disruptive behavior. ◦ Eliminate, reroute, or temporarily close roads and trails adjacent to nesting raptor sites ◦ Focus scarlet wisteria removal efforts on restored ponds, as these habitats are least impacted by scarlet wisteria within the Van Buren Unit ◦ Work with the appropriate agencies to isolate ponds and ensure hydraulic connections through the berms to the river to equalize erosive forces ◦ Avoid recreational development and other improvements in previously un-impacted areas

Notes:
*Involves elements of the San Joaquin River Restoration Program

❖ Access

	Conditions	Opportunities	Constraints	Potential Approaches
Sycamore Island	◦ Site access is remote and not adjacent to a major population center ◦ Several poaching, off road vehicle use, and other violations have been reported to stem from unmanaged public use near Palm Ave. and Nees Ave. in the City of Fresno ◦ Future development proposed to the north of the project site in Madera County will need a means of accessing the site	◦ Visible access from major roads, opportunity for increased and/or improved signage ◦ Potential trail connection on existing or future pedestrian bridge to Fresno County from former gravel haul roads ◦ Existing access road from Avenue 7 ½ is restricted to one lane, which may help to calm traffic entering the site	◦ Site may be difficult to locate ◦ An unmanaged dirt road access near the intersection of Palm Ave. and Nees Ave. poses security issues ◦ Existing roads do not have a bridge to River West-Fresno ◦ Existing access road from Avenue 7 ½ is restricted to one lane and poses emergency access problems ◦ Any future bridge connections to Fresno County may be disrupted by San Joaquin River Restoration Plan implementation.	◦ Provide attractive directional signage from access roads (Avenue 9 and Road 40, Avenue 7 ½) ◦ Coordinate with the City of Fresno to limit access from Palm Ave. and Nees Ave. to the river ◦ Work with the appropriate agencies to evaluate the potential for trail access across the river to Fresno County ◦ Explore options to provide for emergency access to the site, including widening the existing access road, providing pullouts, and/or exploring multiple access points ◦ Provide traffic calming devices in areas conducive to speeding ◦ Repair berm to reconnect Sycamore Island and the Van Buren Unit for secondary and management access and egress

❖ Access

	Conditions	Opportunities	Constraints	Potential Approaches
Van Buren Unit	◦ Existing road and parking easements allow access to the eastern edge of the site ◦ A locked gate keeps vehicles from entering the site ◦ Southeastern corner of proposed Gunner West Specific Plan abuts site. The Specific Plan includes a proposal for a bluff top trail abutting the Van Buren Unit	◦ Opportunity for improved parking and trailhead area near existing eastern access or in the interior of the site where mining operation facilities were located ◦ Eastern access visible from Highway 41 ◦ Opportunity for a small park and/or a viewpoint on southeastern corner of the proposed Gunner Ranch West development ◦ Opportunity for public access for pedestrians and cyclists to Children's Hospital, the proposed Gunner Ranch Specific Plan area, and other future development to the north ◦ An improved trailhead and managed public access and recreation will increase the onsite public presence and help to deter illegal off road activity ◦ Potential trail connection/bridge to River-West Fresno proposed by San Joaquin River Conservation and Parkway Trust adjacent to easternmost pond	◦ Steep bluffs (80% grade) limit access to site from southeast corner of proposed Gunner West Ranch development ◦ Existing eastern access and path on the eastern portion of the site may be constrained due to the presence along the river of Valley Elderberry Longhorn Beetle habitat (federally protected) ◦ Without fencing or barricades, vehicles illegally circumvent the eastern access via abutting farmland ◦ Osprey nest located near potential parking area within the interior of the site where mining operation facilities were located ◦ Potential trail connection/bridge to River-West Fresno proposed by San Joaquin River Conservation and Trust may involve disruption of native riverine and riparian habitat	◦ Site a trailhead near existing eastern access to the site; locate improvements north of the existing path, away from Valley Elderberry Longhorn Beetle habitat ◦ Evaluate avoidance techniques and potential placement of trailhead within the interior of the site where mining operation facilities were located ◦ Provide signage on adjacent routes (Highway 41, Rio Mesa Blvd.) to indicate location of eastern access to the site ◦ Incorporate viewpoint and/or a small park into southeast corner of Gunner Ranch West Specific Plan ◦ Pursue public access for pedestrians and cyclists from Avenue 9/Rio Mesa Blvd. north to Children's Hospital and beyond. ◦ Pursue public access for pedestrians and cyclists from the northern termination of the bluffs to the bluff-top trail as proposed within the Gunner West Ranch Specific Plan. ◦ Evaluate potential for bridge crossing as conceptualized in the Parkway Master Plan, to connect trails from the project to trails on the Fresno side. ◦ Include fencing barriers in public access improvements to preclude off-hours trespass

❖ Recreation

	Conditions	Opportunities	Constraints	Potential Approaches
Sycamore Island	◦ Previous mining operations established a wide network of compact dirt roads ◦ Many roads have been disconnected via levee breaks and a temporary siphon ◦ At least two areas are established for intensive public use, including picnic areas and parking ◦ The site is commonly used for recreational fishing	◦ Continue to utilize established high-impact picnic and parking areas at existing use levels ◦ Balance need for undisturbed waterfowl habitat with ponds utilized for recreational fishing ◦ Maintain improved small boat ramp to river channel ◦ Maintain existing small boat ramps to various ponds ◦ Extensive path system available for bicycles and hiking ◦ Opportunity to improve compromised culvert and erosion problems at the crossing of the North Channel south of bait and tackle shop ◦ Repair levee breaks in order to provide circulation to the Van Buren Unit and around ponds onsite ◦ To promote recreational fishing within the interior ponds, ensure increased flows in the North Channel to augment water supply	◦ Roads provide limited continuous connections throughout the site ◦ Picnic area located within a eucalyptus grove poses safety concerns during wind events and detracts from native habitat ◦ Use of recreational vehicles on paths adjacent to river channel have potential to disturb sensitive habitat ◦ The existing culvert across the North Channel is compromised due to inadequate size and erosion	◦ Work with the appropriate agencies to isolated ponds from the river channel and connect paths ◦ Maintain use of ponds for recreational fishing ◦ Develop a plan for the replacement of the eucalyptus grove surrounding the picnic area with native trees ◦ Restrict roads where the public may utilize motorized vehicles, especially near sensitive habitat areas ◦ Replace the existing culvert across the North Channel with a structure that safely conveys flows and provides for safe vehicle use ◦ Maintain high impact uses in previously impacted areas ◦ In coordination with the San Joaquin River Restoration Plan (SJRRP), ensure the restoration of flows to the North Channel and utilize the increased water supply to augment water levels within the interior ponds. Coordinate with SJRRP agencies to put the appropriate plans in place
Van Buren Unit	◦ Gravel mining restoration plans did not include a recreational aspect ◦ Existing recreational use is limited to guided tours and supervised stewardship activities ◦ Previous mining operations established a wide network of compacted dirt roads	◦ Maintain existing roads onsite for bicycling and hiking trails	◦ Road to Sycamore Island disconnected by levee break ◦ Existing roads may encroach into sensitive habitat areas	◦ Maintain existing roadways onsite for bicycling and hiking trails ◦ Consider the use of existing dead-end roadways for hiking and wildlife viewing only ◦ Trails to be maintained onsite should be designated for hiking, biking, and/or equestrian use ◦ Restrict the public's use of motorized vehicles onsite to parking areas at access points ◦ Establish a route onsite to pass through the site and connect to the greater San Joaquin River Parkway multi-use trail system

❖ Education

	Conditions	Opportunities	Constraints	Potential Approaches
Sycamore Island	◦ No improvements exist, including signage for interpretive education onsite ◦ No educational tours or programs are included in the concessionaire's services	◦ Existing and new access to viewpoints for waterfowl/bird watching ◦ Promote access to viewpoints of river sections with riffles and potential salmon spawning areas* ◦ Opportunity to witness different uses of former gravel pits and varied types of reuse ◦ Opportunities to educate the public about warm water versus cold water fisheries	-	◦ Develop a system of interpretative signage that portrays the varied biological and historical characteristics of the site ◦ Locate and develop viewing areas for waterfowl, river sections, and other important aspects where naturally available ◦ Provide shade structures and seating for small group activities
Van Buren Unit	◦ Guided tours are provided on an infrequent basis; stewardship programs are more frequent	◦ Opportunities for wildlife viewing from existing paths to restored gravel pits, native habitats, and preserved river channel ◦ Promote access to viewpoints of river sections with riffles and potential salmon spawning areas*	-	◦ Focus site improvements on wildlife viewing and other environmental interpretation opportunities ◦ Locate and develop viewing areas for waterfowl, river sections, and other important aspects where naturally available ◦ Provide shade structures and seating for small group activities

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Brady, Jon L. *Historic Property Survey for the River-West Madera Master Plan Project Madera County, California.* J & R Environmental Services. March 8, 2011

ESR, Inc. *River West-Madera Master Plan Biological Assessment.* March 26, 2011

Appendix B – Master Plan Design Process

DESIGN PROCESS

Step 1: Constraints Analysis

In order to generate accurate design alternatives, the site's constraints were analyzed to gain an understanding of where opportunities for improvements may exist. The design team began by review existing documentation relating to the site, including the following documents:

- San Joaquin River Parkway Master Plan
- Madera County General Plan
- Draft River West-Madera Phase I - Resource Assessment

Following document review, a site visit was performed over multiple days to visually assess information contained with the Resource Assessment document and to gain necessary information in preparing constraints maps of the site. The constraints maps divided the site into the two respective areas, the Van Buren Unit and Sycamore Island (See Constraints Maps, Exhibit C). The constraints maps provided a clear visual representation of the constraints as outlined within the Resource Assessment document.

Step 2: Design Visioning

Input to date from various agencies, the public, and development of the constraints analysis were utilized to draw out a vision, goals, and objectives for the design of River West-Madera. From the visioning language, various program elements were conceptualized. Program elements were then applied to the site in order to assess how different elements may best fit onto the site. Through the use of program element diagrams and draft concept plans, it was discovered that the program elements can vary dramatically according to the scale in which they can be applied to the site. For example, facility improvements can differ drastically in scale from group picnic areas (minimal use of infrastructure) to an interpretive center or and RV Park (potentially higher use and more extensive infrastructure requirements). Means of access and recreational opportunities also differ according to scale, including the length of access roads or the extent and type of trail networks incorporated throughout the site.

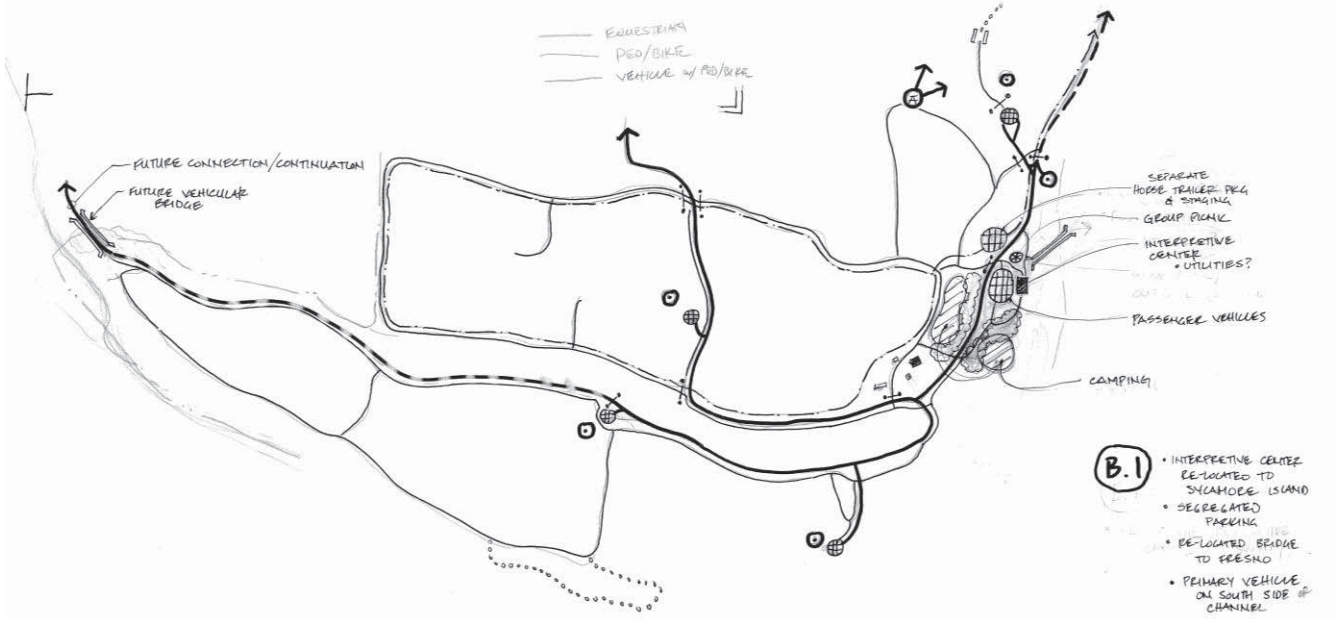

FIGURE 1: WORKING DIAGRAM OF PROGRAM ELEMENTS, SYCAMORE ISLAND

Step 3: Design Alternatives

Design alternatives were ultimately crafted into two separate alternatives, including a less intensive alternative (Option A) and a more intensive alternative (Option B).

Option A

The design for Option A provided a less intensive level of development that limited vehicular access to enhance the natural setting of the site. Public vehicle access was similar to Option B; however the roadway into the Van Buren Unit was limited to the entrance into the site and away from the eroding river bank. The trail system was largely based on using the existing trails to provide trails for hiking, biking and equestrian uses. A few new hiking trails provide additional access to the river and into areas with interesting environmental features. Option A included limited built amenities. This design provided restrooms at the parking areas, picnic areas, signage, interpretative panels and overlooks– otherwise, no new buildings were included with the concept.

Option B

The design for Option B involved a more intensive level of development that included additional amenities and expanded program elements. The primary goals of this concept were to provide a comprehensive system of recreation trails, continue the current fishing opportunities on the site, and provide additional recreation opportunities such as camping, and provide a regional educational resource. Vehicle access in this concept varied from Option A in two important ways: vehicles were brought further into the site to access new amenities, and the multi-use road that connects this project to points west ran along the south side of the North Channel on Sycamore Island. The roadway into the Van Buren unit was shifted further into the site and further away from the river. The number and type of parking is unchanged with this design. This concept provided more intensive amenities such as tent camping, RV camping, an interpretive center, and a park host facility. As with the less intensive option, the trail system was largely based on using the existing trails to provide trails for hiking, biking and equestrian uses. However, this option provides more new trails throughout the site.

Alternative Design Workshop

FIGURE 2: PROGRAM ELEMENT POSTER WITH INPUT FROM ATTENDEES

Once the two design alternatives were completed (Option A and Option B), a workshop was held December 8, 2011 at Children's Hospital in order to gain input from local, State, and federal agencies, along with the public. Attendees were introduced to the design process and the design alternatives created. Attendees were given red and green dots to be placed on maps of Option A and Option B, as well as a list of the program elements. Red dots represented a less desirable position and the green dots represented a more desirable position. Additional input was later gained from others via email and letters who were not able to attend the workshop.

In general, input received at the Alternative Design Workshop favored more of a mix of Options A and B, favoring a more intensive system of recreational paths onsite and a less intensive approach to facility improvements onsite.

Step 4: Preferred Design

A final design workshop was held February 15, 2012 at Children's Hospital to make final refinements to the design of the Master Plan. Feedback was solicited in particular on the need for primitive tent camping onsite. Input received was heavily opposed to camping due to management concerns, proximity to an urban area, and fire hazard concerns. The final design was amended to remove camping at Sycamore Island.

Appendix C – Master Plan Budget Scenario

MASTER PLAN BUDGET SCENARIO

Project: **River West - Madera** Date prepared: 2/29/2012

This budget scenario provides a planning-level budget for implementation and maintenance of primary program elements for the project. KLA and the Client understand that there are many undetermined and unknown factors at this early design stage that will clarify and refine the design with future design phases and that these will have an impact on the construction costs for this project. KLA has included a design contingency to help account for these unknown design features. Costs are in 2012 USD and do not include escalation.
Costs for Levee Repair are not included in this cost estimate, they will be covered by a separate projec t or process due to their complex design, regulatory and multi-juridictional nature.

ITEM NUMBER	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION	SECTION TOTAL
1.00	**PRIORITY ONE ELEMENTS**					$ 4,096,600.00
1.01	General Clearing and Removal	1	allow	$ 50,000.00	$ 50,000.00	
1.02	Utilities *Budget for miscellaneous water and electrical services*	1	allow	$ 75,000.00	$ 75,000.00	
1.03	Site Acess Road *20' asphalt road with new base rock* *40' grading*	12,550	lf	$ 80.00	$ 1,004,000.00	
1.04	Multi Purpose Trail *8' asphalt with new base rock* *6' gravel* *25' grading*	14,100	lf	$ 45.00	$ 634,500.00	
1.05	Primary Trail - improve existing path *6' gravel, augment existing trail* *15' grading*	17,950	lf	$ 18.00	$ 323,100.00	
1.06	Designated ADA Trail *5' asphalt* *8' grading*	4,600	lf	$ 17.50	$ 80,500.00	
1.07	Parking Lot - gravel *Gravel* *Grading*	112,000	sf	$ 3.00	$ 336,000.00	
1.08	Restroom	1	ea	$ 250,000.00	$ 250,000.00	
1.09	Interpretive Signage *Budget for multiple free-standing signs with posts to be located throughout the site*	1	allow	$ 10,000.00	$ 10,000.00	
1.10	Landscaping and Irrigation	1	allow	$ 35,000.00	$ 35,000.00	
1.11	Entry and Directional Signage	3	ea	$ 7,500.00	$ 22,500.00	
1.12	Access Barrier *Gate, boulders, or other*	12	ea	$ 1,250.00	$ 15,000.00	
1.13	Fence - split rail along Site Access Road	25,100	lf	$ 50.00	$ 1,255,000.00	
1.14	Ramp Improvements	6	allow	$ 1,000.00	$ 6,000.00	

MASTER PLAN BUDGET SCENARIO

Project: **River West - Madera** Date prepared: 2/29/2012

This budget scenario provides a planning-level budget for implementation and maintenance of primary program elements for the project. KLA and the Client understand that there are many undetermined and unknown factors at this early design stage that will clarify and refine the design with future design phases and that these will have an impact on the construction costs for this project. KLA has included a design contingency to help account for these unknown design features. Costs are in 2012 USD and do not include escalation.
Costs for Levee Repair are not included in this cost estimate, they will be covered by a separate projec t or process due to their complex design, regulatory and multi-juridictional nature.

ITEM NUMBER	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION	SECTION TOTAL
2.00	**PRIORITY TWO ELEMENTS**					$ 614,750.00
2.01	General Clearing and Removal	1	allow	$ 50,000.00	$ 50,000.00	
2.02	Earthwork	1	allow	$ 75,000.00	$ 75,000.00	
2.03	Primary Trail - improve existing path *6' gravel, augment existing trail* *15' grading*	1,750	lf	$ 18.00	$ 31,500.00	
2.04	Primary Trail - new *6' gravel* *15' clearing and grading*	8,725	lf	$ 10.00	$ 87,250.00	
2.05	Hiking Trail - new *4' gravel* *6' clearing and grading*	500	lf	$ 6.00	$ 3,000.00	
2.06	Designated ADA Trail *5' asphalt* *8' grading*	9,600	lf	$ 17.50	$ 168,000.00	
2.07	Overlook - Small *Includes shelter, wall, paving, interpretive signage, and picnic table or bench*	2	ea	$ 27,500.00	$ 55,000.00	
2.08	Overlook - Large *Includes shelter, wall, paving, interpretive signage, picnic tables and benches, built in seating for outdoor classroom*	1	ea	$ 145,000.00	$ 145,000.00	

MASTER PLAN BUDGET SCENARIO

Project: **River West - Madera** Date prepared: 2/29/2012

This budget scenario provides a planning-level budget for implementation and maintenance of primary program elements for the project. KLA and the Client understand that there are many undetermined and unknown factors at this early design stage that will clarify and refine the design with future design phases and that these will have an impact on the construction costs for this project. KLA has included a design contingency to help account for these unknown design features. Costs are in 2012 USD and do not include escalation.
Costs for Levee Repair are not included in this cost estimate, they will be covered by a separate projec t or process due to their complex design, regulatory and multi-juridictional nature.

ITEM NUMBER	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION	SECTION TOTAL
3.00	**PRIORITY THREE ELEMENTS**					$ 651,250.00
3.01	General Clearing and Removal	1	allow	$ 15,000.00	$ 15,000.00	
3.02	Earthwork	1	allow	$ 25,000.00	$ 25,000.00	
3.03	Primary Trail - improve existing path *6' gravel, augment existing trail* *15' grading*	3,450	lf	$ 18.00	$ 62,100.00	
3.04	Primary Trail - new *6' gravel* *15' clearing and grading*	2,300	lf	$ 10.00	$ 23,000.00	
3.05	Hiking Trail - new *4' gravel* *6' clearing and grading*	3,525	lf	$ 6.00	$ 21,150.00	
3.06	Overlook - Small *Includes shelter, wall, paving, interpretive signage, and picnic table or bench*	2	ea	$ 27,500.00	$ 55,000.00	
3.07	Park Host Facility	1	ea	$ 250,000.00	$ 250,000.00	
3.08	Camping - 10 sites for near-primitive camping *14' gravel road* *Clearing and grading* *Non-potable water connection* *Limited site furnishings per campsite (picnic table, fire pit)*	1	allow	$ 200,000.00	$ 200,000.00	
	SUBTOTAL PRIORITY GROUPS 1-3					$ 5,362,600.00
	DESIGN CONTINGENCY			25.0%		$ 1,340,650.00
						$ 6,703,250.00
	SOFT COSTS			15.0%		$ 1,005,487.50
	TOTAL (does not include Maintenance)					$ 7,708,737.50

MASTER PLAN BUDGET SCENARIO

Project: **River West - Madera**

Date prepared: 2/29/2012

This budget scenario provides a planning-level budget for implementation and maintenance of primary program elements for the project. KLA and the Client understand that there are many undetermined and unknown factors at this early design stage that will clarify and refine the design with future design phases and that these will have an impact on the construction costs for this project. KLA has included a design contingency to help account for these unknown design features. Costs are in 2012 USD and do not include escalation.
Costs for Levee Repair are not included in this cost estimate, they will be covered by a separate projec t or process due to their complex design, regulatory and multi-juridictional nature.

ITEM NUMBER	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION	SECTION TOTAL
4.00	**MAINTENANCE (per year)**					$ 298,140.00
4.01	Site Access Roads with Mulit-use Trail	2.40	mile	$ 20,000.00	$ 48,000.00	
4.02	Multi-use Trail	2.70	mile	$ 11,000.00	$ 29,700.00	
4.03	Primary Trail	6.50	mile	$ 11,000.00	$ 71,500.00	
4.04	ADA Trail	2.70	mile	$ 2,000.00	$ 5,400.00	
4.04	Hiking Trail	0.70	mile	$ 1,000.00	$ 700.00	
4.05	Concessionaire & Park Host	8,760	hrs	$ 9.00	$ 78,840.00	
4.06	Utiliites and Utility Maintenance	1	LS	$ 4,000.00	$ 4,000.00	
4.07	Janitorial and General Maintenance	1	LS	$ 60,000.00	$ 60,000.00	