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APPENDIX A – MASTER PLANNING AND PUBLIC OUTREACH EFFORT

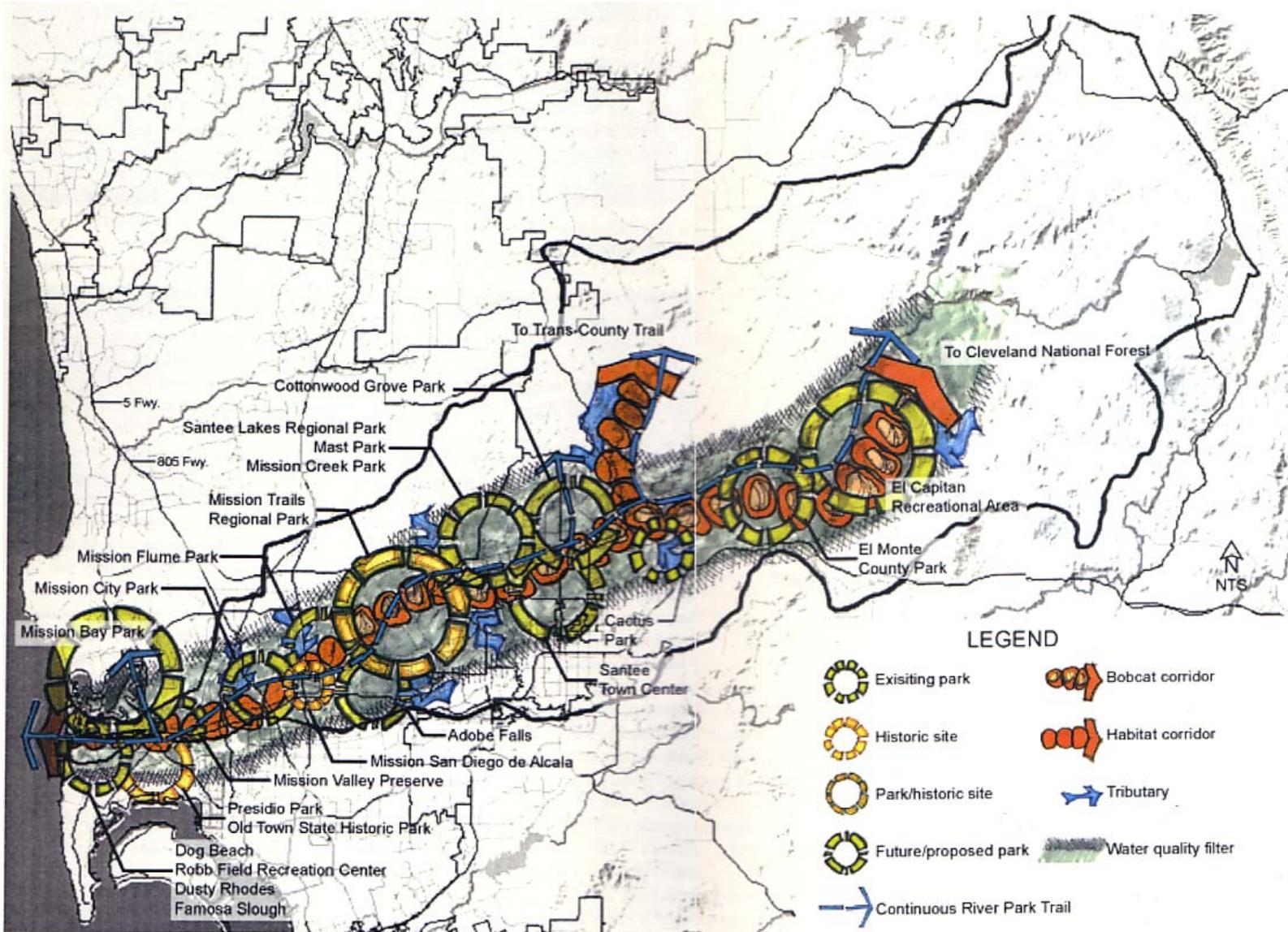
RIVER PARK ORIGINS

In 2001, City of San Diego Mayor Dick Murphy invited federal, state, county, City of San Diego and City of Santee elected officials to form the San Diego River Park Alliance. The alliance provided support on political issues relating to the creation of the San Diego River Park, and envisioned a San Diego River Park extending from its headwaters in the Cuyamaca Mountains to its mouth at the Pacific Ocean.

In 2002, with the support of the San Diego River Park Alliance, the Coastal Conservancy, the San Diego Foundation, the San Diego River Park Foundation and San Diego River Coalition initiated an effort to develop a Conceptual Plan for the entire San Diego River corridor. Engaging the 606 Studio program a group of third year graduate students and faculty in the Department of Landscape Architecture at California State Polytechnic University, Pomona creates a framework through extensive community workshops throughout the river corridor. The framework was then translated into a Conceptual Plan and completed by the by students in June 2002. The Conceptual Plan focuses on the stretch of the river from El Capitan Reservoir to the Pacific Ocean, and is intended to present an examination of the cultural context, water resources, plants and animals, and cultural and educational opportunities upon which an overall vision for the San Diego River Park can be built. The overarching goal of the Conceptual Plan is to assist communities and stakeholders in shaping their vision for the San Diego River Park. The plan seeks to establish a healthy environment for the San Diego River Park, acknowledging both natural and human systems in creating an integrated whole. The Conceptual Plan seeks to achieve this goal by accomplishing the following objectives:

- Conduct an inventory and analysis of the resources and conditions of the watershed.
- Develop a conceptual plan that reflects community desires while enhancing the natural function of the river corridor.
- Develop criteria and recommendations as a guide for design and implementation of the park as a unified system.
- Illustrate the potential application of the conceptual plan by developing design concepts for specific sites.
- Provide recommendations to implement the river park.

The Conceptual Plan identifies four broad categories of issues: Historic Recognition, Water Management, Habitat Enhancement, and Recreation/Education. Historic Recognition includes the rich history of the river valley and its significance in the settlement of the San Diego Region. Water Management explores issues of sediment transport, water volume and water quality. Habitat Enhancement identifies key issues related to preservation of native species and connectivity between open space areas and wildlife habitat, and Recreation/Education identifies issues of connectivity between parks and access to the river corridor. These elements provide the basic framework for organizing the issues and ideas for the Conceptual Plan and are carried forward in this document.



San Diego River Park – The Conceptual Plan

The public outreach effort included:

- Meetings with adjacent communities
- Meetings with elected officials
- Public forums (three, associated with key project phases)
- Individual telephone interviews with stakeholders
- Information on the San Diego River Park Foundation web site (www.sandiegoriver.org)
- E-mail announcements
- Promotional video aired on SDTV announcing the project, upcoming public meetings and sources of information
- Formal and informal presentations to planning groups and park and recreation organizations including the Citizens Advisory Committee of Mission Trails Regional Park, the Mission Bay Park Committee, and communities in and adjacent to the river valley

Regular meetings with a Technical Advisory Committee also played a major role in the process. These meetings included key City of San Diego, San Diego County, and City of Santee staff, as well as representatives of the San Diego River Park Foundation.

The Master Plan planning area includes both public and private property, and it should be noted that private property owners have specific property and development rights. The Master Plan supports working with these private property owners to determine the course of future development and redevelopment projects. The Master Plan seeks to implement the goals of the River Park in a way that will meet all approved plans and goals while also respecting each land owner's rights.

In June 2005, the draft Master Plan was taken to the San Diego City Council as an Information Item. In the staff report, the following groups were noted as part of the planning process:

- Mission Trails Regional Park Citizens Advisory Committee
- Wetlands Advisory Committee
- Mission Trails Regional Park Task Force
- Tierrasanta Community Council
- Citizens Coordinate for Century 3 (C3)
- Mission Bay Park Committee
- North Bay Project Area Committee for Redevelopment District
- Ocean Beach Planning Board

- Mission Valley Unified Planning Organization
- Linda Vista Planning Group
- Navajo Community Planners
- Old Town Community Planning Committee
- Park and Recreation Board Design Review Subcommittee
- Park and Recreation Board
- San Diego River Conservancy

The City Council did not take formal action at the meeting, but gave support for finalizing the Draft Master Plan and taking it forward for adoption.

In 2007, the City took the next step to finalize the Draft Master Plan, prepare a Program Environmental Impact Report (PEIR) and determine the implementation strategy for the Master Plan. In December 2007, the City Council initiated the study of amendments to the affected community land use plans, local coastal program and zoning code needed to implement the Master Plan.

In the fall of 2008, two public workshops were conducted to gather community input regarding implementation methods for the Master Plan. The first workshop, in September 2008, focused on creating a San Diego River Community Plan Implementation Overlay Zone (CPIOZ) and discussed which areas to include in this new overlay zone. It was determined that two areas adjacent to the River would be within this CPIOZ: the River Corridor Area and the River Influence Area. The River Corridor Area is defined as the 100-year Floodway as mapped by FEMA plus 35' on either side of the floodway. The River Influence Area is defined as the first 200' from the River Corridor Area on both sides of the 100-year floodway. This proposed CPIOZ would be found in each affected community plan and would include development regulations within each area. The second workshop, in November 2008, focused on creating proposed development regulations for each area within the CPIOZ.

Based on information gathered during the two public workshops, it was determined that a new River Park CPIOZ along the entire 17.5 miles stretch would complicate the implementation of the Master Plan by adding another layer of regulations to the existing zoning code. For this reason, it was decided that the existing zoning code would be amended to implement the Master Plan rather than create a new zoning overlay. The applicable, existing zoning code regulations are found in the Mission Valley Planned District Ordinance, the Navajo CPIOZ and the Mission Trails Design District Ordinance. Development regulations for the River Corridor Area and the River

Influence Area will be incorporated into each of these existing zoning code regulations. To supplement zoning code regulations, the Master Plan will provide written and graphic Design Guidelines for each of the river areas.

In 2009, the consultant team and city staff worked to update the Draft Master Plan to reflect public input and the proposed method of implementation. Consequently, draft amendments to four community plans (Mission Valley, Navajo, Tierrasanta and East Elliot) and draft amendments to the three zoning code regulations were prepared. In April 2009, a PEIR scoping meeting was held to gather public comments on the environmental issues that should be analyzed relative to the draft Master Plan. In 2010, the draft Master Plan, and draft community plan and draft zoning amendments were presented to the affected community planning groups and park advisory committees as an Information Item

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APPENDIX B - EXISTING CONDITIONS

INTRODUCTION

The San Diego River within the boundaries of the City of San Diego exists as a series of diverse habitats, bookended by two major parks, Mission Bay Park and Mission Trails Regional Park. Between these two large open spaces, the river has been impacted and severely altered by mining, flood control and increasing development pressure. These impacts have compromised the integrity of the River and the wildlife habitat it supports.

LAND USE

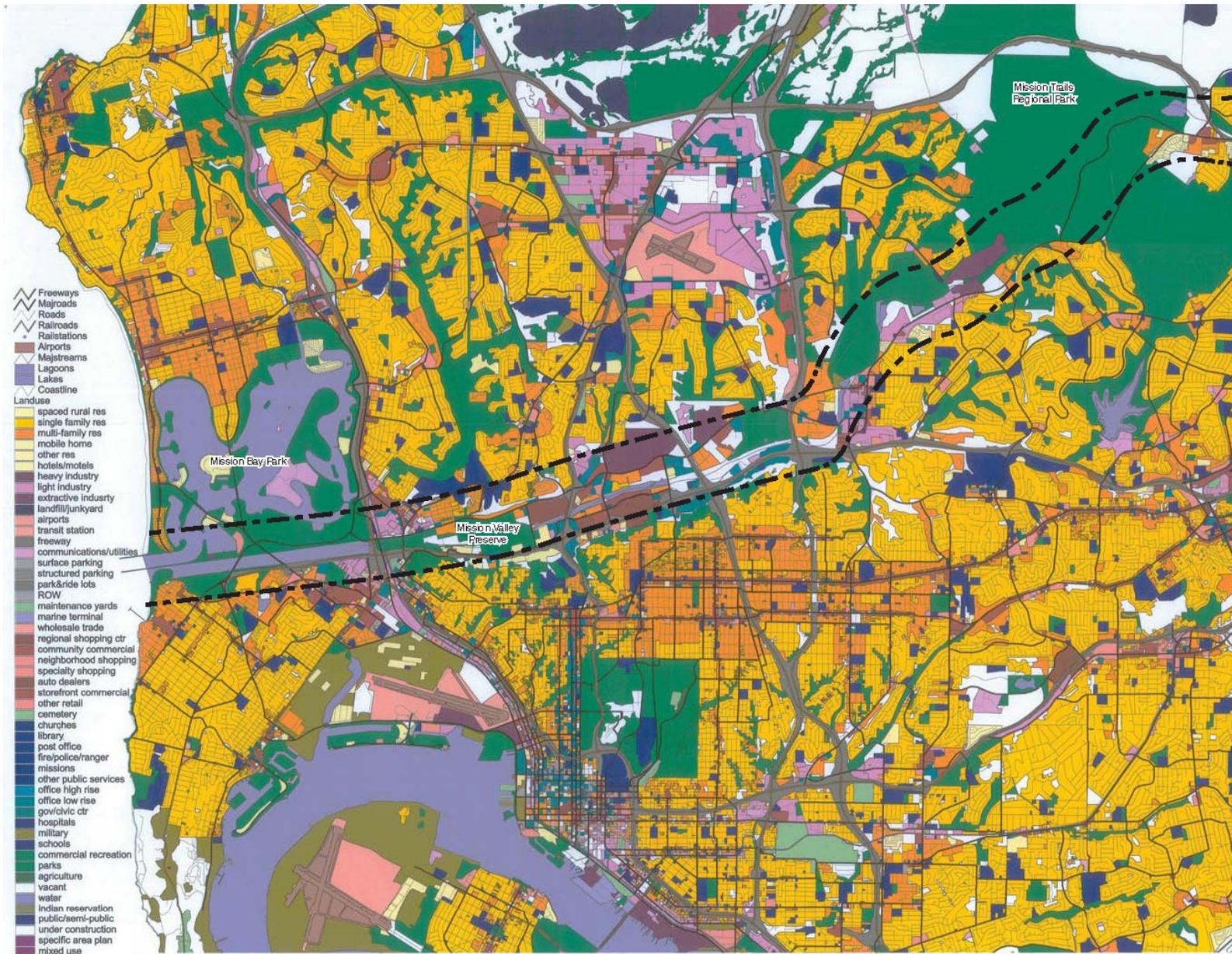
Constrained by private development, utility rights-of-way and industrial uses, the San Diego River has been impacted by channelization, levees and dams, resulting in intermittent flooding of the private development that have been constructed within the floodplain. The study area land use includes significant areas of open space in the major parks and preserves, but the areas within Mission Valley are primarily in commercial and transportation uses.

SAFETY AND SECURITY

Today, many sections of the river corridor are perceived as unsafe. Dense stands of arundo and other vegetation limit visibility and movement. A significant population of homeless people exists in the river corridor from Ocean Beach to the Santee city limits, with concentrated pockets throughout Mission Valley, particularly where vegetation is most dense. The presence of the homeless adds to the perception of the river in the valley as a threatening environment. The San Diego Police Department has been focusing on the crime problem since October 2004. The department is currently considering the possibility of calculating crime statistics for the San Diego River Park Corridor to determine the impact of their focused efforts. A dramatic decrease in property crimes is anticipated as a result of their current operation.

LAND OWNERSHIP

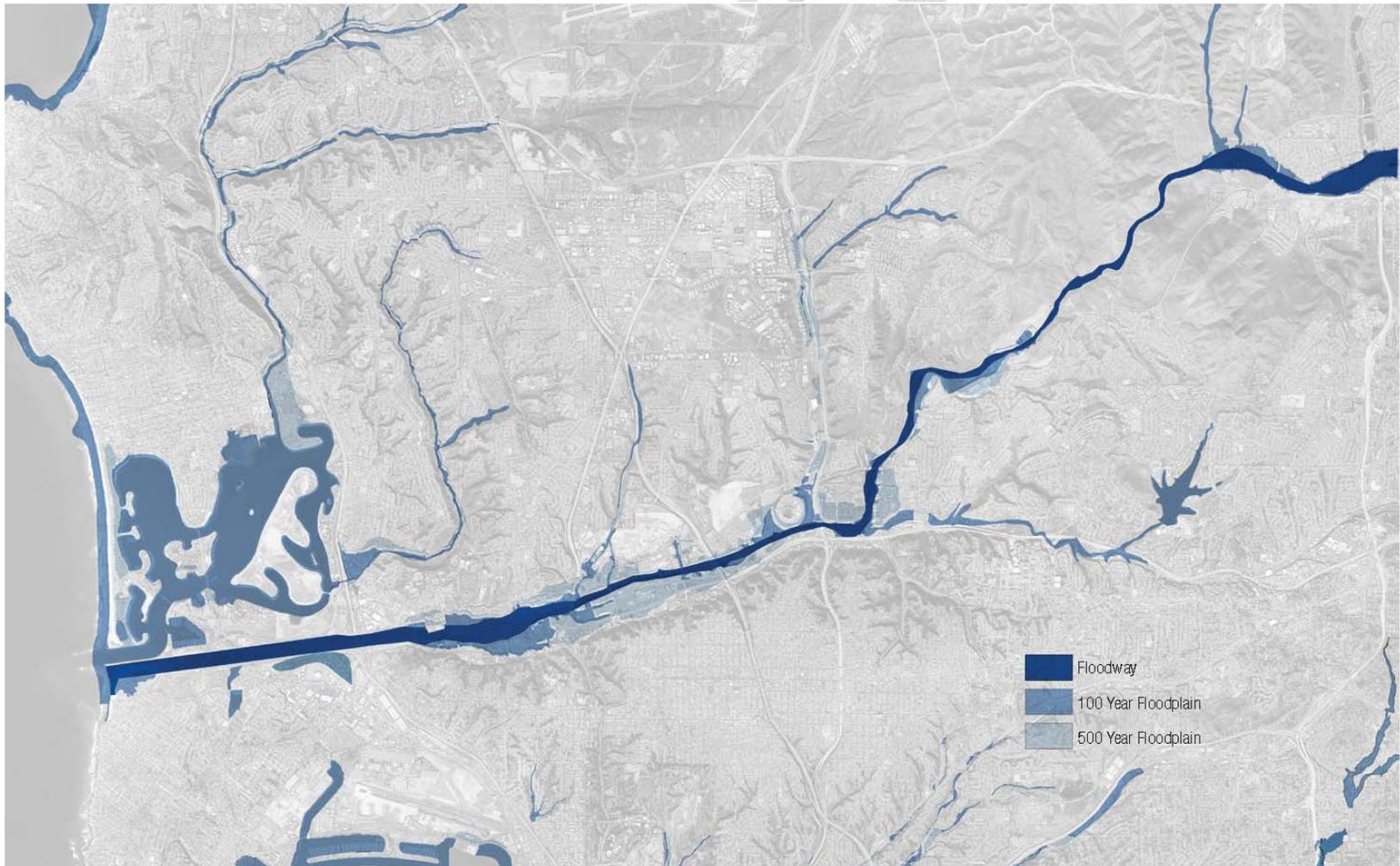
Significant segments of the study area include publicly owned land, including Mission trails Regional Park, Qualcomm Stadium, mission Valley Preserve, Southern Wildlife Refuge and Mission Bay Park. Significant land area is also publicly held roadway rights-of-way, or in ownership by transportation entities, including Caltrans. Within Mission Valley, much of the river corridor itself is within private ownership. Within Mission Valley commercial activities abut directly adjacent to the river floodway.



Existing land uses

FLOODWAY / FLOODPLAIN

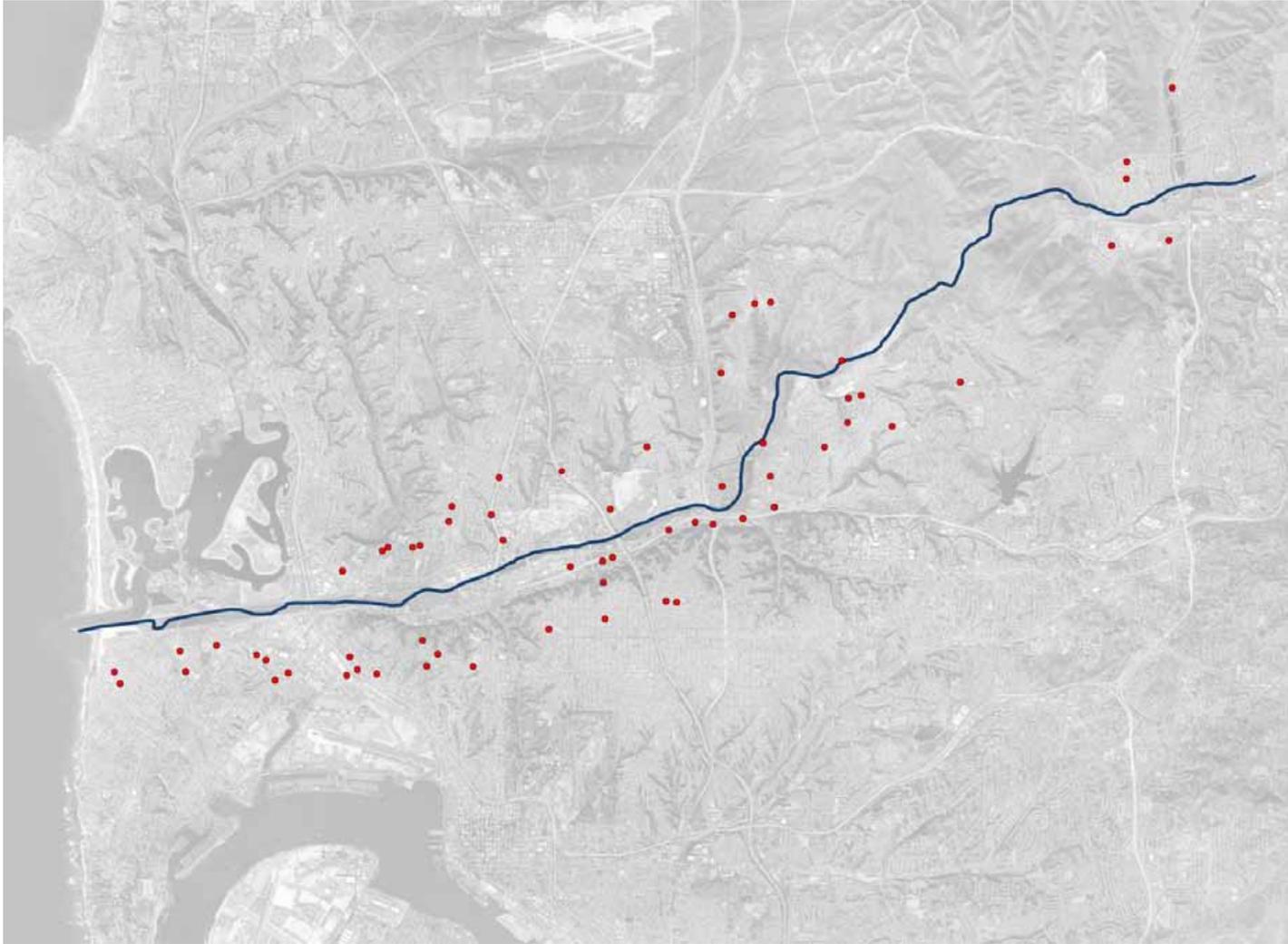
Historically the floodplain included the entire valley floor, the whole Mission Valley floor, the entire Mission Bay and what is now Ocean Beach, extending to San Diego Bay. The remarkably narrow floodway today is the result of numerous manipulations of both stream flow and the channel.



Existing floodway and floodplain

SCHOOLS AND UNIVERSITIES

Over fifty-six universities, high schools, middle schools and elementary schools are located within a mile of the river. The river presents an extraordinary educational opportunity to these institutions, and the faculty and students attending these schools are a wonderful resource for programs to protect and improve the rivers health.



Existing schools within 1 mile of river

APPENDIX C - HYDROLOGY AND WATER QUALITY INVENTORY

INTRODUCTION

The San Diego River Park Plan proposes enhancements to the natural hydrologic processes of the river. These improvements will also fulfill other recreational, cultural, and wildlife objectives. Changes to river processes have created poor water quality, low habitat diversity, increased erosion, flow restrictions, flooding issues, and excessive invasive vegetative growth. Improvements to flow and water quality would begin to address these problems while also providing a valuable recreational resource.

HISTORY OF THE SAN DIEGO RIVER

The San Diego River has been dramatically altered by human activity. Historically, the river flowed unimpeded from its headwaters in the Cleveland National Forest within California to its delta at the Pacific Ocean. River flows varied throughout the year and from year to year. In wet years, the river had strong year-round flows, while in dry years flows disappeared completely during the summer months. Major flooding occurred infrequently; when it did occur the river was so powerful that it could change courses and terminate at either San Diego Bay or present day Mission Bay Park. The source of water was limited to precipitation inputs within the watershed. Unrestricted river flows transported sediments from the river's headwaters to the Pacific Ocean where the sediments helped replenish San Diego's beaches. Unimpeded flows in extreme wet weather events could exceed 100,000 cubic feet per second (cfs).

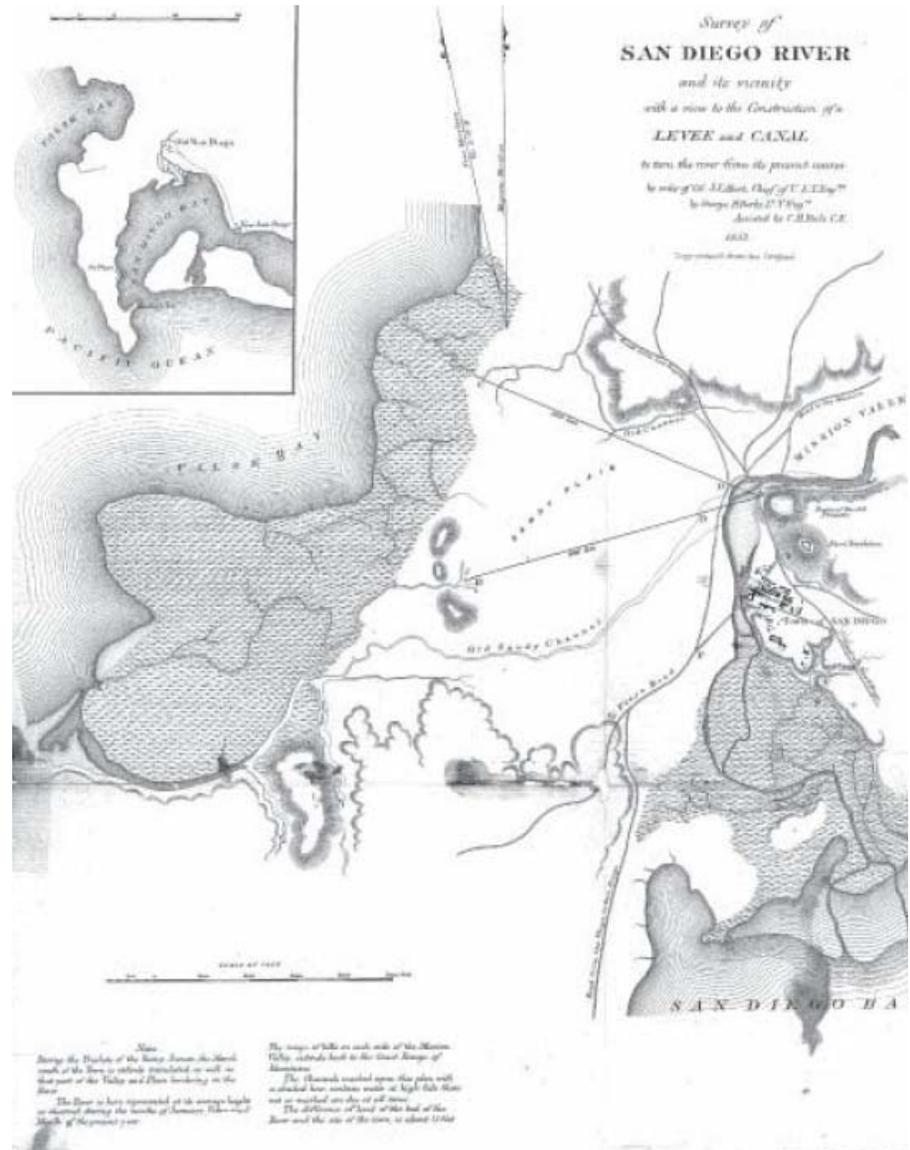


1916 Flood at Old Town San Diego Source: San Diego Historical Society



Mission Valley Agriculture in 1916 Source: San Diego Historical Society

Beginning in the early 1800s and continuing to present day, humans have attempted to control the river's flows by constructing dams or levees, and by channeling the river. Old Mission Dam, located in what is now the Mission Trails Regional Park, was completed in 1816. It was the first dam on the river and was used by Spanish missionaries. The dam at Lake Cuyamuca was built in the 1880's, and two additional dams, the El Capitan and the San Vicente, were built in the mid-1900s to facilitate increased water supply for the growing San Diego population. Water was pumped from the San Diego River at Palm Canyon in present day Presidio Park up to one of the earliest reservoirs in San Diego in what is now Mission Hills. Water was also diverted via flume from Lake Cuyamuca to the growing community of San Diego. Such projects were critical to inhabiting this desert environment. The region also began importing water from outside sources including the Colorado River and the Sacramento River/San Joaquin River Delta. These dams decreased the San Diego River's flows by storing water that would have normally flowed into the river. However, major floods still occurred despite the decreased river flows. Thus, to control flooding, the U.S. Army Corps of Engineers channelized numerous sections of the river, concentrating primarily on the sections in the City of San Diego. Channelizing the river consisted of straightening the river to remove meanders and paving/armoring the riverbanks so that water could flow downstream faster.



San Diego River Survey 1853

Despite the efforts to control flooding, it still occurs in San Diego because the quantity of water in the river has increased over time. Impermeable surfaces, nonpoint source runoff, the channelized river, and imported water are primary contributors to this increase. Impermeable surfaces such as roads, parking lots, and buildings prevent rainwater from infiltrating into the ground, causing large quantities of water to run-off directly into the river via storm water collection systems.

The City of San Diego imports approximately 90% of its water supply. This water enters the river from residential and commercial runoff, irrigation run-off, treated effluent of a sewage treatment facility in Santee, and during flooding events from reservoir overflow. The imported water is suspected to be a significant water source to the river and is the major cause of year-round flow in the lower San Diego River reaches.

The water quality of the San Diego River, like its flows, has been affected by a number of factors, including dams, increases in impermeable surfaces, and increases in imported water use by the growing population of San Diego. The El Capitan and San Vicente dams have caused increased riverbank erosion by capturing sediments that were historically carried to the delta and the ocean. Urban runoff transports a host of pollutants to the river, including oils and grease, gasoline, bacteria, trash, nutrients, sediments, and pesticides. The detrimental effects of urban runoff on the water quality of the San Diego River have been observed and documented in a number of studies (Anchor 2003). The lower San Diego River has been designated as water quality limited for phosphorus, dissolved oxygen, fecal coliform, and total dissolved solids. Furthermore, evaluations of water quality based on surveys of a stream's biological organisms (biological assessments) performed from 1997 to 2001, indicate that the lower San Diego River exhibited degraded biological and physical integrity (RWQCB 2003, Anchor 2003).



Pre-Sanitary fill site
Source: 7-7-52 WCC2 City of San Diego



7-24-1952
WCC5
City of San Diego
First Day of Rubbish Disposal at Mission Bay Sanitary Fill Site
Source: 7-24-52 WCC3 City of San Diego

KEY RIVER PROCESSES

The quantity and velocity of a river's waters can affect the river channel itself, the availability of nutrients to the biota, and the aquatic habitat diversity. River flows can alter the physical river channel by transporting or depositing sediments downstream, and by eroding the riverbanks. Sediments transported to habitats downstream can provide additional nutrients to the biota in these habitats. The size of sediments transported correlates to water velocity with larger-sized particles typically being transported only during storm events, when flows are likely to be highest. Pulse flows (high flows occurring during storm events) are particularly important since they can transport particulate nutrients and larger-sized sediments while flushing the riverbeds of fine sediments. Fine sediments can degrade aquatic ecosystems by covering a river's gravel bottom, and thereby preventing fish and numerous invertebrates from feeding or reproducing.



First San Diego River Improvement Project

Transport of a variety of sediment sizes is important in creating a diverse aquatic ecosystem with both riffle and pool habitats. Riffle habitats are areas "of shallow, turbulent water passing through or over stones or gravel of a fairly uniform size" (Horne and Goldman 1994). Small invertebrates and fish eggs can obtain the oxygen they need in riffle habitats on the river bed while being protected from predators. Relatively slower flows, a substrate mixture of stones and fine-grain sediments, and an accumulation of decaying terrestrial debris characterize pool habitats (Horne and Goldman 1994). Different environmental conditions allow different biota to exist in pool habitats than those existing in riffle habitats.

Dense vegetation in the river channel can fragment or degrade river habitats, slow river flows, and cause increased sediment deposition or flooding in those areas. Types of vegetation that could negatively affect the river's ecosystem or water quality include plants floating on the water's surface or terrestrial plants that are growing in shallow areas of the river channel. Floating plants, such as Water Primrose in particular, can disrupt the aquatic foodweb by causing excessive shading. Large quantities of shading can prevent growth of flora (ex. algae or macrophytes) and remove a food source for many invertebrates (NRC 1992).

Channelizing rivers or restricting river meanders can also detrimentally affect aquatic and riparian habitats. Negative effects of channelizing rivers include removal of riparian vegetation and therefore habitat, loss of in-stream cover, altered riffle pool sequences, decreased stream sinuosity, altered substrate composition, increased bank erosion, increased suspended sediment and increased stream velocity. Restoration of river meanders can improve water quality by allowing more time for natural cleansing processes. River meanders can also decrease flooding and improve (and increase) aquatic and terrestrial habitats by increasing the stream corridor width. When necessary, artificial structures or other aeration devices should be considered for improving water quality.

WATER QUALITY AND LAND USE

Water quality is directly linked to land uses within the watershed and especially adjacent to the stream channel. Land use practices in the San Diego River watershed and Mission Valley in particular have had profound and adverse impacts on the health of the river. Urban development has converted natural vegetated groundcover to impervious surface materials such as roads, roofs, and parking lots. The natural vegetated surfaces slowed the rate of run-off, and increased absorption into the ground creating an effective filtration and purification process. When this natural system is eliminated by paving the ground surface pollutants are more likely to flow directly into surface water systems. As development increases, the sources of pollution increase as well, bringing proportionately higher levels of vehicle emissions, car maintenance wastes, municipal sewage, pesticides, hazardous wastes, pet wastes and trash that can be washed directly into the river.

The San Diego River has been degraded by pollution from a variety of surface sources and is threatened by at least two subsurface sources, including the landfill between the river and Mission Bay and a benzene plume northeast of Qualcomm Stadium. The landfill is currently being studied and a Site Assessment is available at the City of San Diego Environmental Services Department.

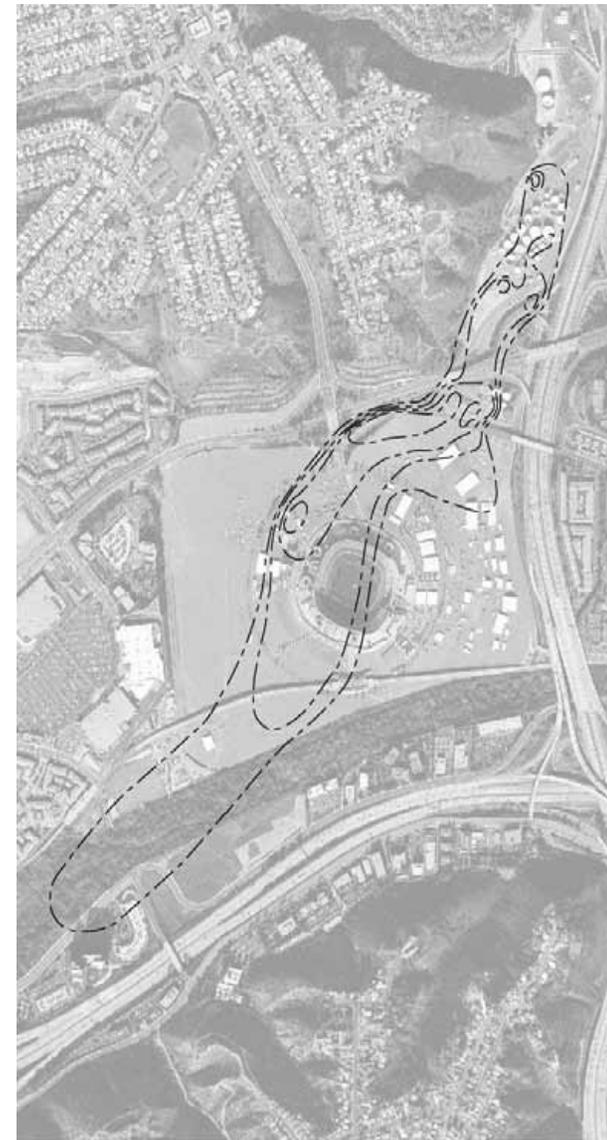
GROUNDWATER

The San Diego River is located within the service area of the San Diego County Water Authority (SDCWA), and associated with two groundwater basins: the Santee/El Monte Groundwater Basin and the Mission Valley Groundwater Basin. The focus here is the Mission Valley Basin, which is a shallow alluvial aquifer underlying an east-west trending valley that extends from the eastern terminus of Mission Gorge out to San Diego Bay in Coastal San Diego. The basin is bounded by the contacts of alluvium with the semi-permeable San Diego and Poway Formations and the impermeable Linda Vista Formation. The southwestern boundary is the San Diego Bay.

The principal water bearing deposit is the Quaternary age alluvium consisting of medium to coarse-grained sand and gravel. This alluvium has an average thickness of about 80 feet and a maximum thickness of about 100 feet. The Mission Valley Basin is among some of the more productive of the aquifers lying within the jurisdictional boundaries of SDCWA. The average well production is about 1,000 gallons per minute and the average specific yield is about 15 percent. The San Diego Formation is found within this basin and is generally less than 100 feet thick east of the Rose Canyon fault system. West of the Rose Canyon fault, the San Diego Formation becomes thicker, reaching a maximum thickness of about 1,000 feet. The primary source of recharge for this basin is infiltration of stream flow from the San Diego River.

The California Department of Water Resources estimated storage capacity of the basin to be on the order of 42,000 acre-feet in 1975. San Diego County Water Authority estimated a total storage capacity of about 40,000 acre-feet 1997, indicating a gradual decline in storage capability over time. SDCWA estimated that water was pumped from the basin at the rate of about 500 acre-feet per year in 1997. Impairments to the Mission Valley Groundwater Basin include magnesium and sulfate from domestic use. Chloride and total dissolved solids concentrations are high for domestic and irrigation use. Seawater intrusion is suspected (California Department of Water Resources 2004).

The proposed actions of the San Diego River Park will likely have no negative impact to groundwater resources. Increasing the length of the river by increasing meander and broadening the riparian channel may lead to increased groundwater recharge. None of the proposed actions are reliant upon groundwater resources for implementation. However further study of groundwater quality and quantity, its effects on habitat and wildlife and the potential for groundwater recharge are warranted.



MTBE Isocentration Contours
Source: Levine Fricke – Mission Valley Terminal

APPENDIX D - HABITAT AND WILDLIFE INVENTORY

ECOSYSTEM CHARACTERIZATION

The warm, dry summers and cool, wet winters of the southern California climate supported the evolution of a dynamic ecosystem. Alternating from one extreme to the other, from summer and fall wildfires to winter downpours and floods, climatic events required the vegetation and wildlife of the region to adapt so that fire and flood became integral components of the ecosystems in the region. The large-scale transformation of these ecological processes through fire suppression, alteration of watershed hydrology, reduction and fragmentation of habitat driven by population growth and associated development in the San Diego River watershed has resulted in conditions for plants and wildlife that are significantly different than those to which they had adapted. Conditions today are different than those that were present just fifty years ago. Changes in sediment transport, water volume and water quality discussed in the San Diego River Park Conceptual Plan and detailed in the Hydrology and Water Quality Inventory affect the structure and distribution of vegetation and wildlife. Loss of habitat and fragmentation due to development can reduce populations of plants and animals and prevent genetic dispersal resulting in localized extirpations and degraded habitat.



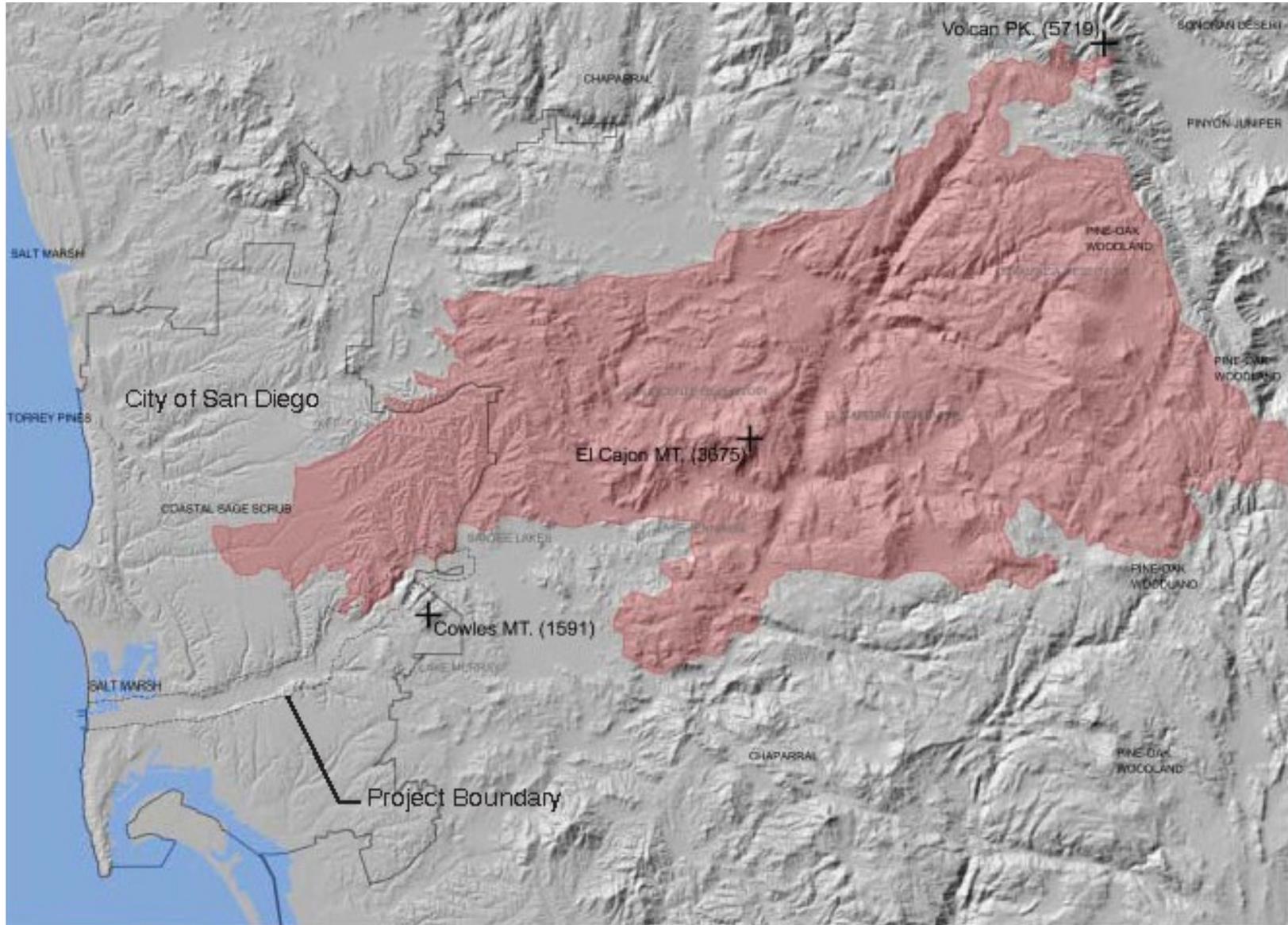
Multiple Habitat Planning Areas

FLOOD DISTURBANCE

Due to the dry summers and wet winters typical of the mediterranean climate of Southern California, most rivers are low-flowing or intermittent for the majority of the year, but subject to sudden, large flood flows during the wet season. Prior to significant alteration and hydrologic changes, the San Diego River fits this pattern. Prior to damming, average flow at the Santee gauge station of 25 cubic feet per second (cfs) contrasted with peak measured flood flows of 70,200 cfs; post-dam flood levels only approach 9,590 cfs. Dam building, channelization, and gravel mining alter river dynamics so the river no longer functions as the primary disturbance agent in the riparian corridor. Flooding, erosion, deposition, and shifting of the riverbed uproot vegetation in one place while at the same time creating new land for plants to colonize. The result was a diverse mosaic of riparian vegetation, some areas supporting a mature riparian forest and other areas colonized with pioneer species. Flooding does occur, but significant erosion, deposition, and shifting of the riverbed no longer occur. As described in the Hydrology and Water Quality Inventory in this report, return flows in developed areas have changed the river from ephemeral to perennial, with water flowing consistently throughout the year. Due to these changes, the riparian vegetation supported by the river tends to maintain a homogenous character of a shrub understory, with a mature over story canopy where human disturbance does not occur. These changes to river hydrology and dynamics will also cause populations of species that prefer the modified hydrologic conditions to increase to the detriment of those species that are better adapted to the historic conditions.

FIRE DISTURBANCE

With the large-scale destruction of 2003, fire has reasserted its prominence in the public eye and its influence on the ecology of the San Diego River watershed. The Cedar fire burned 95% of the upper watershed and 74% of the entire watershed. Within the study area the Cedar fire burned most if not all of the native chaparral and coastal sage scrub (CSS) northeast of the river within Mission Trails Regional Park. The wind eased as the fire reached the riparian corridor of the river, limiting damage to the riparian vegetation and beyond to the southeastern part of the park. Fire is a key process for maintaining the overall health of the CSS and Chaparral plant communities, promoting new growth and in the case of small fires, improving the diversity of seral (successional) stages within the plant community. Fire suppression prolonged the inevitability and possibly exacerbated the intensity of the fire by allowing fuels to accumulate. Fire suppression results in conditions where large contiguous stands of mature vegetation are contrasted with watersheds bare of vegetation due to recent burns. The vegetation affected by the fire is expected to recover fully, but short-term impacts include: the loss of a large area of adjacent upland vegetation, the reduction of adjacent habitat and cover, soil erosion and river siltation, and potential colonization by exotic plant species. Long-term effects include: potential stand heterogeneity of the plant community (under fire suppression) with a corresponding reduction in biodiversity.



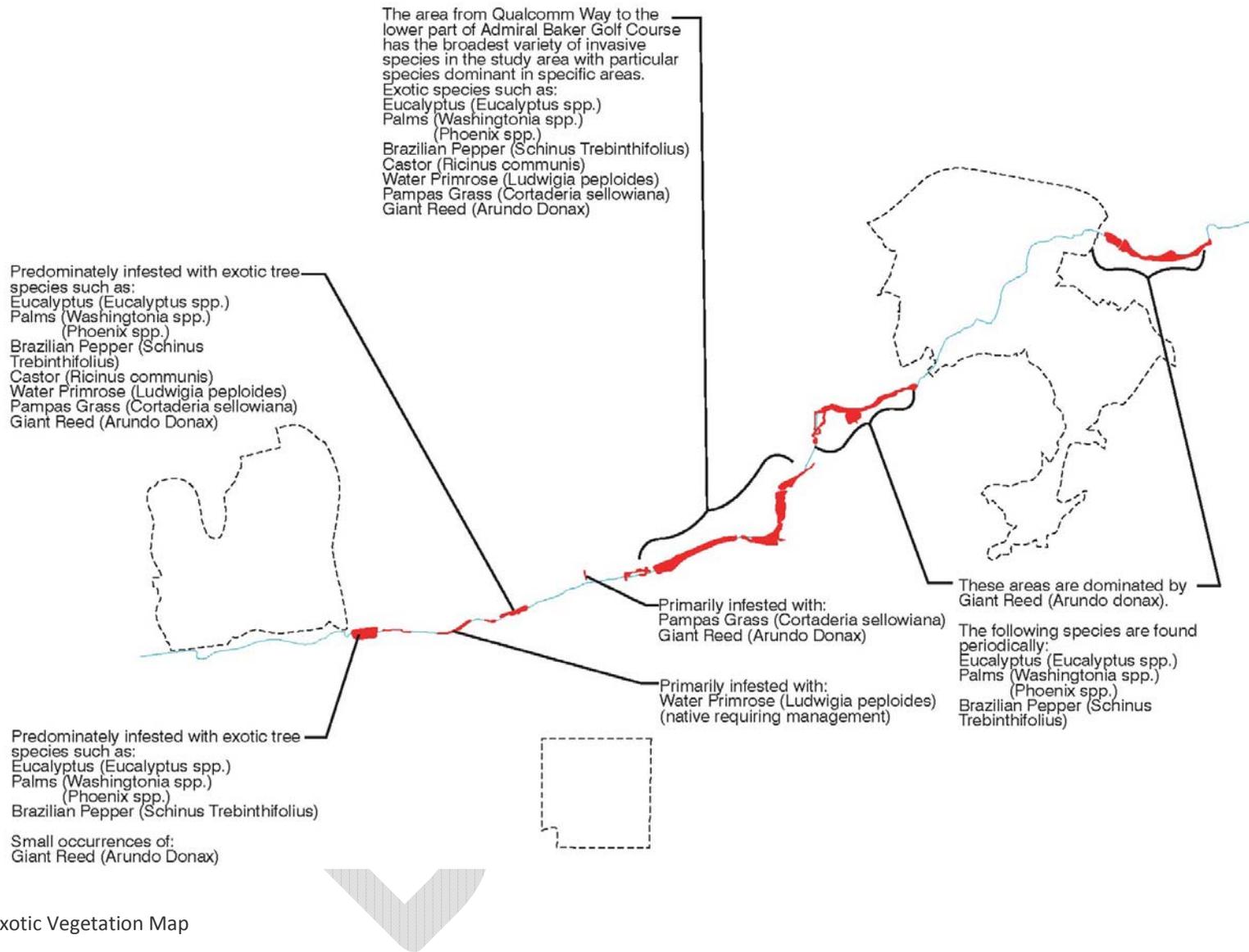
Cedar Fire Disturbance Area

PLANT COMMUNITIES

The condition of native vegetation and associated plant communities within the study area falls into three general categories. In the first category are relatively healthy native plant communities in undisturbed areas. The second category consists of developed or disturbed areas with native vegetation, showing some reduction in species diversity. These areas also include exotic invasive species. The third category covers urban or developed areas, which do not host any functioning native plant communities; some natives may be present as landscape elements only. Within the San Diego River Natural Resources Management Plan Study Area, the healthy native plant communities are generally coincident with the areas identified for preservation under the City's Multiple Species Conservation Program (MSCP) Subarea Plan (see habitat conservation). These areas include: Mission Trails Regional Park (MTRP), sections of the San Diego River riparian corridor west of MTRP, tributary canyons to Mission Valley, and sections of the Mission Valley side slopes.

Disturbed areas are identified on the species of concern map; these areas generally correspond to locations where intense activity through land use or management occurs within or immediately adjacent to the channel. These areas include: current and historic resource extraction at Superior Mine, abandoned gravel pits adjacent to Admiral Baker Golf Course and downstream to I-5, Riverwalk Golf Course, Admiral Baker Golf Course, Carleton Oaks Golf Course, and sections of the floodway zone through Mission Valley. Areas classified as urban/developed on the species of concern map on page 125 are the dominant category of "plant community" in the study area. These areas typically consist of a combination of hardscape elements and irrigated landscaping.

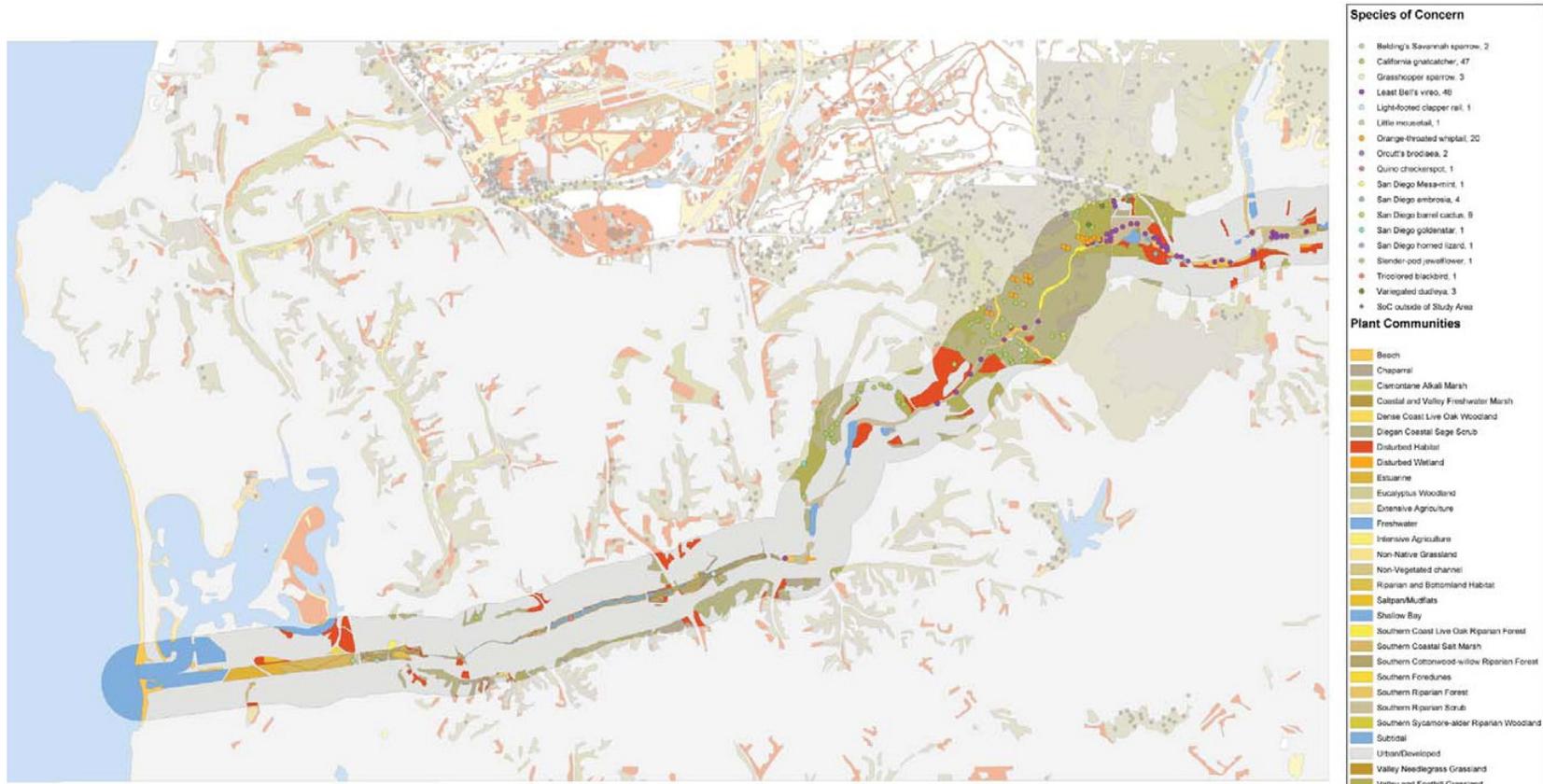
Development encroaches on the river for much of its length, with the only significant area of contiguous quality habitat being Mission Trails Regional Park. Below MTRP, the only areas that still support native plant communities and continue to function as habitat are lands that were historically unbuildable, such as the immediate river floodway, the steep side slopes of Mission Valley, and the steep side canyons. The valley floor, the historic floodplain and estuary, and the mesa tops are all developed, no longer functioning as habitat and effectively isolating most of the remaining patches of functional native habitat.



Exotic Vegetation Map

PLANT COMMUNITIES WITHIN THE STUDY AREA

Beach	Saltpan/Mudflats
Chaparral	Shallow Bay
Cismontane Alkali Marsh*	Southern Coast Live Oak Riparian Forest
Coastal and Valley Freshwater Marsh*	Southern Coastal Salt Marsh
Dense Coast Live Oak Woodland	Southern Cottonwood-willow Riparian Forest*
Diegan Coastal Sage Scrub*	Southern Foredunes
Disturbed Habitat*	Southern Riparian Forest
Disturbed Wetland*	Southern Riparian Scrub*
Estuarine	Southern Sycamore-alder Riparian Woodland
Eucalyptus Woodland*	Subtidal
Extensive Agriculture	Urban/Developed*
Freshwater*	Valley Needlegrass Grassland
Intensive Agriculture	Valley and Foothill Grassland
Non-Native Grassland*	* Denotes communities that are also in the San Diego River
Non-Vegetated channel/Floodway/Lakeshore Fringe*	Natural Resources Management Plan
Riparian and Bottomland Habitat	



Species of Concern

EXOTIC INVASIVE VEGETATION

Exotic vegetation was mapped and inventoried in 2002 as part of the San Diego River Invasive Exotic Weed Eradication Master Plan. The map included in this report is based on this plan, identifying areas of heavy infestation. Invasive species include Eucalyptus (*Eucalyptus* spp), Mexican Fan Palm (*Washingtonia robusta*), Canary Island Palm (*Phoenix canariensis*), Brazilian Pepper (*Schinus terebinthifolius*), Castor (*Ricinus communis*), Pampas Grass (*Cortaderia sellowiana*), Giant Reed (*Arundo donax*), Tamarisk (*Tamarix aphylla*) and the native Water Primrose (*Ludwigia peploides*). Three species of particular concern in the San Diego River Natural Resources Management Plan area are Pampas Grass, Giant Reed, and Tamarisk. The aggressive colonization habits of these species have a significant impact on

habitat quality. In the case of Giant Reed and Tamarisk, colonization, coupled with their prodigious water uptake, allows them to change soil moisture and water table levels to conditions that favor them at the expense of native riparian species.

The plant communities identified within the limits of study area—one half mile to either side of the river—are listed below. The descriptions follow the format used by SANGIS, which used the Holland 1995 classification for this dataset. This classification has a broad range of descriptions, including categories that are not plant communities in the traditional sense, but more as a cover or use designation. These categories include: beach, subtidal, extensive agriculture, shallow bay, urban/developed. An in-depth description of these communities can be found in the San Diego River Natural Resources Management Plan.

WILDLIFE

Shrinking habitat area and reduced habitat diversity limit the number of species within the study area. The species that are present are limited to those that can rely entirely on the remaining natural habitat to meet their needs, and the generalists who meet their needs through a combination of native habitat and resources available in developed areas.

In the upper reaches of the study area, the size, quality and connectivity of habitat areas is adequate to support a full complement of wildlife species, including large predators. The Mountain lion (*Felis concolor*) and the Bobcat (*Lynx rufus*) are large predators typically associated with the chaparral and coastal sage scrub habitat types that dominate Mission Trail Regional Park.

Habitat in the lower reaches is not adequate to support large predators. For this reason, the lower reaches have an ecosystem with a modified food web that almost completely excludes the top predators. In these areas, mesopredator populations (middle predators) such as Coyote (*Canis latrans*) or Raccoon (*Procyon lotor*) have expanded to fill the void left by the absence of top predators. This modified population profile is acceptable for this section of the study area because of the proximity of development and attendant concerns of safety.

Within the areas that cannot accommodate the needs of large predators, there still are smaller animals that have specific habitat needs and are sensitive to changes to their environment. Some of these sensitive species are covered by the San Diego MSCP Subarea Plan, which provides guidelines for their protection. These species are listed in the following section. Other sensitive species not covered by the San Diego Multiple Species Conservation Program Subarea Plan are listed in the San Diego River Natural Resource Management Plan. Detailed inventories of all wildlife species have been prepared as part of various Natural Resource Management Plans completed for sections of the study area. These include the Mission Bay Natural Resource Management Plan, the San Diego River Natural Resource

Management Plan, and the First San Diego River Improvement Project (FSDRIP) Natural Resource Management Plan. The stretch of river covered in these plans extends from the Pacific Ocean to Mission Trails Regional Park, excluding the Riverwalk Golf Course.

HABITAT CONSERVATION - MULTIPLE SPECIES CONSERVATION PROGRAM

The State of California passed the California Natural Communities Conservation Planning (NCCP) Act in 1992 to facilitate an ecosystem-based approach to preserving and protecting the state's remaining natural habitats and biodiversity. Plans are developed at the regional, subregional, and subarea level to meet the conservation goals of the NCCP Act. The United States Fish and Wildlife Service and the California Department of Fish and Game are the two natural resource agencies charged with reviewing plans to ensure compliance with the NCCP Act. The San Diego County Multiple Species Conservation Program Final Plan is one of eleven subregional plans within the Coastal Sage Scrub Region. Within this subregion, the City of San Diego is one of twelve subareas, and has developed an approved Subarea Plan. Approval of the plan conserves resources at the regional level while allowing the city to issue permits for incidental take of habitat at the local level. To ensure the conservation of resources, the City of San Diego Subarea Plan provides both general and specific guidelines, policies, and directives to minimize impacts to species and habitats. The City has also included clear guidelines for permitting of environmentally sensitive lands in their Land Development Code Biology Guidelines.



Courtesy M.B. Stowe

The list below catalogues plant and animal species with specific guidelines in the Multiple Species Conservation Program Subarea Plan identified as occurring or likely to occur in the study area. Species were identified through SANGIS data and the San Diego River Natural Resource Management Plan.

Belding's Savannah sparrow	<i>Passerculus sandwichensis beldingi</i>
California gnatcatcher	<i>Polioptila californica</i>
California Least Tern	<i>Sterna antillarum browni</i>
Cooper's hawk	<i>Accipiter cooperi</i>
Grasshopper sparrow	<i>Ammodramus savannarum</i>
Least Bell's vireo	<i>Vireo bellii pusillus</i>
Light-footed clapper rail	<i>Rallus longirostris levipes</i>

Little mouseling	<i>Myosurus minimus</i> ssp. <i>apus</i>
Orange-throated whiptail	<i>Cnemidophorus hyperythrus</i> <i>beldingi</i>
Orcutt's brodiaea	<i>Brodiaea orcuttii</i>
Quino checkerspot	<i>Euphydryas editha</i> <i>quino</i>
San Diego Mesa-mint	<i>Pogogyne abramsii</i>
San Diego ambrosia	<i>Ambrosia pumila</i>
San Diego barrel cactus	<i>Ferocactus viridescens</i>
San Diego goldenstar	<i>Muilla clevelandii</i>
San Diego horned lizard	<i>Phrynosomacoronatum</i> <i>blainvillei</i>
Slender-pod jewelflower	<i>Caulanthus stenocarpus</i>
Southwestern pond turtle	<i>Clemmys marmorata</i> <i>pallida</i>
Southwestern willow flycatcher	<i>Empidonax extimus</i> <i>traillii</i>
Tricolored blackbird	<i>Agelaius tricolor</i>
Variegated dudleya	<i>Dudleya variegata</i>
White-faced ibis	<i>Plegadis chihi</i>

The San Diego County Multiple Species Conservation Program Final Plan identifies Mission Trail Regional Park and the East Elliott area as one of sixteen biological core areas and the San Diego River riparian corridor west of Mission Trails Regional Park as a linkage between them and to the Pacific Ocean. The Mission Valley side slopes and the tributary canyons are identified in the City of San Diego Multiple Species Conservation Program Subarea Plan as urban habitat areas, which in the study area are not included as part of any of the major planned areas in the Multiple Species Conservation Program Subarea Plan. The majority of urban habitat areas consist of canyons with native habitats in relative proximity to other Multiple Species Conservation Program areas providing habitat. These areas contribute in some form to the Multiple Habitat Planning Areas (MHPA), either by providing habitat for native species to continue to reproduce and find new territories, or by providing necessary shelter and forage for migrating species (mostly birds). These areas contain a mix of habitats including coastal sage scrub, grasslands, riparian/wetlands, chaparral, and oak woodland. The lands are managed pursuant to existing Natural Resource Management Plans, Landscape Maintenance Districts, as conditions of permit approval, or are currently not managed. The areas also contribute to the public's experience of nature and the local native environment.

APPENDIX E - RECREATION INVENTORY

ACTIVE AND PASSIVE RECREATION

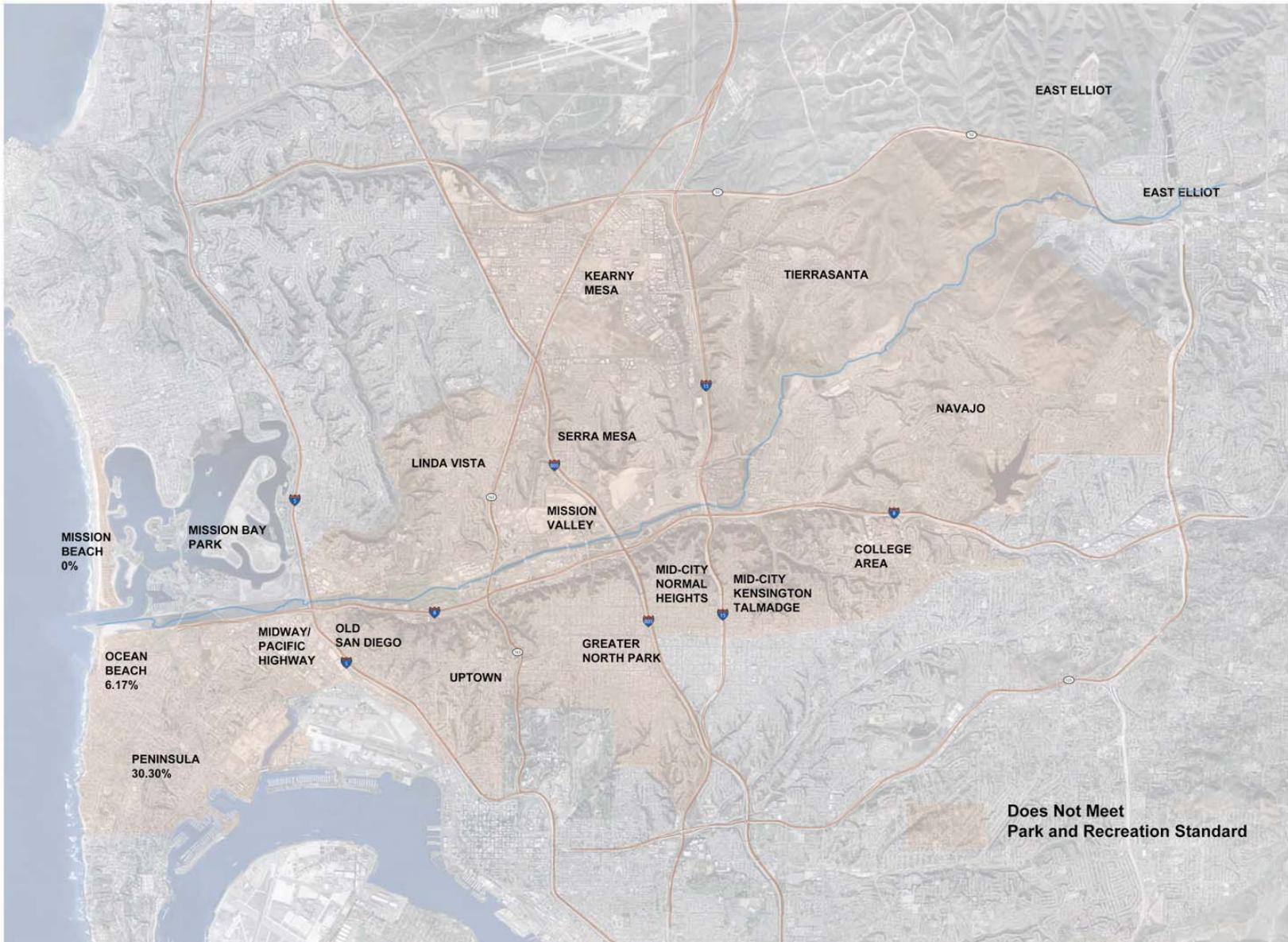
Recreation Introduction

A major objective of the Master Plan is to identify the range of recreation opportunities along the San Diego River. This section focuses on Programmed Recreation defined as multi-purpose sports facilities, sports fields and parkland suitable for organized sport activities, as well as major circulation trails. Passive recreation, such as picnic areas, nature study, hiking trails, interpretation of cultural sites and other activities related to specific resources which are discussed separately in those specific reach recommendations. To supplement public recreation resources, the San Diego River Valley has many private facilities that offer commercial recreation. The relationship of those facilities to the San Diego River Park is discussed. The appreciation of the river as a passive recreational resource should be a fundamental part of recreation and land use planning in the river valley.

Recreation Goals

Although the study area for the San Diego River Park is a 1/2 mile corridor on each side of the river, existing facilities and recreation needs were examined within the 16 adjacent community planning areas of the City of San Diego. The City's General Plan has established a minimum 2.8 acres of population-based parks per 1,000 residents as the required park acreage goal throughout the City. Recommendations for new open space and recreational facilities are focused along the San Diego River. Open, developable land for new parks is very limited throughout these 16 communities and many of them are in deficit for park acreage, according to Park and Recreation Department calculations. The river valley, in concept, is an appropriate place to provide recreation sites for many reasons:

- The valley can be a “common” for the city.
- It is central and accessible to many neighborhoods from streets and transit.
- The river and recreation can be linked with communities.
- Residential population is growing in the river valley and adjacent communities.
- Recreation open space can reinforce natural open space and habitat.
- The river valley can be a beautiful setting for recreation.
- Some open land remains in the valley.
- Recreation land can provide flood overflow areas.



Communities are deficient in Population-based Park requirements per the General Plan

An overall goal is to balance recreation with conservation and habitat. Riparian habitats, particularly in California, have been diminished over time due to human development. In proposing recreation for the communities along the river corridor, new recreation facilities can be created where the need exists, where they are accessible to the community and in locations which do not require displacement of existing development. The proposed east-west multi-use river pathway, as well as the connecting north-south bike and pedestrian paths, can link neighborhoods to the proposed parks and regional recreation facilities.

Site planning criteria for new recreation sites takes into account new environmental considerations and factors including hydrological improvements, habitat creation and vegetation buffers. In addition, new construction materials for recreation facilities would take a design cue from the riparian character. In summary, general goals for recreation planning include the following:

- Define criteria for locating recreation sites relative to other objectives.
- Identify potential locations for recreation acreage that is identified in Community Plans.
- Identify additional recreation opportunities that may meet needs currently unaddressed in Community Plans, or other regional needs.
- Complement and reinforce resource-related opportunities such as nature study and enjoyment of the river and its cultural and geographic significance.
- Provide a program for recreational uses for each location or use area that is proposed.
- Identify design issues and criteria for proposed recreation areas.

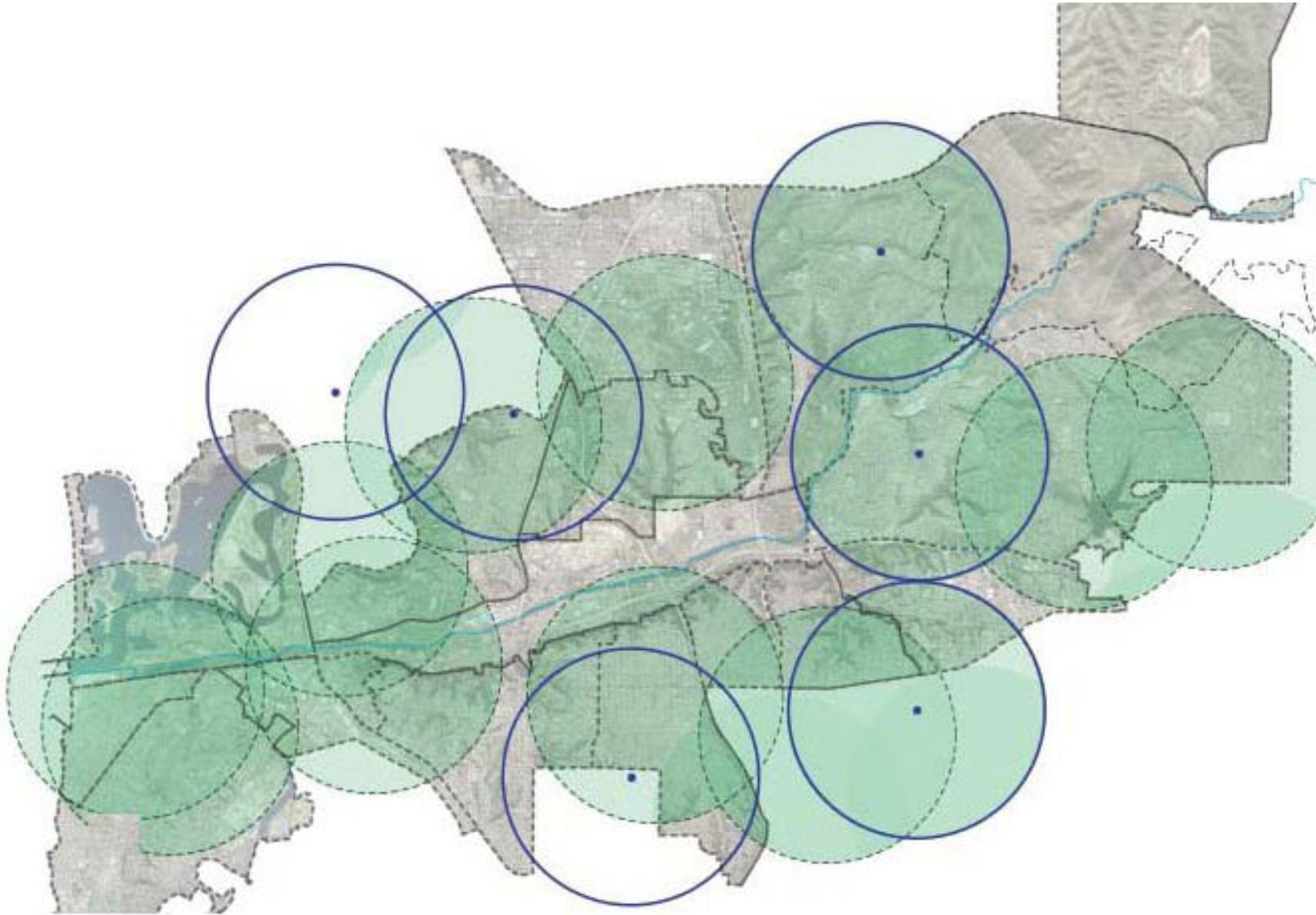
Analysis of Recreation within Community Plan Areas

The City of San Diego “General Plan” provides population-based park acreage goals of 2.8 acres per 1,000 citizens. Population-based parks include; Community Parks, Neighborhood Parks, Mini Parks, and Pocket Parks. Community parks are defined as: 13 acre minimum, serves a population of 25,000, typically serves one community plan area but depending on location, may serve multiple community planning areas, parking is provided. Typical components include passive and active recreation, recreation centers, aquatic complexes and multi-purpose sports fields. Neighborhood parks are defined as: 3 to 13 acres, serves a population of 5,000 within approximately one mile, accessible primarily by bicycle and walking with minimal parking as necessary, only if five acres or more. Typical components include picnic areas, children’s play areas, multi-purpose courts, multi-purpose turf areas, and comfort stations. Mini Parks are defined as one to three acres, serves a population within ½ mile, accessible by bicycle and walking, no on-site parking, except accessible parking. Typical components include picnic areas, children’s play areas, multi-purpose courts and multi-purpose turf areas. Pocket parks are

defined as less than one acre, serves a population within ¼ mile, accessible by bicycle and walking, no on-site parking, except accessible parking, Typical components include a primarily hardscape area with picnic areas, children's play areas, multi-purpose courts and multi-purpose turf areas.

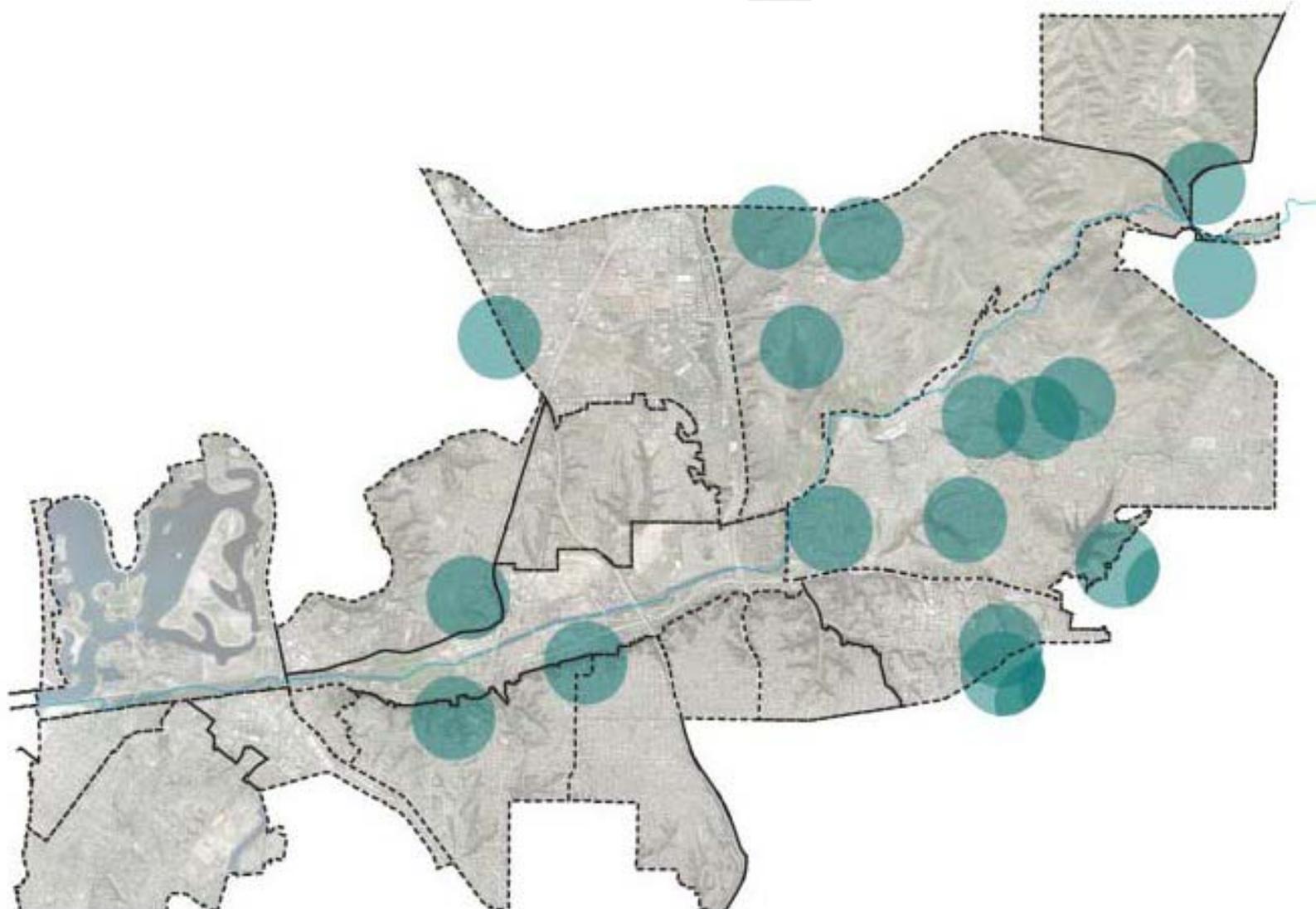
Using 2.8 acres of population-based parks per 1000 residents and the most recent population figures and SANDAG projections, the Park and Recreation Department determines the population-based park acreage goal for each community. Using these calculations, the Park and Recreation Department has determined that most urbanized communities are park-deficient. Without additional acreage, the average park deficit will continue to increase with a growing population.

DRAFT



Active Recreation Facilities – Neighborhood Parks

Because most of the communities along the river corridor have little available land for new recreation facilities, Park and Recreation could conceivably develop a policy to aggregate recreation from several communities and locate a convenient regional recreation facility in the river valley.



Active Recreation Facilities – Community Parks

Most of the Mission Valley community is within the San Diego River Park study. Significant portions of the following communities are within the study area: Navajo, Tierrasanta, Linda Vista, Mission Bay Park, Ocean Beach, Midway/Pacific Highway and Old Town San Diego. The study area lies within smaller portions of the communities of Mission Beach, Peninsula, Uptown, Greater North Park, Mid-City, Kensington, Serra Mesa, Kearny Mesa, College Area and East Elliot. To the east, the study area meets the City of Santee. One reason for the deficit of recreation land within these communities is that some portions of the recreation requirements may have been permitted to be satisfied with private open space within new developments, particularly in Mission Valley. This has yielded private recreation amenities such as tennis courts, gyms, pools and meeting rooms for project residents, but these facilities are not available to the public and therefore are not counted as part of existing recreation. This policy has changed and Mission Valley Community Plan update, which is currently underway bases population-based park requirements on public facilities.

Mission Valley, Navajo, Tierrasanta community plans have specific recommendations for recreation within the river corridor study area. Some other community plans have general recommendations for trail connections, view areas over the valley, or open spaces that may be linked.

Community parks that service areas within 1/2 mile of the river:

- Ocean Beach Athletic Facility (Robb Field)
- Cleator Community Park
- Presidio Community Park (a regional passive park, without typical community park facilities)
- Allied Gardens Community Park (with swimming pool)
- Tierrasanta Community Park
- Mission Valley YMCA (although a private facility, the pool is considered a public facility as part of an agreement in which the facility is located on public land)

Neighborhood parks that service areas within the river valley area:

- Collier Park
- Dusty Rhodes Park
- Sefton Field
- Mission Heights Park
- Mission Hills Park
- Old Trolley Barn Park
- Grantville Park
- Roadrunner Park
- Rancho Mission Canyon Park

Other Existing Public Recreation Facilities

The public can use recreation fields and some other facilities of selected public schools where the City has a “joint-use agreement” in place with the school district. To avoid conflict with school programs, public access is generally limited to after school hours. The acreage within the joint-use facilities is included in the park and recreation inventory.

Resource-based parks, such as Mission Bay Park and Mission Trails Regional Park, are not counted in population-based park inventory. These parks serve the regional resident and/or visitor population, are located at the site of distinctive scenic, natural, historical or cultural features and provide habitat and resource protection. Open Space land is defined as City-owned land, canyons, mesas and other natural landforms, exclusive of shorelines. These areas serve single or multiple community plan areas and provide for habitat protection. Open space land is also not included in the population-based park inventory. Open Space is used for purposes such as:

- Preservation of natural and cultural resources
- Passive outdoor recreation
- Public health and safety
- Control of urban form
- Scenic and visual enjoyment

In addition, the state and federal governments own significant land areas within the river valley area that can be considered open space, or in some cases recreational areas. These include the following:

- Caltrans rights-of-way (State, freeway and interchange landscape areas)
- Admiral Baker Golf Course and Park (Federal, Navy golf course, swimming pool, picnic area, community building, gym)
- Army Corps of Engineers (Federal, river and tributary channels, floodways and structures)

Private Recreation or Recreation Related Facilities

The River valley currently offers a wide array of commercial and retail attractions and recreation that can contribute to and benefit from the San Diego River Park. Like the downtown and beach areas of San Diego, many of these facilities are part of the tourist environment of the City, but are heavily used by residents as well. The obvious example is Sea World, but even the shopping malls in the valley are

often used as a recreational resource for family outings, and the more integrated these facilities become with the San Diego River Park, the more residents and visitors will identify with the river as a significant resource for the region.

These facilities should be linked with trails and integrated with the landscape character of the river. They include:

- Recreation
- Golf Courses: Carlton Oaks, Riverwalk, Admiral Baker, Old Town State Historic Park
- Presidio Park
- Sea World
- Sports Arena
- Qualcomm Stadium and practice fields
- Mission Valley YMCA
- Sefton Field
- Numerous health clubs
- Hotels, resorts and spas
- Private residential recreation areas
- USD athletics and recreation
- San Diego Mission School recreation
- Admiral Baker community park area
- Private school sports facilities

Attractions with recreational qualities

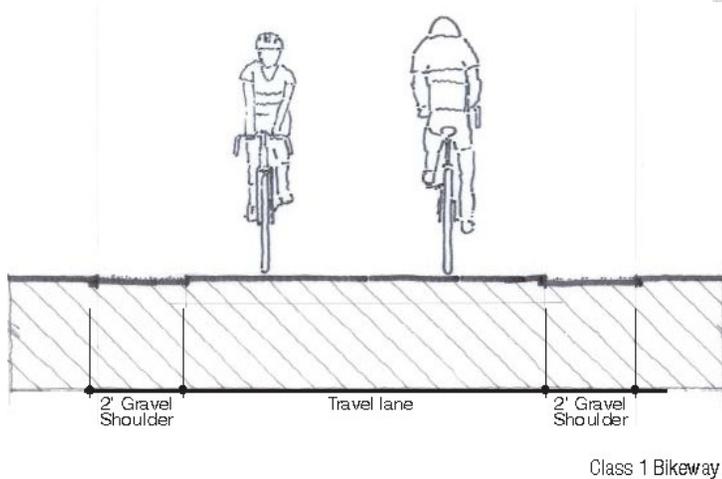
- Sea World
- Old Town State Historic Park
- Presidio Park
- Serra Museum
- San Diego Mission and School
- Mission Valley Library
- Mission Bay Concessions
- Hotels, resorts
- Sports Arena
- Qualcomm Stadium
- Fashion Valley Mall/Cinemas
- Mission Valley Mall/Cinemas
- USD facilities
- Restaurants and Clubs

Pathways and Trails

Trails analyzed in this section include those which provide access from communities to the river valley as well as the east to west multipurpose river pathway, which provides access along the river corridor.

Pathways and Trail Goals

- Continuous east to west multi-purpose river pathway from the ocean to Santee.
- Create lateral links for bicycles and pedestrians to all communities, transit, recreation, interpretive, public and private facilities adjacent to the river corridor.
- Provide trails for horses in the eastern part of the corridor.
- Provide staging areas and conveniences such as bicycle parking, rest areas and overlooks to encourage use of the river pathway.
- Locate pathways and trails where they provide convenient access and an enjoyable setting.
- Locate pathways and trails where they conflict least with habitat and river hydrology.



Class 1 Bikeway

Existing Circulation Pathways and Trails

An east to west multipurpose river pathway system is partially established in the corridor and fairly convenient bicycle access is possible from adjacent communities and between sections of off-street paths. However, pedestrian access from communities is extremely limited; the east to west multi-use river pathway is interrupted by awkward street crossings and many of the missing pieces of the river pathway system use on-street bicycle connections that are dangerous.

Existing pathways and trails consist of a multi-use pathways for bicycles and pedestrians in the central part of Mission Valley (completed as part of the FSDRIP), multi-use pathways on the levees in the estuary, trails in existing parks (Mission Bay Park, Dusty Rhodes Neighborhood Park, Mission Trails Regional Park) as well as on-street bikeways and sidewalks. Equestrian uses are allowed in Mission Trails Regional Park on some designated trails, but horses are not envisioned for the San Diego River multi-purpose pathway.

The “multi-use pathway” at FSDRIP is a 10-12 ft. wide paved path on both sides of the river. A criterion for the river path is that it be a bike-pedestrian shared path parallel to the river. Per a Caltrans Highway Design Manual (Feb. 1, 2001) recommendation, the shared recreation path is not intended as a high-speed transportation facility for bicycles. Where space allows, the San Diego River Park Master Plan proposes that a multi-purpose river pathway be provided on both sides of the river for bicycle and pedestrian traffic. The Master Plan states that trails are unstructured pedestrian only paths that are a maximum of five feet wide and of natural material such as decomposed granite. Trails are provided from the River Pathway as continuous loops.

Pathway and Trail Definitions

City of San Diego

“Multi-use Pathway or Trail” is a term already used in City of San Diego Community Plan documents to describe a Class I bikeway that is shared with pedestrians. City of San Diego “Transit and Bike Route” plans define the width of the multi-use pathway or trail as 8’ to 12’ with a 2’ soft shoulder on each side. The Transportation Department of the City of San Diego defines the multi-use pathway as generally 10’ wide with 2’ shoulders and paved to meet ADA standards with concrete, asphalt, “resin pavement” or other similar surface.

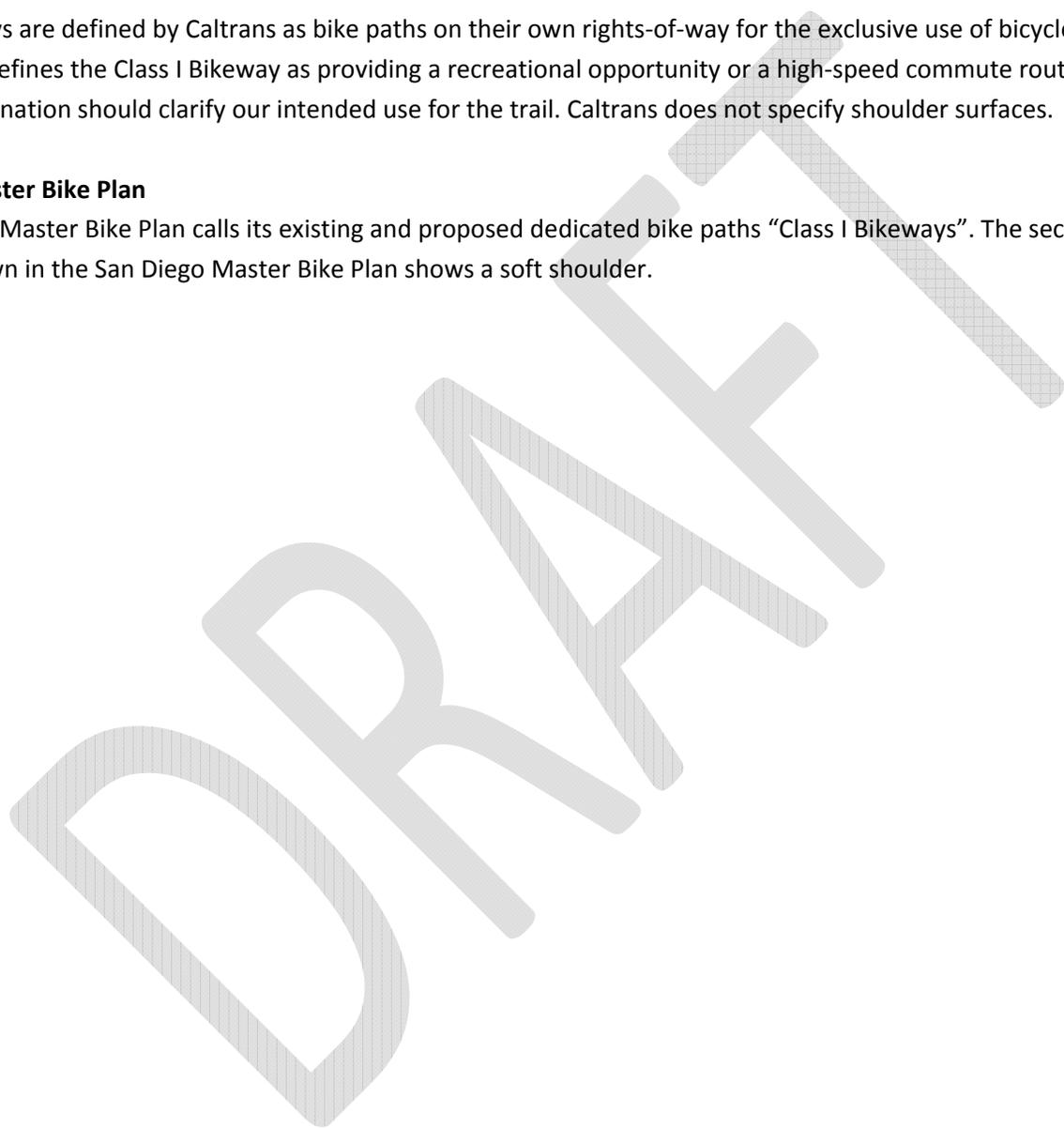
Refer to Design Guidelines, Section 5.0, for specific pathway and trail definitions used in this Master Plan.

Caltrans

Class I Bikeways are defined by Caltrans as bike paths on their own rights-of-way for the exclusive use of bicycles and pedestrians. Caltrans also defines the Class I Bikeway as providing a recreational opportunity or a high-speed commute route. Therefore, the “multi-use trail” designation should clarify our intended use for the trail. Caltrans does not specify shoulder surfaces.

San Diego Master Bike Plan

The San Diego Master Bike Plan calls its existing and proposed dedicated bike paths “Class I Bikeways”. The section of the “Class I Bikeway” shown in the San Diego Master Bike Plan shows a soft shoulder.



APPENDIX F - HISTORIC AND CULTURAL RESOURCES INVENTORY

GEOLOGIC HISTORY

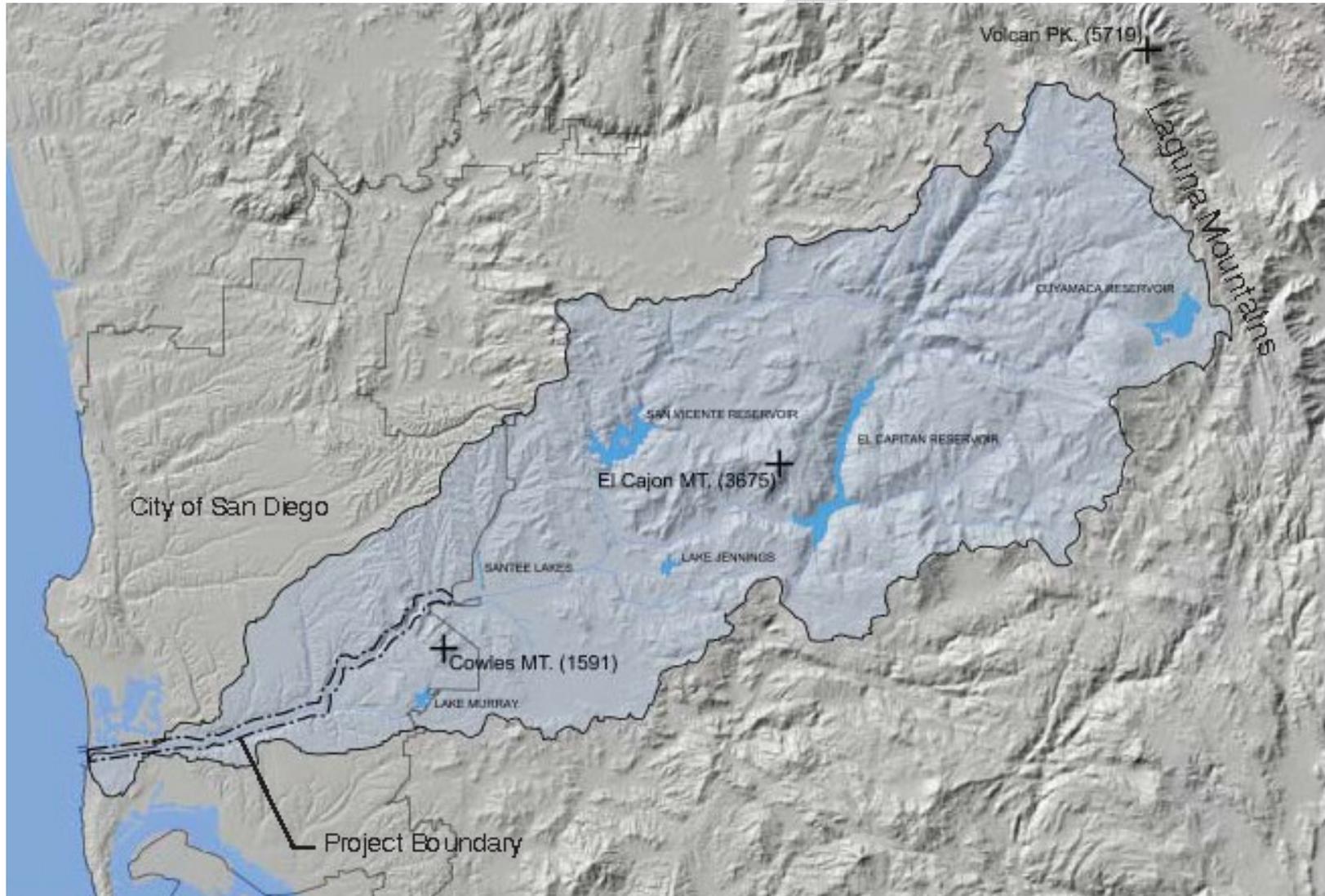
Rivers have been fundamental to the shaping of the earth's surface since vapor first coalesced into raindrops and fell to earth. Since then, by collecting into ever larger and more powerful channels from rivulets to gullies to streams and rivers, water has carved the surface of the earth and redistributed materials through erosion and sedimentation. The geologic terrains aggregated over the past one and a half billion years, drifting layer by layer into the North American plate creating the land mass that now constitutes California. The Sierras continue to rise more rapidly than they erode; the evidence of this land mass's relatively young age is seen and felt in the earthquakes occurring along many faults that outline the edges of what were once separate land masses. The erosion of the California landscape is more visibly evident than in many places. The combination of its young geology and pattern of rain fall results in a pattern of erosion that is often abrupt and eventful.

As the earth evolved, the fundamental process of erosion was influenced by two critical events. The first event was the development of vascular plants. Early vegetation existed in swamps and other lowlands, and the adaptation to higher and drier conditions likely occurred in riparian (river related) environments. The subsequent rapid expansion of plants across the surface of the earth dramatically changed the environment by stabilizing much of the earth's surface, fundamentally impacting the erosion processes and the behavior of stream flow itself. The plant species that made up the riparian vegetation of a stream corridor affected the basic structure and patterns of the stream flow, and as the vegetation evolved or otherwise changed over time, the pattern of the stream itself was changed.

The second critical event was the arrival on earth of humans a species with the ability to think, manipulate and fundamentally change the environment. Water access and rich floodplain soils often drew early peoples to river valleys, and the earliest humans migrated into southern California at least ten thousand years ago. The Kumeyaay settled in the San Diego River watershed at about this time, although their impact on the behavior of the river was minimal. Only with the late eighteenth century arrival of Europeans, with the ingenuity and desire to control water on a larger scale, did the character of natural stream flow begin to change dramatically.

The effect of these two fundamental events is clearly manifested in the historic changes to the San Diego River. Once an ephemeral waterway, often dry in the summer and occasionally flooding, the San Diego River carved through the granitic tilted fault block of California's Peninsular Range and the coastal terraces spilling onto the coastal plain. As these terraces uplifted and tilted, the River carved the Gorge in what is now Mission Trails Regional Park, leaving the promontories now known as Cowles Mountain and Fortuna Mountain. Ongoing stream erosion subsequently created Mission Valley and its tributary canyons through the softer material of the

Linda Vista Formation and Poway Group conglomerates. Seasonal flooding would often flush nearly all vegetation from the floodplain and deposit nutrient-rich sediments as it spilled onto the flatter terrain of the valley. These deposits created a rich alluvial plain and built the coastal beaches with sand and minerals carried down from the mountains.



San Diego River Watershed

HUMAN HISTORY

The earliest occupants of the valley changed the river little. The riparian zone provided habitat for food sources and vegetation from which dwellings, clothing and baskets were made. The valley also served as a transportation corridor between the uplands and the ocean.

With the arrival of the Spanish in the late eighteenth century, pressure on the valley landscape began to increase. The first mission and presidio were built on a hillside above the Kumeyaay village of Cosoy near Old Town and the Mission was relocated near Nipaguay shortly thereafter where it remains today as the San Diego Mission de Alcala



Riparian habitat

The expanding mission and conversion of Kumeyaay people to Christianity led to an increasing population in the valley. The Spanish introduced agriculture and cattle to the valley and built the first dam above the gorge by 1815. The Mission Flume was constructed from the dam to bring water to crops and livestock at Mission San Diego de Alcala down valley.

As California gained statehood and the city and county of San Diego were established in 1850, change began to occur more rapidly. The Derby Dike was constructed by the Army Corps of Engineers, effectively isolating the San Diego River from half of its natural delta and estuary to San Diego Bay, and diverting the flow permanently to False Bay, now known as Mission Bay. Population of the valley began to grow significantly and along with it the demand for a reliable water supply. By the end of the 19th century numerous dams had been constructed throughout San Diego County, including the El Capitan and San Vicente on the San Diego River. These dams isolated the lower San Diego River watershed from its headwaters and upper reaches, drastically changing the hydrologic pattern of the river and its seasonally diverse flows. The sand and gravel industry developed within the valley to meet demand for the construction of roads, dams, jetties and railroads.

Today, the river is a remnant of its past significance as it flows through the City of San Diego. As the City went through extensive growth following World War II, development began to move from the mesas and into the river valley itself. Until the 1950's the valley was still primarily agricultural land and served as place for relief from the burgeoning urban environment. Within two decades the valley was dramatically altered as the ranches, dairy farms and truck farms were replaced by highways, shopping centers, parking lots and offices. Sand and gravel mining already in the valley increased operations to meet the demands of the expanding development. Through this

evolution, the river became treated not as a focus within the valley but rather an engineering and flood problem to be solved. Development has typically turned its back on the river, lining the stream corridor with loading docks, parking lots and roadway embankments. Land use laws have allowed development to occur within the floodplain, forcing the river into an increasingly channelized condition, reducing meander, groundwater recharge, sediment transport and water filtration. Uncontrolled urban runoff has further diminished the water quality of the river. These changes have affected the natural riparian habitat that once flourished in the valley, by diminishing not only its extent, but its overall quality by disrupting the connections to the upland environment of the valley walls. Through this process much of the evidence of the river's historic value to the region has been lost. Kumeyaay rancheria sites have been developed as golf courses, the Mission flume disrupted and damaged, and other sites are threatened by development and damage from vandalism.



Old Mission Dam, Mission Trails Regional Park

Prehistoric Land Use

The San Diego River valley was first settled nearly 10,000 years ago. Known as part of the La Jolla Complex, these people used the coast and the marshes of the San Diego River extensively, as hunting grounds and as sources for materials for shelter, tools and clothing. The valley is also believed to have served as a significant movement corridor between the coast and the mountains.

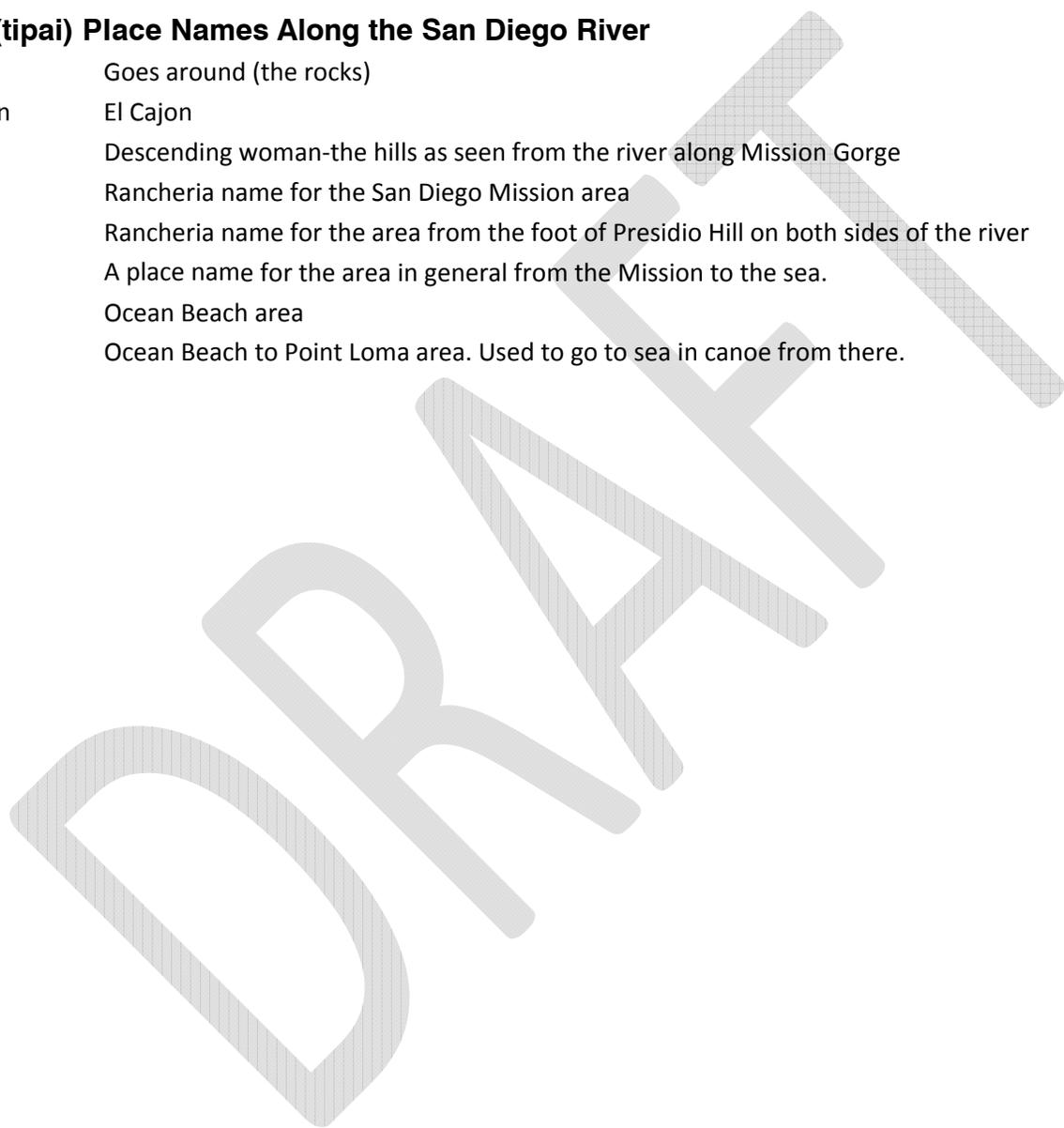
During the Late Prehistoric (Kumeyaay Period), from circa 2,000 years ago to the Spanish era, at least three Rancherias existed along the river in what is now the City of San Diego, along with outlying camps and special use areas.

Opportunities and recommendations

- Create a sense of place at Mission San Diego de Alcalá and the Presidio celebrating Nipaguay and Cosoy history as Spanish.
- Support interpretation of rock art sites in Mission Trails Regional Park
- Support interpretation of Bedrock Milling sites within Mission Trails Regional Park
- Support interpretation of Cowles Mountain was a solstice and equinox observatory

Kumeyaay (tipai) Place Names Along the San Diego River

'Ewiiykaakap	Goes around (the rocks)
'Amotaretuwen	El Cajon
Sinyaweche	Descending woman-the hills as seen from the river along Mission Gorge
Nipaguay	Rancheria name for the San Diego Mission area
Cosoy	Rancheria name for the area from the foot of Presidio Hill on both sides of the river
Qujar	A place name for the area in general from the Mission to the sea.
Paulpa	Ocean Beach area
Qapai	Ocean Beach to Point Loma area. Used to go to sea in canoe from there.



HISTORIC LAND USE AND KEY PEOPLE

Spanish Period

The first mission was developed on Presidio Hill in 1769 as part of the first Alta California presidio and settlement. Early leaders included Rivera y Moncada and Father Junipero Serra. In 1774, Mission San Diego de Alcalá moved near to the current site (but not exactly where it is today) overlooking the San Diego River valley at confluence with Alvarado Creek. During this period Mission San Diego de Alcalá was lead by Father Junipero Serra and Father Luis Jayme. To support the burgeoning population of both immigrating Spaniards and Natives converted to Christianity, improvements to the efficiency of agricultural production and obtaining an adequate and reliable water supply were necessary. To achieve this the Mission Dam and Flume system were constructed during the period from 1813 to 1816. Additional water ditches (la zanjás) were built in Grantville and to supply Old Town during this period.

Mexican Period

- Land Grants and Vaqueros (1821-1846)
 - Pio Pico
- Pueblo of San Diego (now Old Town)
 - Juan Bandini
 - Pio Pico
 - Arguellos
 - Estudillos

American Period

- Derby Dike to divert the river (1855)
 - George Derby
 - Manuel Cota and Indian laborers
- Farming and Ranching in the Valley
 - Early Farms and Ranches
 - Sandrock Family
 - John Murphy (1860-1870)
 - George and Jennie CoMes (1877)
 - Milton and Jennie (Cowles) Santee (1890)
 - Japanese Truck Farms
- Dairy Industry
 - Serano Allen Family (1885-1957)
- Sand and Mining Operations
 - Ferraris
 - Others
- Commercial and Retail
 - Meat Packing Plants (Cudahay and others) in the Morena District
 - Development of Highway 80 as east/west Corridor
 - Motels associated with Highway 80
 - Town & Country Hotel (1959)

- Le Baron Hotel (1967)
- Development of Mission Valley Center (circa 1958)
- Development of Fashion Valley
- Office Development
- Recreational
 - Early Use for Fishing and Swimming
 - Duck Clubs and Hunting
 - Horse Tracks
 - Westgate Ball Park
 - Golf Courses
- Hiking and Day Trips (Mission Dam, Spring Canyon)
- San Diego Jack Murphy Stadium (1967)
- Transportation
 - El Camino Real
 - Railroad (AT&SF)
 - Highway 80
 - Highway 395 (163) [1949]
 - Early Bridges across the River
 - Pike (Mission Bay) Airport
 - 1-805 Bridge Structure (1972)

RECENT HISTORY PLACE NAMES

Names tell a lot about the land and the people, often suggesting the deeper reasons why a place has evolved to its current condition.

Older Place names

Sandrock Road (Texas Street)
 Duckville
 Cudahy Slough
 Blood Alley (101)
 Sixth Street Extension
 Gravilla
 Overlook
 False (Mission) Bay
 Fanita Ranch

Current Place names

Cowles (kohls) Mountain
 Dog Spring
 Spring Canyon
 Grantville
 Gravilla
 Murphy Canyon
 Murray Canyon
 Alvarado Canyon
 Adobe Falls
 Mission Valley

APPENDIX G - UTILITIES INVENTORY

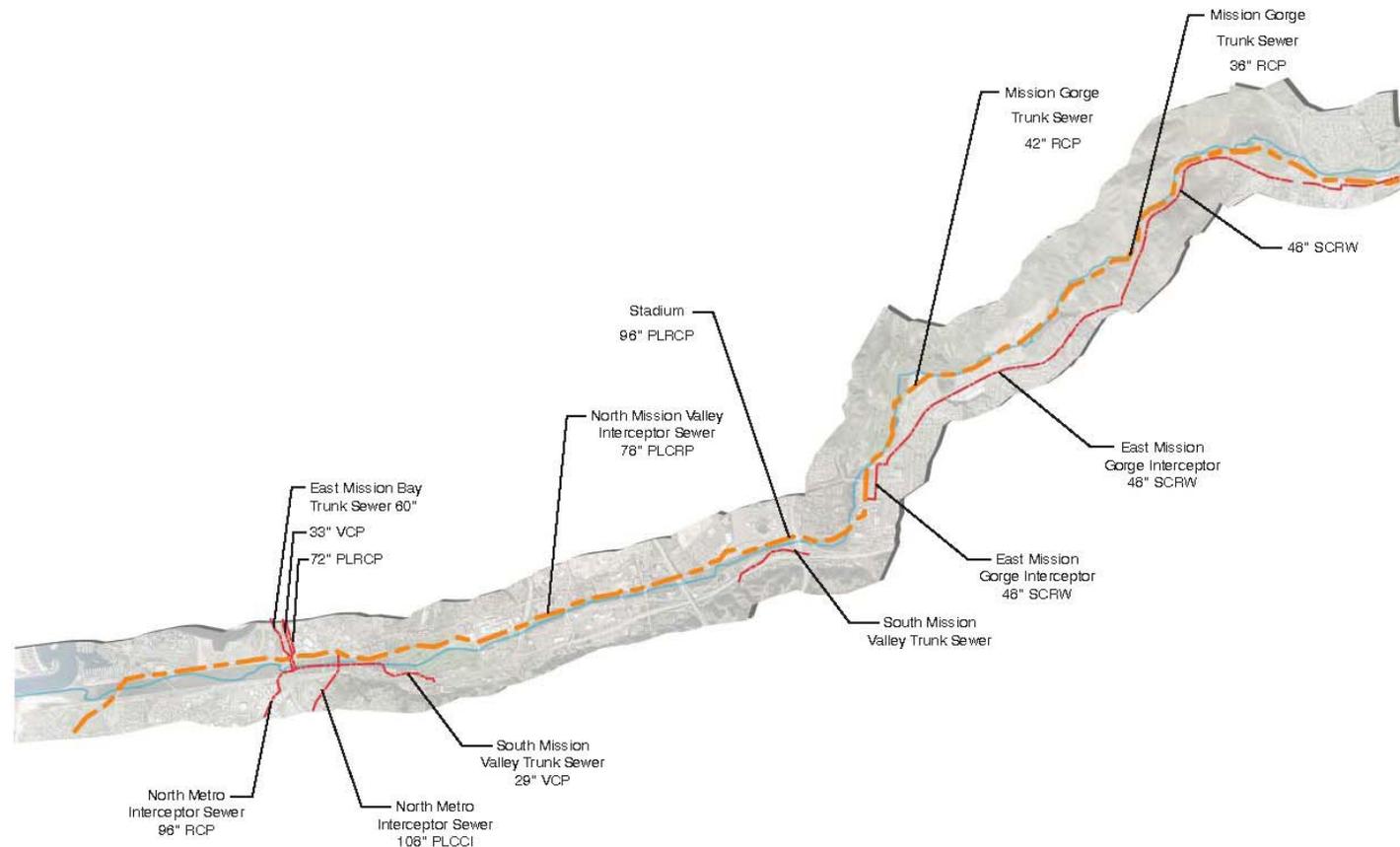
UTILITIES

Existing utilities within the planning area present both constraints and opportunities. The constraints are primarily near-term issues. It is necessary to plan proposed improvements around some existing facilities, and to protect vital infrastructure. In the longer view, planning should guide the placement of utility corridors instead of the other way around. Except for the major facilities described below, most utilities within the planning area can be relocated as necessary to accommodate improvements as described in this Master Plan. For those utilities that must remain in place, opportunities will exist in the future to replace aging facilities. At that time, replacement utilities should be sited in locations that are compatible with the San Diego River Park Master Plan.

SANITARY SEWERS

A trunk sewer and an interceptor sewer traverse the entire length of the planning area, aligned generally following the valley floor. The location of sanitary sewer pipelines relative to the actual river bed varies. In some places the sewer is in the riverbed. In other places, the sewer is in or near the bank of the river. In still others, the sewer is far removed from the river. In addition to the major sewer lines described below, numerous outfall sewers tie into the system, some of them beneath the river bed.

At the easterly City limits there are two sanitary sewer two pipes flowing to the west – the East Mission Gorge Interceptor (EMGI), a 42-inch diameter concrete pipe and the Mission Gorge Trunk Sewer (MGTS), a 48-inch diameter steel pipe. These two pipes are aligned between Mission Gorge road and the river. The EMGI follows the alignment of the Father Junipero Serra Trail and Mission Gorge Road. The MGTS is located in the valley floor, sometimes in and sometimes out of the river bed. The diameter of the MGTS in this reach varies from 36 inches to 42 inches. In the Grantville area the two pipes come together, becoming the North Mission Valley Interceptor (NMVI). The NMVI crosses the river at San Diego Mission Road and continues flowing west through Mission Valley, located along the north bank of the river. The NMVI is a concrete pipe, varying in diameter between 78 inches and 96 inches.



Sewer Location Diagram

Also in Mission Valley, the South Mission Valley Trunk Sewer (SMVTS) flows westerly, south of the river. This pipe is generally aligned along Camino Del Rio North and Hotel Circle North, then along the river bank, through the baseball fields, then under Morena Boulevard and Interstate 5.

Both the NMVI and the SMVTS flow to the North Metro Interceptor Sewer (NMIS) which carries sewage south to the treatment plant in Point Loma. Near the San Diego River, the NMIS consists of two pipe systems. The easterly branch is a 108-inch diameter concrete pipe beneath Morena Boulevard and Taylor Street. The westerly branch is a 96-inch diameter concrete pipe running along the west edge of

Interstate 5, then south beneath Rosecrans Street. The westerly branch is fed by two sewer pipes crossing the river just west of Interstate 5. One pipe, an extension of the East Mission Bay Trunk Sewer, is 60 inches in diameter. The other is 72-inches in diameter. These two pipes join together south of Interstate 5, becoming the westerly branch of the NMIS.

West of Interstate 5, a 14-inch diameter sludge line is located along the north bank of the river channel. This pipe crosses the river at Sunset Cliffs Boulevard. East of Interstate 5, the sludge line runs east beneath Friars Road, then north under Via Las Cumbres.

Discharges of raw sewage into the San Diego River caused by blocked or overflowing sewer mains have been a major problem in the past and continue to this day in spite of the best efforts of the City to prevent such occurrences. In 2001, the Metropolitan Wastewater Department initiated a Sewer Spill Reduction Program funded by sewer rate increases. This program includes cleaning and inspecting thousands of miles of sewer as well as accelerating the replacement and rehabilitation of older facilities. General guidance for sewer facility replacement and management in environmentally sensitive lands is provided by City Council Policies 400-13 and 400-14, both adopted in January 2002. Council Policy 400-14 makes the redirection of sewer flow away from environmentally sensitive lands a priority.

In the San Diego River Valley, the potential for damaging sewage spills has been reduced but not yet eliminated. There are a number of factors contributing to the problem. Through most of the study area, there is nothing to prevent sewage spills from flowing directly into the river. In some places, sewer mains actually lie under the river. Also, many sewer manholes are not easily accessible to maintenance crews and equipment, making both maintenance and emergency response difficult.

A complete solution to the sewage spill problem in the San Diego River Valley could include the following: (1) Relocating sanitary sewers out of the river bed; (2) Redirecting sewage flow away from the valley floor; (3) making sewers more accessible for maintenance and repair; and (4) providing the means for the physical containment of any spills. As sewers in sensitive areas near the end of their useful service life, the Metropolitan Wastewater Department considers the redirection of flow as prescribed in Council Policy 400-14. However, it is not yet practical to relocate all the trunk sewers away from the valley floor. In the future, the rapidly improving technology in the field of trenchless construction and tunneling may make possible such a goal.

Relocation of trunk sewers and redirection of flow are a major expenses that cannot feasibly be included as part of this Master Plan. However, access to sewer manholes and planning for the relocation of facilities in the future should be a consideration in any development within the area.

THE SAN DIEGO AQUEDUCT

The third and fourth pipelines of the 2nd San Diego Aqueduct cross the river within Mission Trails Regional Park north of Jackson Drive.

WATER TRANSMISSION PIPELINES

A number of water pipelines exist within the river valley. Development within the planning area will need to address the protection and continuing operation of water transmission pipelines that cross the river including:

- The Montgomery Pipeline, a 36-inch pipeline that crosses the river near the southerly end of the Admiral Baker Golf Course.
- The Alvarado 2nd Pipeline, a 48-inch steel cylinder pipe that crosses the river east of Interstate 15.
- A 16-inch iron pipe that crosses the river east of the stadium.
- The Kearny Mesa Pipeline, a 36-inch steel cylinder pipe that crosses the river east of Interstate 805.
- A 16-inch diameter asbestos cement pipe beneath Fashion Valley road.
- A 16-inch diameter cast iron pipe that crosses the river at Morena Boulevard.
- The Pacific Beach Pipeline, a 20-inch diameter pipe that crosses the river under West Mission Bay Drive.

Additionally, the El Capitan Pipeline, a 36-inch diameter steel pipe, is constructed generally beneath Simeon Drive and Father Junipero Serra Trail. Approximately $\frac{1}{4}$ mile from the westerly intersection of Father Junipero Serra Trail and Mission Gorge Road the El Capitan Pipeline jogs out approximately 500 feet from the road into the floodplain of the river.

FUEL LINES

Fuel lines cross the river at two locations. The 8-inch navy Fuel Pipeline crosses at Pacific Highway. The 10-inch fuel pipeline east of the stadium is connected to the tank farm located north and south of Friars Road west of Interstate 15.

ELECTRICAL TRANSMISSION LINES

High voltage overhead power transmission lines cross the river at a number of locations including:

1. West of the Interstate 52 crossing.
2. South of the Friars Road bridge in Grantville.
3. East and west of Interstate 805.
4. East of Interstate 5.
5. Between Interstate 5 and Mission Bay Drive.
6. Between Mission Bay Drive and Sunset Cliffs Boulevard.

There are also numerous locations in Mission Valley where lower voltage primary overhead power lines cross the river.

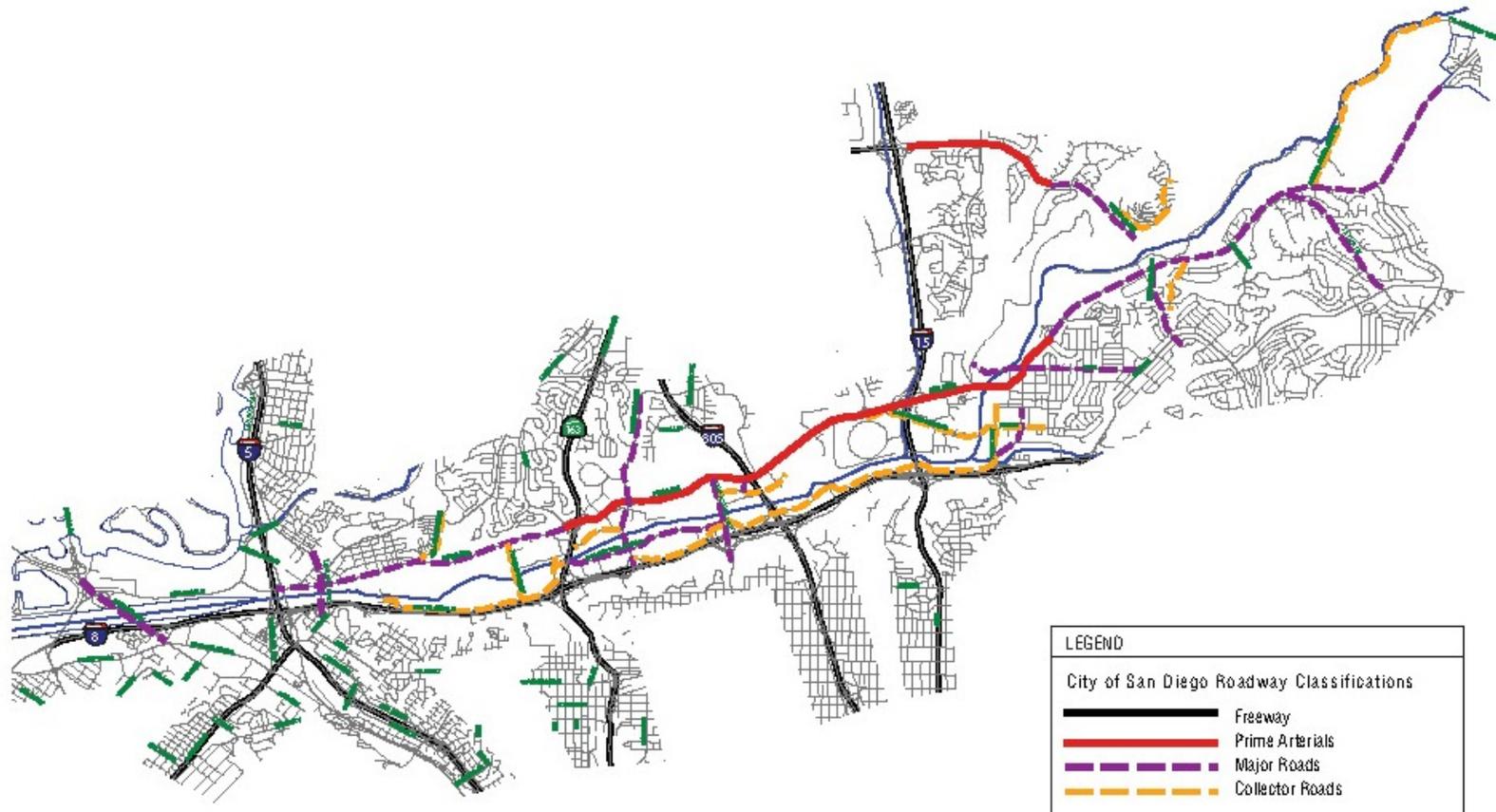
GAS TRANSMISSION MAINS

Gas transmission lines exist at points along the river banks, crossing the river at several locations.

APPENDIX H - TRANSPORTATION INVENTORY

APPROACH

This appendix examines a multi-modal view of the San Diego River Park’s potential circulation issues; the inventory studies vehicular, pedestrian, bicycle and transit circulation. The Master Plan effort made use of previous studies that have been conducted in areas along or adjacent to the River corridor. It is particularly important to note that the San Diego River Park corridor and study area is influenced by circulation patterns that are not fully contained within the Master Planning Area, such as Interstates 5, 8, 805 and 15, SR163, and Friars Road.

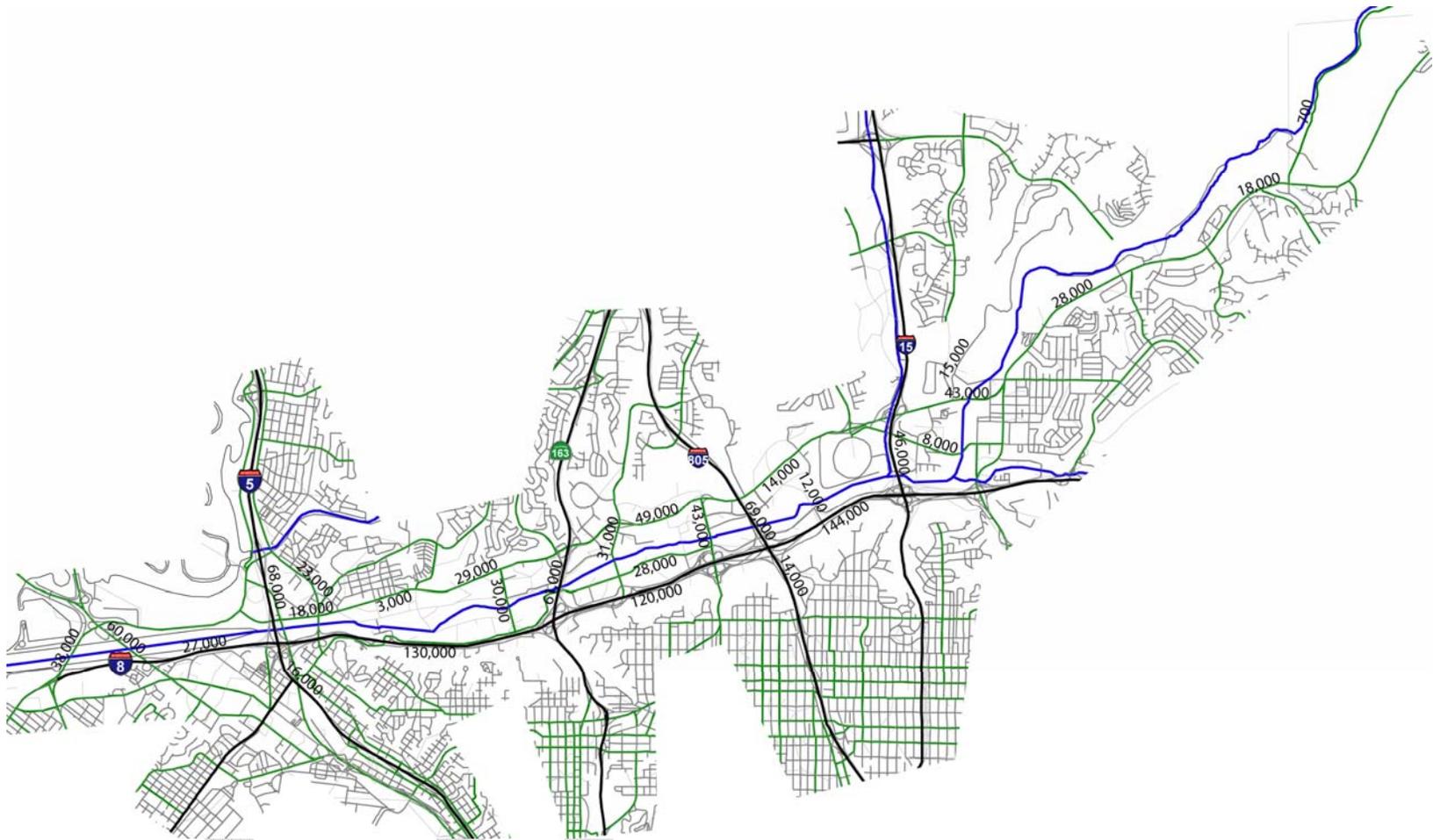


Existing Roadways

CORRIDOR DESCRIPTION

The San Diego River Corridor is characterized by frequent interstate highway crossings and by several major roads running roughly parallel to the river corridor. I-5, SR-163, I-805 and I-15 all traverse the river within a 6-mile segment. A large number of arterial roadways also cross the river; these roadways include Sunset Cliffs Boulevard, West Mission Bay Drive, Morena Road, Fashion Valley Road, Mission Center Road, Camino Del Este, Qualcomm Way, Ward Road, San Diego Mission Road and Friars Road.

Friars Road runs roughly parallel to and north of the river before it crosses the river and links with Mission Gorge Road to the south of the river. Direct roadway access to the river is somewhat limited, with indirect or local road access being typical for most of the river corridor. The main exception is the access to Dog Beach and nearer the ocean.



Roadway Volume

VEHICULAR CIRCULATION

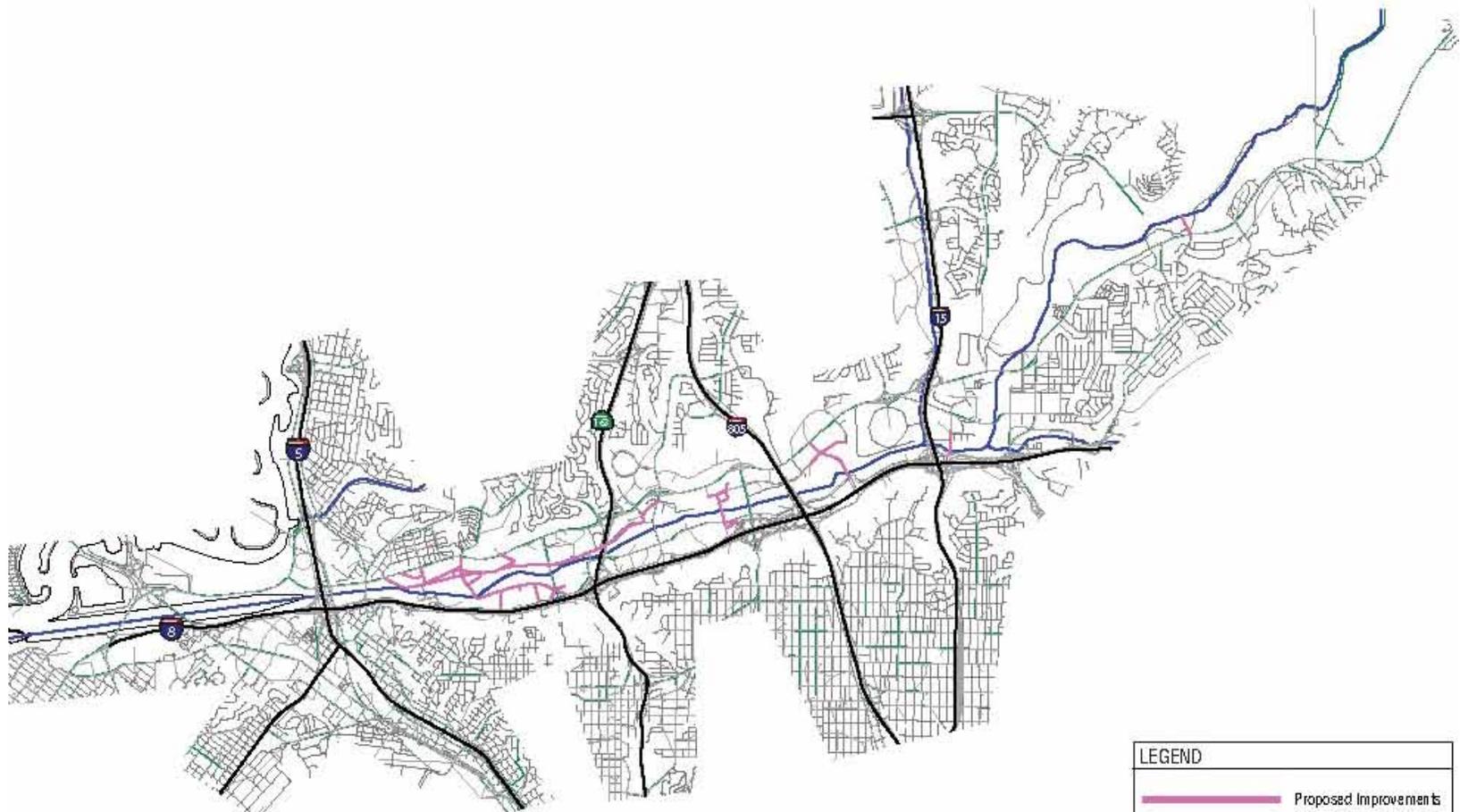
Roadway segments in the area generally operate at their optimal capacities, with the exception of Sports Arena Boulevard between I-8 and Midway Drive and Rosecrans/Camino Del Rio West between Midway and I-8/I-5 interchange. These segments and adjacent intersections are highly congested during peak hours. The most significant circulation observation is the peak period congestion on road segments at or near the freeway interchanges.

I-8 and many of its interchanges also exhibit substantial congestion during peak hours; congestion extends to adjacent surface streets as they try to serve the east-west traffic unable to use I-8. Given the proximity of freeways to the river corridor, many users' prime access to the river and its amenities would be via these roadways, making river access extremely difficult during peak traffic periods.

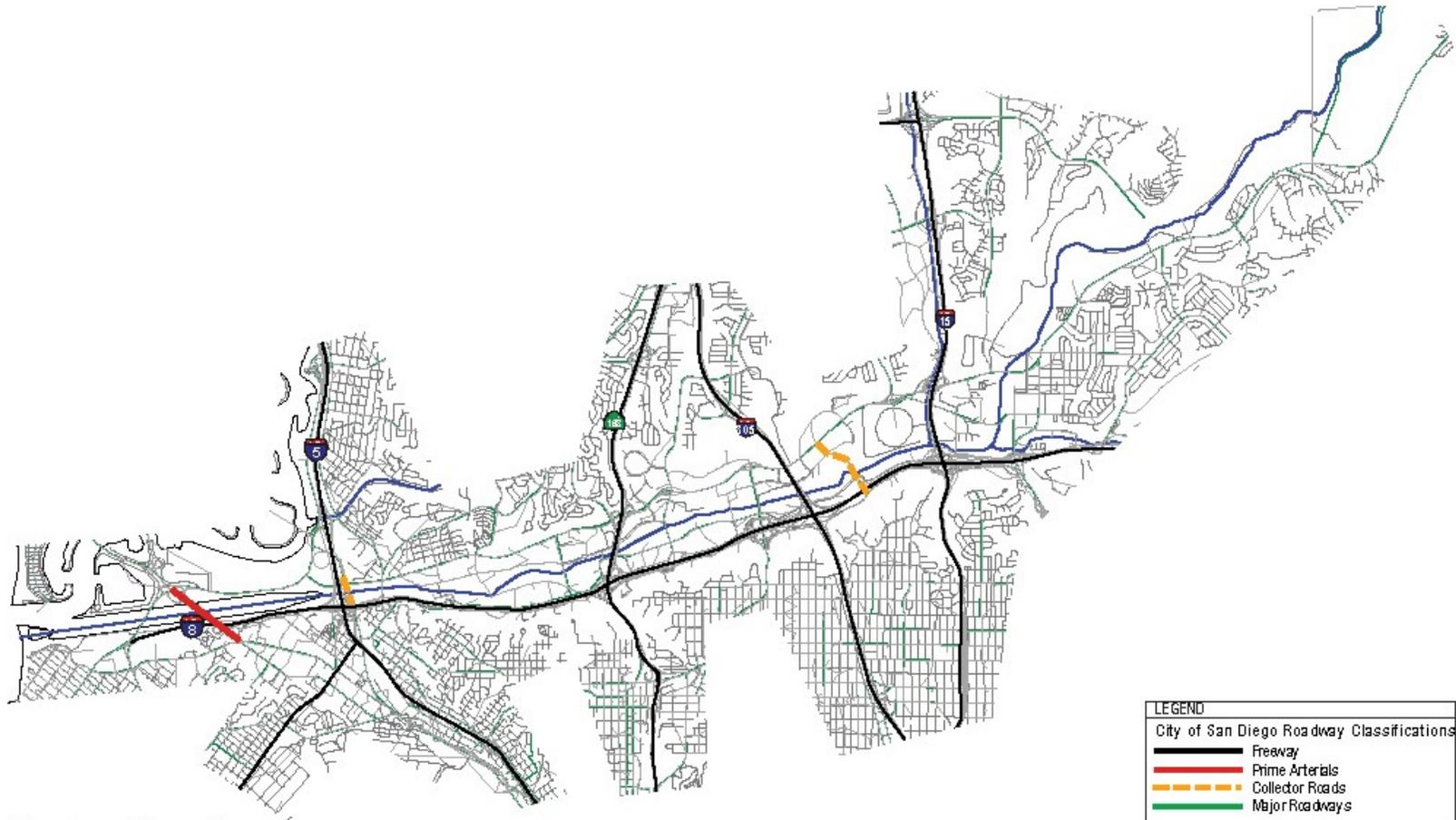
PLANNED ROADWAY IMPROVEMENTS

SANDAG's Regional Transportation Plan for 2030 directs improvements to many freeways and major roads that cross or are in the immediate vicinity of the river. These plans include:

- I-5
An additional 2 general traffic lanes and 2 HOV (High Occupancy Lanes) by 2020.
- I-805
Add 4 Managed Lanes (lanes on which the number of vehicles using the facility be limited, and/or where the direction of the lanes can be changed, e.g. HOV lanes or toll roads) by 2030
- SR-52
Add 2 general traffic lanes and 1 Managed Lane by 2030
- Friar's Road
Arterial modifications from Morena Boulevard to Fashion Valley Road



Planned Roadways



Roadway Class Changes

It should be noted that some proposed road improvements are not fully supported by the public and other are not funded. Proposals experiencing these constraints include:

- Via Las Cumbres which would connect Friars Road and Hotel Circle North near the Taylor/I-8 interchange
- Milley Way river crossing between I-805 and I-15
- Tierrasanta Boulevard connecting to Princess View
- Jackson Drive extending to the north

PEDESTRIAN AND BICYCLE CIRCULATION

Pedestrian access and facilities in the immediate vicinity of the river fall into two categories:

- Access via sidewalks adjacent to roads for vehicular access.
- Trails and dedicated facilities for pedestrians, cyclists and other non-motorized travel

BIKEWAYS

Several types of bicycle facilities are provided in the study area. These facilities include:

- Class I (Bike Path or Trail)
Completely separate right-of-way for the exclusive use of non-motorized travel.
- Class II (Bike Lane)
Lane painted on the pavement for one-way, bicycle-only travel. Crossings by pedestrians and motorists permitted.
- Class III (Bike Route)
Designated solely by signs or other such markings; shared with motorists and pedestrians.

A Class II Bike Lane is provided along Friars Road and Mission Gorge Road. A Class III Bike Route exists along a portion of Sea World Drive. A Class I Bike Path/Trail is also designated along Friars Road (from near Fashion Valley Road) and Sea World Drive, crossing the river at Sunset Cliffs Boulevard and continuing to the Ocean. Another Class I Bike Lane is in Mission Trails Regional Park, adjacent to the River for approximately 1.5 miles.

TRANSIT CIRCULATION

Several transit lines service the river corridor, connecting the river with most major destinations within San Diego. Options include bus service, trolley, and commuter rail.

The San Diego Trolley stops at many stations along the river corridor, including transit centers at Old Town, Morena/Linda Vista and Fashion Valley. The Old Town Transit Center offers convenient access to the San Diego Trolley, the Coaster and ten bus routes. The Metropolitan Transit Development Board (MTDB) provides the trolley service.

Both local routes and express routes run throughout the study area. Mission Valley is the community within the study area with the highest amount of bus service. The Metropolitan Transit Development Board (MTDB) provides the bus service.

The North County Transit District (NCTD) provides the Coaster service that links communities and travelers from Oceanside to San Diego, with additional stops in Carlsbad (2), Encinitas, Solana Beach, Sorrento Valley and Old Town.

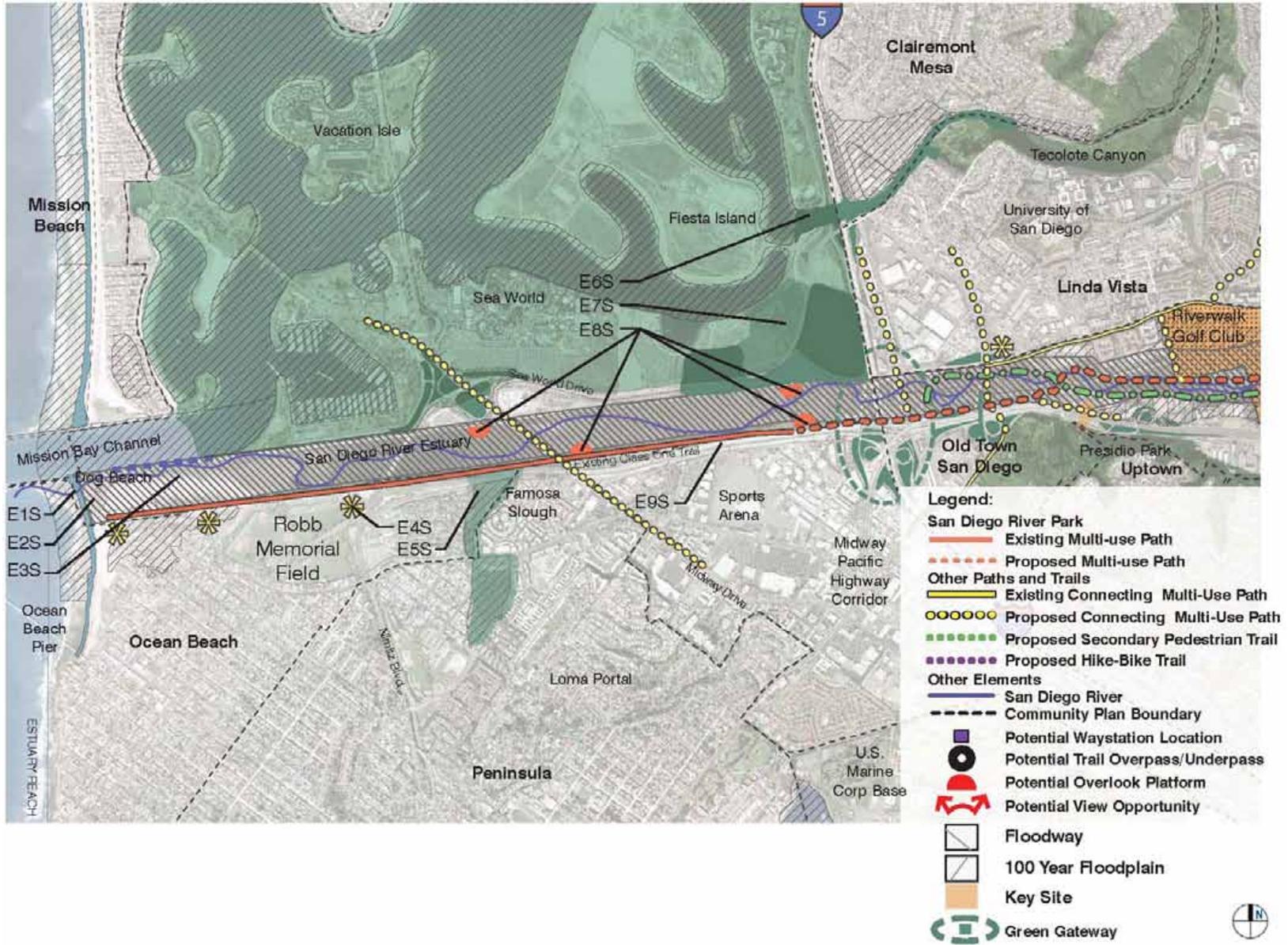
Amtrak provides the regional Pacific Surfliner Route rail service from San Diego to San Luis Obispo. In the San Diego region, there are stations at San Diego (Santa Fe), Old Town (on weekends), Solana Beach and Oceanside.

DRAFT

APPENDIX I - RECOMMENDATION MATRICES SUGGESTED IN PUBLIC MEETINGS

The following pages outline the multiple recommendations suggested at the public meetings for the specific reaches of the river and provide the benefits of each recommendation. The benefits are organized into four general categories: Hydrology, Ecology, Recreation and Culture/Education.

DRAFT



Estuary Simple Projects Recommendations Diagram

KEYNOTE RECOMMENDATION

BENEFITS

Simple Projects - Estuary

HYDROLOGY

ECOLOGY

E1S	Create San Diego River Park Trail head and waystation at Dog Beach.	Increase awareness of estuarine hydrologic function through interpretation.	Interpretation of habitat value, use and function for shorebirds and other wildlife will increase awareness of estuarine function and wildlife habitat and balance the impact of the dog park.
E2S	Maintain Dog Beach as an off-leash recreational destination and community asset. Enhance existing Dog Beach signage to include information about the river park.		
E3S	Coordinate with Mission Bay Park to support marsh restoration that is underway.		Restoring marsh will expand estuarine wildlife habitat.
E4S	Create San Diego River Park Trail head, waystation and historic and natural interpretation zone at Robb Field.		
E5S	Explore potential to improve and expand connection of the Famosa Slough with the San Diego River estuary. Investigate feasibility of augmenting the connection with appropriate engineering study. Potential conflict with Famosa Slough Master Plan.	Improving connection will increase extent of functioning tidal marsh area. The study may reveal that an increased tidal exchange in the Slough may create a more desirable result than existing conditions.	Improving connection will expand estuarine habitat and promote fish, bird and terrestrial habitat connections.
E6S	Coordinate with Mission Bay to support marsh restoration that is underway.		Restoring marsh will expand estuarine wildlife habitat.
E7S	Develop temporary multi-use programs for under-utilized lands that are proposed for other future uses.		Potential to establish native plant nurseries as a temporary land use to support restoration efforts in the corridor and to supplement habitat. May also serve as a site to conduct phytoremediation research.
E8S	Create estuary overlook platforms along the San Diego River Park Trail at estuary surface level.		

IMPLEMENTATION

RECREATION

Provide a gateway and introduction to the SDRP. Provide a starting point and staging for users of the San Diego River Park multi-use pathway. Cultivate awareness of the San Diego River, The San Diego River Park, estuarine ecology, the river's history, and the San Diego River Park multi-use trail.

Retains existing recreational amenity for dog owners.

EDUCATION

Introduce and interpret the historic activities of Native Americans on the beach and estuary, the significance of river and valley to the origins of San Diego and as a transportation corridor to the uplands.

Interpret unique habits, sensitivities and characteristics of estuary function, wildlife habitat and seasonal nesting requirements for sensitive species.

Opportunities for staging and access to the San Diego River Park multi-use pathway. Provide interpretation that cultivates awareness of the San Diego River for recreational users of Robb Field.

Interpret Native American use of beach, creation of Derby Dike, historic river delta pattern, estuary and natural hydrologic condition, and San Diego River Park Trail.

Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.

Interpret unique habits, sensitivities and characteristics of estuary function, wildlife habitat and seasonal nesting requirements for sensitive species.

Temporary recreation events could be held in underutilized open spaces. This site could also be considered for use as an active recreation park with viewpoints, markers, overlooks and a naturalized buffer along estuary edge. Link to Class I Bike Paths to the east and west.

Providing overlooks improves accessibility to bird and wildlife viewing.

Interpret unique habits, sensitivities and characteristics of estuary function, wildlife habitat and seasonal nesting requirements for sensitive species.

Collaborate with appropriate community and special interest groups to install signage, interpretive kiosks and furnishings in vicinity to provide information about estuarine function, wildlife habitat and trail system. Throughout the San Diego River Park, signage, kiosks, and furnishings should be unified by a continuity of materials and graphics while also incorporating materials that reflect the adjacent environment and neighborhoods. Link trail head and Waystation to existing bike lanes, bike routes, and trails in surrounding communities.

Support appropriate community and special interest groups to manage Dog Beach and integrate it with the San Diego River Park.

Collaborate with appropriate community groups to install signage in vicinity to provide information and create awareness about estuary function and wildlife habitat.

Collaborate with appropriate community and special interest groups to install signage, interpretive kiosks and furnishings in vicinity to provide information. Coordinate with Community Plans in future to integrate park and river trail. Unify interpretive signage, furnishings, and construction with other San Diego River Park projects. Maintain Robb Field as multi-use recreational complex, and expand in future as community recreation needs increase.

Collaborate with appropriate community and special interest groups including friends of Famosa Slough to initiate feasibility study to explore benefits and impacts of replacing existing culvert with larger structure and improve trail connectivity between the San Diego River Park Trail and Famosa Slough. Consider linking existing Famosa Slough trail with the existing Class I Bike Path. Increase passive park areas into new river alignment and/or new link with Famosa Slough.

Collaborate with appropriate community and special interest groups to extend feasibility study to explore the potential to modify current plan to consider effect of improving hydrologic systems of Mission Bay and the river. Such a study should identify and develop trail connections from the San Diego River Park to Tecolote Canyon and with Mission Bay Park.

Collaborate with appropriate community and special interest groups to explore opportunities to fully utilize land for ecologic, educational and recreational uses.

Collaborate with appropriate community and special interest groups to develop, design, and select specific locations for interpretive overlooks on both the north and south sides of the San Diego River estuary. Sites for consideration: Famosa Slough, Mission Point, historic confluence of Tecolote Creek and the San Diego River, estuary restoration projects, and Sports Arena (Bay to Bay Bridge).

KEYNOTE RECOMMENDATION

BENEFITS

Simple Projects - Estuary		HYDROLOGY	ECOLOGY
E9S	Explore potential to create a new park with a connection to the river and neighborhood as the Sports Arena redevelops. If possible, expand river into this area similar to Famosa Slough.		Improving connection will expand riparian habitat and promote fish, bird and terrestrial habitat connections.
E10S	Mission Bay Park interface zone		
E11S	Continue San Diego River Park multi-use pathway east of the I-5 and create connections from Friars Road to Pacific Highway.		
E12S	Establish Green Gateway along I-5 across the river valley.		Re-vegetate rights-of-way and open space adjacent to freeways and major roadways with appropriate native vegetation.
E13S	Create a waystation, trail connection and naturalized open space between Old Town San Diego / Presidio Park and the river corridor.		Utilize existing public lands to support the Green Gateway concept. Explore opportunities with Caltrans to expand support of River Park goals.
E14S	Create recreational trail connection between the San Diego River Park and the San Diego Bay.		
E15S	Improve trail and open space connection between Tecolote Canyon and Mission Bay.	Improving Tecolote creek by relocating Fiesta Island Dike and providing larger culverts reduces overall flow restrictions on the creek.	Improving connection will expand riparian and canyon habitats and promote fish, bird and terrestrial habitat connections.
E16S	Create connection between the San Diego River Park and adjacent neighborhoods to the north.		
E17S	Broaden river channel and meander throughout Mission Valley Preserve.	Increases potential river meander, improving water quality and reducing flooding impact.	Expand estuarine and riparian habitat and diversify fish, bird and terrestrial habitat connections to Mission Bay. Old burn site; Residue is hazardous in Mission Valley Preserve.
E18S	Connect Morena Blvd. Bikeway and San Diego River Park multi-use pathway.		

IMPLEMENTATION

RECREATION	EDUCATION	
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway While added park space provides additional recreational opportunities along San Diego River Park and Trail.		Collaborate with North Bay Redevelopment Plan to integrate it with the San Diego River Park if the Sports Arena redevelopment plans move forward, seek opportunities to engage with the process to integrate those plans by creating trail connections, installing interpretive kiosks, and potentially a Community Park.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.	Interpret unique habits, sensitivities and characteristics of river function, and wildlife habitats.	Coordinate with appropriate community/special interest groups for the Mission Bay Park Master Plan and South Shores General Development Plan to ensure appropriate park and river interaction and possible interpretive opportunities.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.		Coordinate with Community Plan, North Bay Redevelopment Plan and San Diego Bicycle Master Plan.
		Initiate dialogue with Caltrans, the City of San Diego and appropriate community/special interest groups. Plans to explore the methods for implementing native plant palette in rights-of-ways. Where appropriate, identify existing undeveloped parcels contiguous with rights-of-way and explore potential to acquire or establish open space easements to expand connectivity of Green Gateways.
Waystation and open space will provide a recreational link between Old Town and the San Diego River Park. Waystation staging area will provide access to the San Diego River Park multi-use pathway and public transportation. Links Old Town/ Presidio Park with Mission Valley Preserve and Mission Bay Park. Waystation will serve as a portal to coastal communities along the San Diego River Park.	Potential to interpret historic value of the river valley to establishing Old Town and the Presidio as well as its historic flood activities.	Prepare detailed design study for location of waystation, trail connections, bicycle staging, and explore creation of shuttle links from trolley at Old Town/Linda Vista to Ocean Beach, Sea World and Mission Beach. Initiate dialogue with City of San Diego to create shuttle links from trolley at Old Town/ Linda Vista and Ocean Beach/ Sea World/ Mission Beach.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.		Implement bikeways along Rosecrans Street and Taylor Streets as proposed by the City of San Diego Bicycle Master Plan
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.		Explore potential to reconstruct I-5 and railroad crossings over Tecolote Creek with larger bridges or culverts that can accommodate pedestrian movement. Consider multi-use path adjacent to riparian channel, and link to proposed (City of San Diego Bicycle Master Plan) Class I Bike Path adjacent to railroad right-of-way.
Improving the connections from Bay Park, Linda Vista, and San Diego University will increase recreational use of the San Diego River Park.		Coordinate with San Diego Bicycle Master Plan and appropriate community/special interest groups to develop detailed study to confirm specific alignment. Implement Bikeway along Morena Boulevard to Taylor Street as proposed by the City of San Diego Bicycle Master Plan. Improve connection of existing Class I Bike Path (from East Mission Bay Drive to Fashion Valley Road) to Morena Boulevard and to Morena Linda Vista Trolley Station. Coordinate with Mission Valley Community Plan to include in update as amendment.
	Potential to interpret historic patterns of river delta and development of landfill.	Collaborate with appropriate agencies and community/special interest groups to prepare specific plans and identify funding sources to modify river channel.
Connecting the bikeway and multi-use pathway will provide a safe and simple bicycle connection to the San Diego River Park from neighbors north and south.		Coordinate with San Diego Bicycle Master Plan. Study feasibility of connecting (future) Morena Boulevard bridge Bikeway (per Plan Report City of San Diego Bicycle Master Plan) and proposed San Diego River Park multi-use trail at south edge of Morena Blvd. bridge. The Bikeway is at street level; the multi-use pathway is down in the river valley.

KEYNOTE RECOMMENDATION

BENEFITS

Simple Projects - Estuary

HYDROLOGY

ECOLOGY

E19S Support and build upon access and interpretation zone at Mission Valley Preserve.

E20S Create short term bike trail alignments through Riverwalk Golf Club in the trolley right-of-way

E21S Support efforts to create a Presidio Park Master Plan.

E22S Create a Presidio Park entry monument on Taylor Street that incorporates its historic connection with the river.

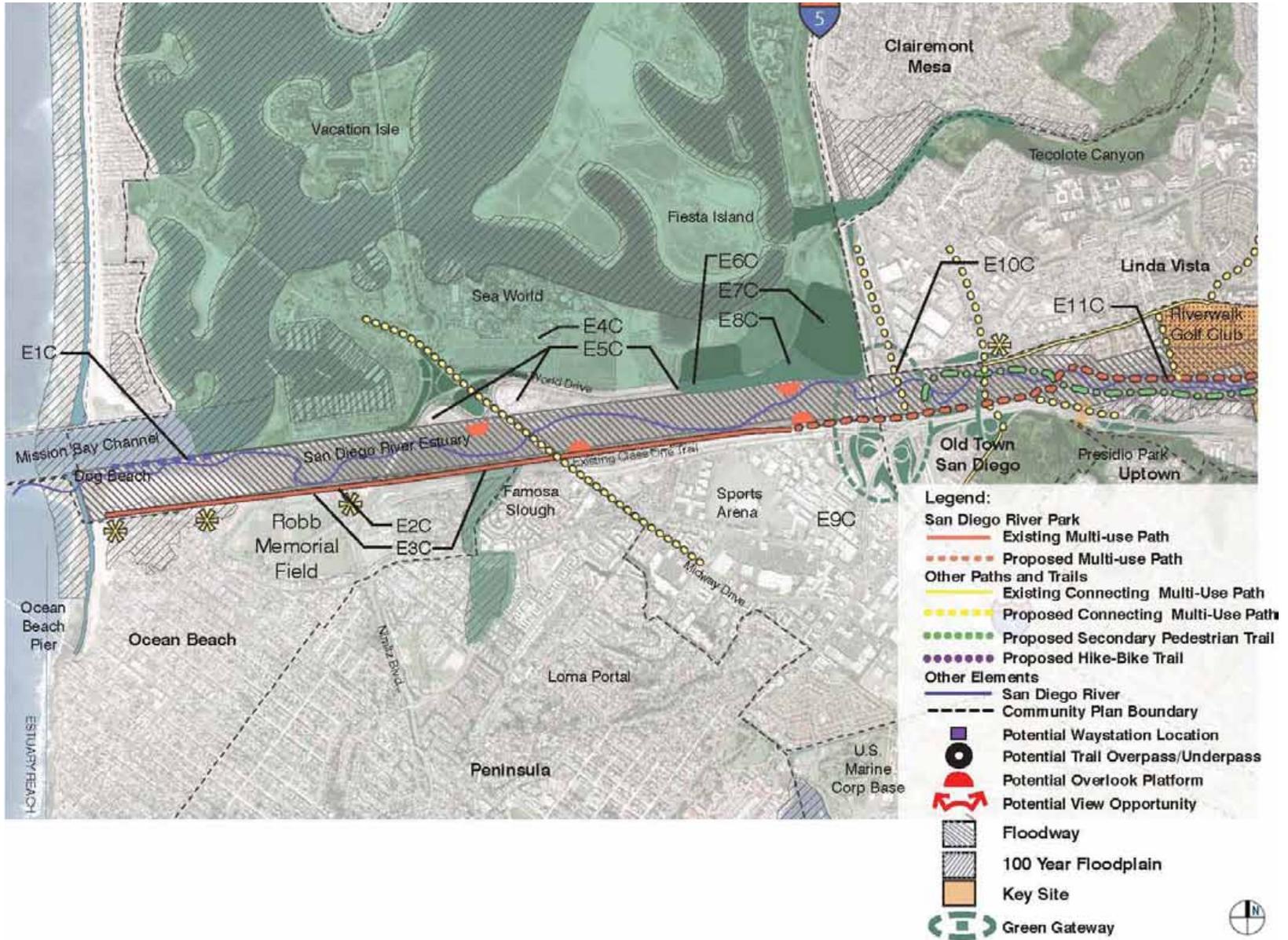
E23S Remove 1.5 acre area of cobble fill on south side of river under I-5.



IMPLEMENTATION

RECREATION	EDUCATION	
Access to the Mission Valley Preserve from the San Diego River Park multi-use pathway provides an opportunity for interpretation and increases awareness.	Interpret historic Old Town, Presidio and Rancheria of Cosoy, as well as estuary function and physiography of coastal plain and terraces.	As San Diego River Park Trail is implemented, develop trail head with signage, interpretive kiosks and furnishings.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.		Coordinate with the appropriate agency, community/special interest groups, land owners and golf course management to explore the potential bike trail. Trail would be relocated closer to river channel in the future when the golf course redevelops.
		Coordinate with appropriate agencies, community and special interest groups to begin discussions about initiating a master planning effort and to identify potential funding sources.
		Coordinate with appropriate agencies and community groups to initiate study to design and locate entry signage on north side of Presidio Park.
		Identify potential donors or funding sources to remove fill and lower grade to river channel level. Fill could potentially be used to fill undesirable ponds upstream or may have value as structural fill for development projects elsewhere.





Estuary Complex Projects Recommendations Diagram

KEYNOTE RECOMMENDATION

BENEFITS

Complex Projects - Estuary

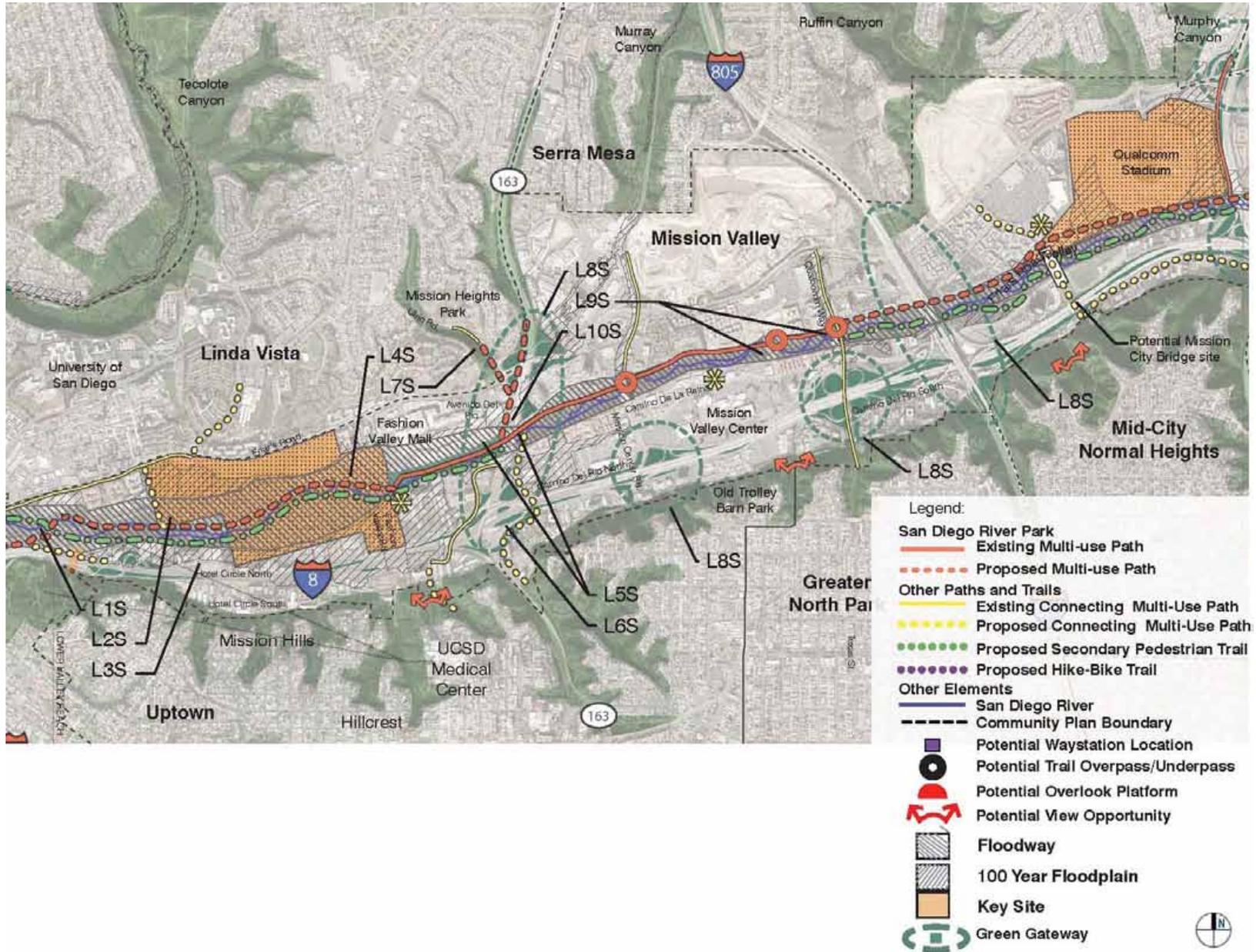
HYDROLOGY

ECOLOGY

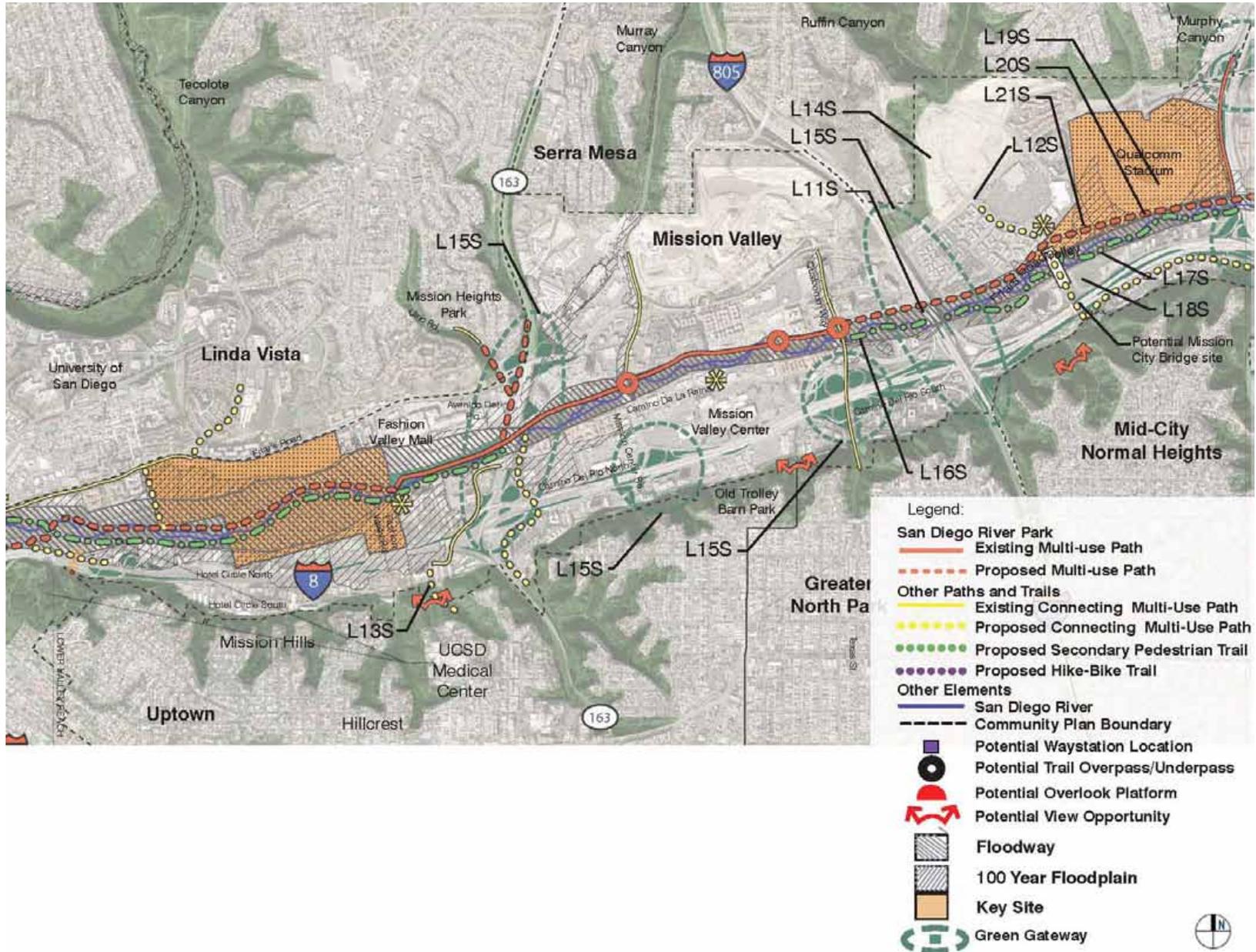
E1C	Explore potential to improve and expand connection of the Famosa Slough with the San Diego River estuary. Investigate feasibility of augmenting the connection with appropriate engineering study. Potential conflict with Famosa Slough Master Plan.	Improving connection will increase extent of functioning tidal marsh area. The study may reveal that an increased tidal exchange in the Slough may create a more desirable result than existing conditions.	Improving connection will expand estuarine habitat and promote fish, bird and terrestrial habitat connections.
E2C	As Robb Field is improved in the future, create a landscape that relates to estuary and river edge.		Reinforce river character and expand native riparian and upland landscapes.
E3C	Explore potential to realign and terrace south river edge and expand estuary.	Reducing channelization encourages additional stream meander, increase extent of functioning tidal marsh area, improving water quality and increasing flood capacity.	Expands estuarine habitat and diversifies range of habitat based on additional topography.
E4C	As Sea World may evolve in the future, encourage redevelopment that engages San Diego River Park and estuary and creates trail connection to San Diego River Park Trail.		Potentially expand estuarine habitat.
E5C	Explore potential to realign and terrace north river edge and expand estuary.	Reducing channelization encourages additional stream meander, increase extent of functioning tidal marsh area, improving water quality and increasing flood capacity.	Expands estuarine habitat and diversifies range of habitat based on additional topography.
E6C	If results of feasibility study proposed in short term recommendations are positive, implement improvements to estuary between Mission Bay and the river.	Improving connection will increase extent of functioning tidal marsh area. The study may reveal that an increased tidal exchange in the Slough may create a more desirable result than existing conditions.	Improving connection will expand estuarine habitat and promote fish, bird and terrestrial habitat connections.
E7C	Investigate potential for locating a River and Estuary Interpretive Center that supports the Mission Bay Park Master Plan interpretive program.		Promote awareness and experience of natural function and form of Mission Bay as part of river delta, function of estuary and relationship to Tecolote Canyon.
E8C	Collaborate with Mission Bay and Land Fill Study to explore the potential to expand estuary.	Increases extent of functioning tidal marsh area and could allow river flow into Mission Bay, potentially increasing water movement within the Bay.	Restore estuarine function and value to Mission Bay.
E9C	Explore potential to create a greenway connection with San Diego Bay.		Potentially create some expanded habitat connections by building upon Green Gateway, aggregating public lands and rights-of-way. Refer to Lateral Connections in General Recommendations.
E10C	Create major San Diego River Park access node at Linda Vista and integrate with potential Green Gateway at I-5 and Friars Road.		
E11C	Create San Diego River Trail on north side of river through Riverwalk development.		

IMPLEMENTATION

RECREATION	EDUCATION	
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.		Suggested for feasibility study purposes only. Collaborate with appropriate community and special interest groups to initiate a feasibility study to explore the benefits and impacts of removing the jetty through hydrologic modeling and other methods.
Realign bike path along North side of channel and create pedestrian trail.		Coordinate with appropriate agencies and community/special interest group plans for future improvements. Collaborate with appropriate community and special interest groups to initiate feasibility study to modify the river channel embankment to create a varied edge with native vegetation.
Connect San Diego River Park Trail to provide access to Sea World, linking tourist attractions and hotels along the river corridor.		Collaborate with Sea World to engage in their planning process to create awareness of the goals of the San Diego River Park. Encourage better connections and access, use of native vegetation, education about the river, and integration of Sea World as one of the linked amenities of the San Diego River Park.
Realign bike path along North side of channel and create pedestrian trail.		Collaborate with appropriate community and special interest groups to initiate feasibility study to modify the river channel embankment to create a varied edge with native vegetation. Collaborate with appropriate community and special interest groups to explore potential to replace Fiesta Island dike with a bridge located north of Tecolote Creek.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.	Interpret unique habits, sensitivities and characteristics of estuary function, wildlife habitat and seasonal nesting requirements for sensitive species.	Collaborate with appropriate agencies and community/special interest groups to prepare specific plan and identify funding sources improve estuarine environment.
	Potential to reestablish Mission Bay as part of the San Diego River delta pattern.	Initiate dialogue with appropriate community and special interest groups to explore potential to consider another location for the Nature Center or to develop an additional Interpretive Center associated with the river and estuary. Collaborate with appropriate agencies and community/special interest groups to initiate feasibility study to create an estuarine link between Mission Bay and the San Diego River. Extensive study and modeling will be required to fully understand the impact of linking the River and the Bay on flows and water quality. Engage the Mission Bay Landfill Study in the process. Could be explored through a joint science coalition.
Create multi-use path and open space link to San Diego Bay and bike paths to south.		Collaborate with North Bay Redevelopment as it moves forward.
		Coordinate with Community Plans to identify sites and land owners to explore potential acquisition or to establish easements for access and interpretive trail head locations.
Connect trolley stations. Connect along Linda Vista Road and Morena to Tecolote. Trial connection Tecolote could be through estuary or along old PCH.		Coordinate with San Diego Bicycle Master Plan and redevelopment of Riverwalk Golf Club. When Riverwalk redevelops coordinate with appropriate agencies, community/special interest groups and land owners to identify trail alignment and development concept that orient to the river.



Lower Valley Simple Projects Recommendation Diagram



Lower Valley Simple Projects Recommendation Diagram

KEYNOTE RECOMMENDATION

BENEFITS

Simple Projects - Lower Valley		HYDROLOGY	ECOLOGY
L1S	Aggregate undeveloped land of YMCA, Sefton Fields, and MTDB as open space to broaden river channel and expand habitat.	Improve stream dynamic, water quality, groundwater recharge and reduce flooding.	Expand aquatic, riparian and upland habitats. Create upland habitat areas within floodway. Refer to General Recommendations regarding naturalizing floodplain areas.
L2S	Explore potential to develop Neighborhood Park. Engage Riverwalk Golf Course land owner in discussion to explore options to extend trail along trolley corridor, to modify river edges in golf course in the short term, and to modify proposed development plan in the long term.		Redesign trail for compatibility with river or relocate. Create upland habitat areas within floodplain. Refer to General Recommendations on naturalizing floodplain areas. Coordinate ball fields in potential park to better relate to the river and habitat.
L3S	Explore potential to acquire under-developed land site. Vacant parcels are an opportunity to create new river-oriented community amenity.		
L4S	Create historic interpretation of Kosoy Rancharia and agriculture adjacent to trail.		
L5S	Create trail under SR-163 to connect existing Class I Bike Paths to the east and west of SR-163.		
L6S	Establish Green Gateway along SR-163 across the river valley by introducing native landscapes along the roadway.		Improve visual and wildlife habitat continuity across the valley. Refer to General Recommendations regarding Green Gateways.
L7S	Create open space and trail connection to upland communities along Ulric Road.		Trail connections to side canyons with native vegetation will benefit upland habitat and wildlife movement between open spaces.
L8S	Establish Green Gateway interchanges throughout by introducing native vegetation along roadways		Improve visual and wildlife habitat continuity across the valley. Refer to General Recommendations regarding Green Gateways.
L9S	Explore potential to connect FSDRIP bike trails across intersections with grade separated crossings on northside of river.		



IMPLEMENTATION

RECREATION	EDUCATION	
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway. While added park space provides additional recreational opportunities along San Diego River Park and Trail.	Interpret natural stream processes.	Coordinate appropriate agencies and community/special interest groups to identify means of aggregating land. Integrate with Mission Valley Preserve to aggregate land to initiate specific study to develop design concept.
Potential to partner with YMCA to relate recreational and educational events to the river. Creating a Neighborhood Park at YMCA and Sefton Fields will increase Mission Valley's compliance with park standards established by the city's General Plan.		Engage land owner to discuss potential for land acquisition or easement for trail connection and to improve river edges through golf course. Coordinate with San Diego Bicycle Master Plan and Riverwalk GC owner. Engage bicycle master planners in process to explore potential revised alignment following trolley right-of-way. Initiate dialogue to explore long term intent and potential of land to accommodate park and/or trails. Coordinate with Mission Valley Community Plan, and appropriate agencies and community/special interest groups to identify alignment and buffer to incorporate into plan update as amendment.
Potential to coordinate with link to Old Town with additional pedestrian trail on south side of Sefton Park.	Potential to interpret archaeological and historical site context.	Engage land owner to discuss potential for land acquisition, easement or to develop a river oriented amenity with trail connection. Current use is parking / storage. Investigate potential archeological value of the site.
Linking the multi-use pathway and interpretative zone will enhance the recreational experience	Interpret Rancheria of Cosoy, agriculture in valley, El Camino Real and valley as movement corridor.	Engage land owner to discuss potential for land acquisition and/or easement for trail connection and interpretive waystation. Integrate with trail implementation project.
Connecting the San Diego River Park multi-use pathway (Class I Bike Path) below SR-163 strengthens the contiguousness of the multi-use pathway and improves the recreation experience in the San Diego River Park.		Implement Class I Bike Path below SR-163 north of the river as proposed by the City of San Diego Bicycle Master Plan.
		Initiate dialogue with Caltrans, City of San Diego Streets and Mission Valley Community Plan to explore the methods for implementing native plant palette in rights-of-ways and undeveloped easements.
Improve pedestrian access between upland neighborhoods and river corridor.		Coordinate with San Diego Bicycle Master Plan and Mission Valley Community Plan to identify specific route alignment.
		Initiate dialogue with Caltrans and appropriate community groups to explore means of changing right-of-way plant palette.
Improve continuity of bike path. Eliminate necessity for pedestrians and bicycles to move to traffic signal to cross street at Mission Center Road and Camino del Este. Improved crossings are important to improve continuity of multi-use pathway.		Follow proposed alignment of Class 1 Bikeway in accordance with San Diego Bicycle Master Plan. Initiate dialogue with Bicycle Master Planners and City of San Diego Streets to identify funding source and develop detail design and construction plan.

KEYNOTE RECOMMENDATION

BENEFITS

Simple Projects - Lower Valley

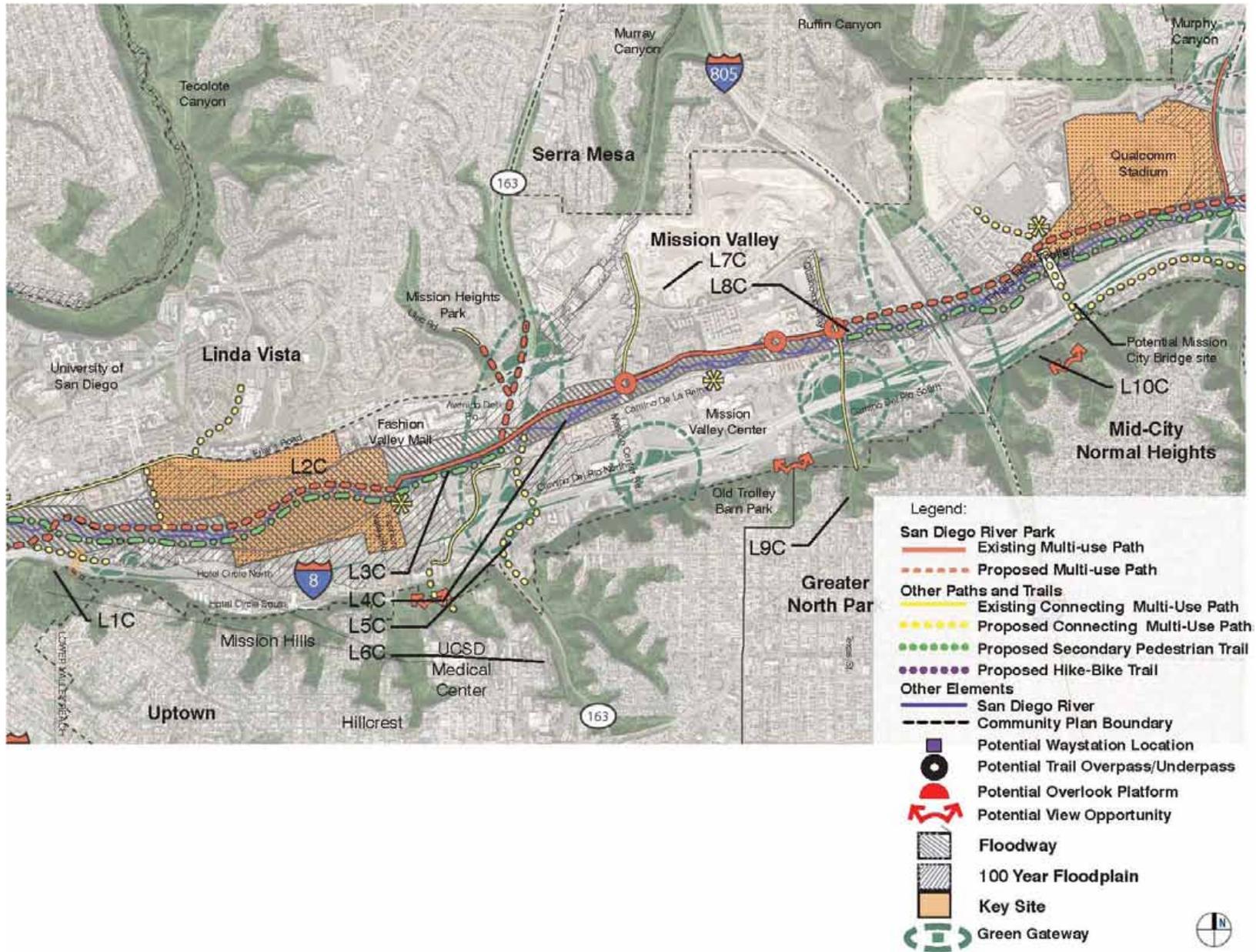
HYDROLOGY

ECOLOGY

L10S	Improve open space connection between Murray Creek and river valley by daylighting Murray Creek within existing right-of-way. Daylight Murray Canyon drainage and create wetland and natural filtration zone.	Improve water quality in river by treating stormwater runoff from Murray Canyon and adjacent development in vegetated swales.	Potential to expand upon Green Gateways and connect wildlife habitat .
L11S	Create trail connection from Mission City Trolley Station to Qualcomm Way.		
L12S	Utilize existing underpass as a means of connecting to neighborhoods and canyon north of Friar's Road.		
L13S	Create bike path connection to San Diego River Park Trail from Bachman Place, Camino de la Reina and Avenida del Rio.		
L14S	Explore potential to reconnect Ruffin Canyon with the River		Improve visual and wildlife habitat continuity from canyon to valley.
L15S	Establish Green Gateway at interchanges of I-8 and SR-163, Mission Center Rd., Qualcomm Way, and I-805. Also at interchanges of Friars Road and SR-163 and I-805.		Improve visual and wildlife habitat continuity across the valley. Refer to General Recommendations regarding Green Gateways.
L16S	Explore potential to acquire some or all of undeveloped land adjacent to the river.	Acquisition or easement would create adequate space to increase river channel width and create meanders.	Opportunity to expand aquatic, riparian and create upland habitat areas within floodway. Refer to General Recommendations regarding naturalizing floodplain areas.
L17S	Mission City Parkway Bridge Mitigation Site. Integrate new riparian and sage scrub habitat restoration with San Diego River Park and trail.		Opportunity to expand riparian and sage scrub habitat areas within floodway.
L18S	River Garden site. Connect to San Diego River Park and trail.		
L19S	If stadium redevelops, engage with developer and planner to develop a community park and additional naturalized open space with the San Diego River Park.	Increases potential river meander, improving water quality and reducing flooding impact.	Improve visual and wildlife habitat continuity across the valley and along its adjacent canyons.
L20S	If stadium redevelops, engage developers to integrate open space connections between San Diego River Park and canyons.		Improve visual and wildlife habitat continuity across the valley and along its adjacent canyons.
L21S	Create multi-use pathway in conjunction with Qualcomm redevelopment.		

IMPLEMENTATION

RECREATION	EDUCATION	
<p>Potential to create interpretive waystation and trail connection between river corridor and upland neighborhoods.</p>		<p>Initiate dialogue with appropriate community/special interest groups and land owners to explore means of influencing development in progress modify street extension and integrating creek corridor into future evolution of existing development.</p>
<p>Integrate bicycle trails and trolley system.</p>		<p>Coordinate with San Diego Bicycle Master Plan and Mission Valley Community Plan to identify specific route alignment.</p>
<p>Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.</p> <p>Provide a safe bike crossing to San Diego River Trail alignment from Balboa Park, Hillcrest and Mission Hills.</p>	<p>Interpret unique habits, sensitivities and characteristics of river function, and wildlife habitats.</p>	<p>Support City of San Diego and property owners in effort to improve underpass entrances. Provide lighting and potential better pedestrian connections to the underpass.</p> <p>Coordinate with San Diego Bicycle Master Plan and develop specific study to confirm route alignment.</p>
<p>Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.</p>	<p>Interpret unique habits, sensitivities and characteristics of canyon and wildlife habitats.</p>	<p>Initiate dialogue with appropriate community groups, land owners and developers to integrate the development with the San Diego River Park. Explore design modifications to extend native plant species and trail connections from Ruffin Canyon through the redevelopment site.</p> <p>Initiate dialogue with Caltrans, City of San Diego Streets and Mission Valley Community Plan to explore the methods for implementing native plant palette in rights-of-ways and undeveloped easements.</p>
<p>Potential to include undeveloped land as part of River Park through acquisition or open space dedication.</p>		<p>Engage land owners in dialogue to explore potential to acquire land or to create easements. Coordinate with Mission Valley Community Plan to include in update as amendment.</p>
<p>Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway. While added open space provides additional recreational opportunities along San Diego River Park and Trail.</p>		<p>Coordinate with appropriate public agencies and community groups.</p>
<p>Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway. While River Garden Site provides additional recreational opportunities along San Diego River Park and Trail.</p> <p>Mission Valley Community Plan objective is to create a 20 acre Community park with active recreation. Incorporate naturalized park area between trolley and river. (Consider structural turf-system as dual use of overflow parking and active play fields).</p> <p>Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway. While added open space provides additional recreational opportunities along San Diego River Park and Trail.</p>	<p>Interpret unique habits, sensitivities and characteristics of canyon and naturalized open space habitats.</p>	<p>Collaborate with San Diego River Park Foundation and appropriate community groups to support River Garden project and connect it to the San Diego River Park Trail. Coordinate with Mission Valley Community Plan to include in update as amendment.</p> <p>Coordinate with City of San Diego and stadium developers to create a plan that engages the river and adjacent canyons. This is a key site in the Lower Valley Recommendations, refer to the preceding pages for additional detail and potential planning alternatives. Coordinate with Mission Valley Community Plan to include an update as an amendment.</p> <p>Coordinate with City of San Diego and stadium developers to create a plan that engages the river and adjacent canyons. Coordinate with Mission Valley Community Plan to include an update as an amendment.</p>
<p>Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.</p>		<p>Coordinate with stadium redevelopment process and San Diego Bicycle Master Plan to identify specific alignment.zz</p>



Lower Valley Complex Project Recommendation Diagram

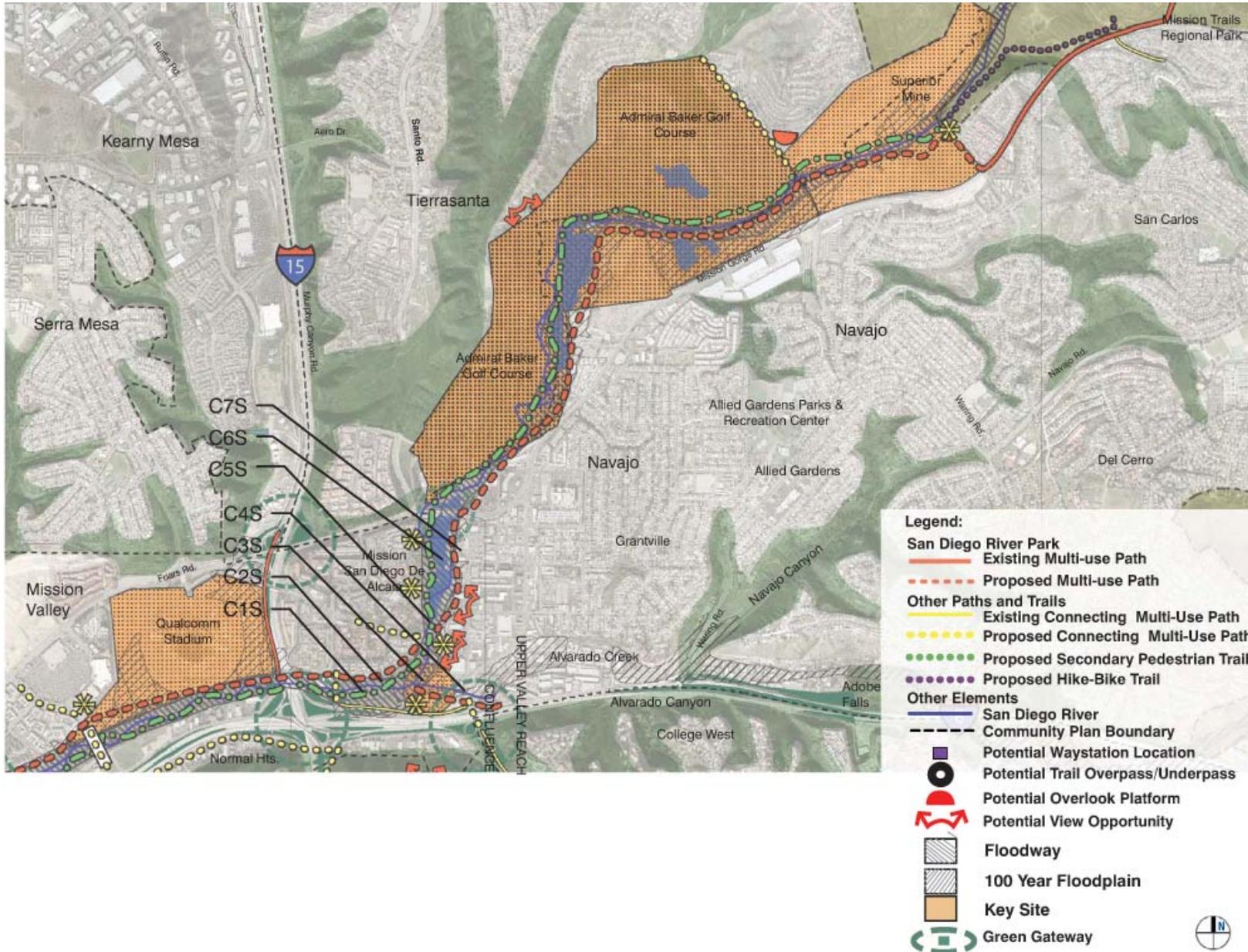
KEYNOTE RECOMMENDATION

BENEFITS

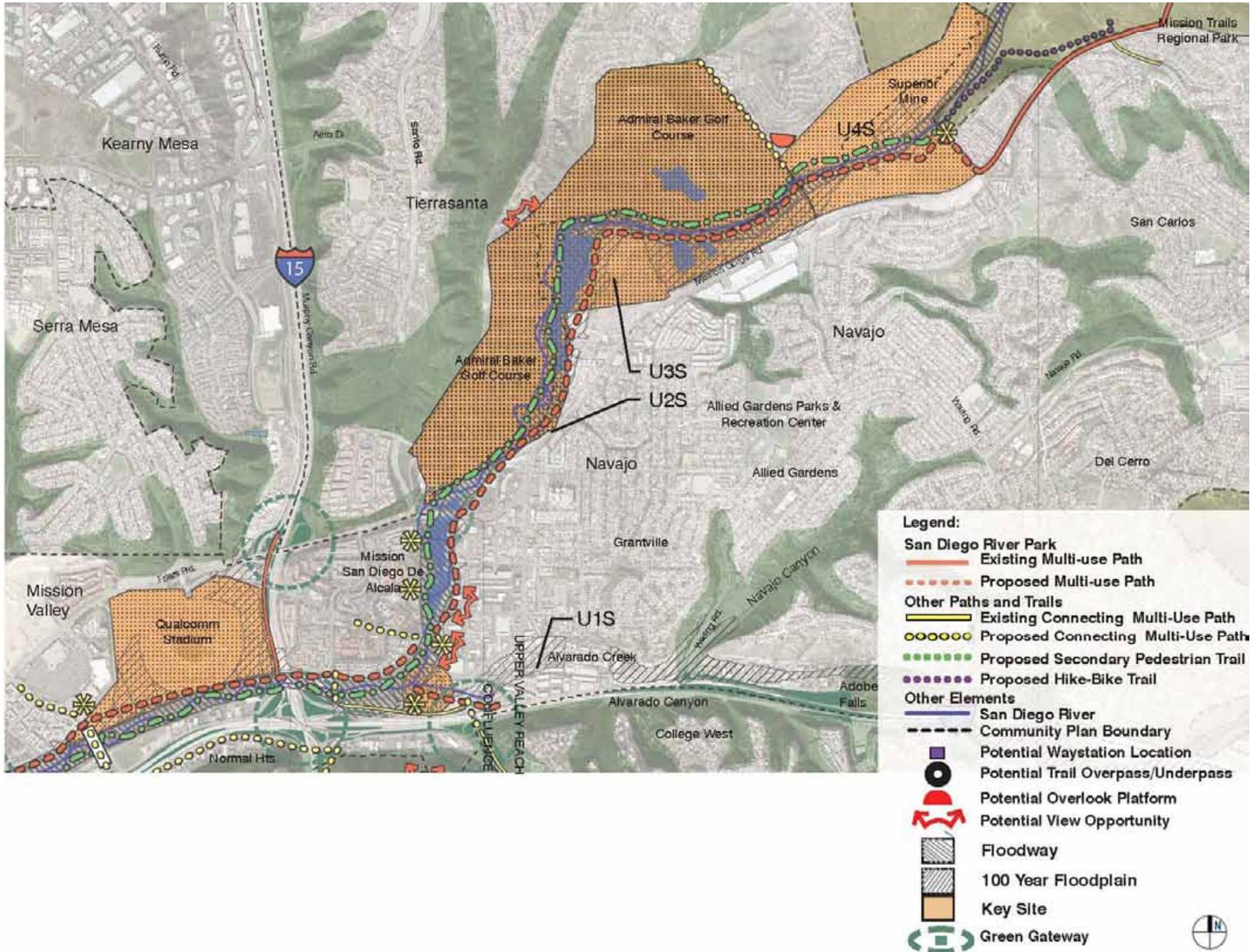
Complex Projects - Lower Valley		HYDROLOGY	ECOLOGY
L1C	Connect to Presidio Park via Taylor Street bridge over I-8.		Expands wildlife habitat and improves habitat connectivity.
L2C	Engage land owners to encourage any future redevelopment of Riverwalk GC to address river.		Expands wildlife habitat and improves habitat connectivity.
L3C	Engage landowners to explore potential to create urban park oriented to the river on both sides of river.		Balance impacts of urban edge by doubling the width of the habitat corridor on the opposite side of the river.
L4C	In the long term, investigate opportunities to improve water quality in FSDRIP. Explore the potential and methods needed to recreate the FSDRIP area as a component of a functional river environment by removing flow restrictions and separating river from pond.	Reestablish stream flow to restore sediment transfer potential of river system, improving water quality and ground water recharge through increased stream meanders.	Riparian habitat is increased by increasing channel width. Improve all at-grade crossings in Mission Valley with bridges to allow for grade separated trail and habitat connections along the river corridor and to canyons and tributaries.
L5C	Improve trail connections between river corridor and canyons.		
L6C	Create trail and open space connection to Balboa Park.		Expand native plantings to expand upland habitat connection from river valley to Balboa Park.
L7C	Relate and connect open space in development plans with the River Park. Create 'green street' edge with native plant species to improve visual and habitat connection to Murray Canyon		Improve visual and habitat connection to Murray Canyon.
L8C	Implement bike path as part of the San Diego River Park Trail.		Combine trail with expanded native vegetation to improve habitat connectivity throughout the valley.
L9C	Create open space and trail connections to uplands via an improved Texas Street.		
L10C	Improve Mission City Parkway over crossing to connect river corridor and upland open space		

IMPLEMENTATION

RECREATION	EDUCATION	
Shared habitat and trail connection between Presidio and River Park, linking tourist and recreation amenities with hotels.		Coordinate with Caltrans to explore potential to improve pedestrian component of the Taylor Street bridge to better accommodate pedestrians and bicyclists.
Shared habitat and trail connection between Presidio and River Park, linking tourist and recreation amenities with hotels.	Create views to river and access from development.	Initiate dialogue with land owners to encourage modifications to current plan to include habitat and open space corridor that follows the 100 year floodway to provide a buffer for river, river meander, native vegetation and San Diego River Park Trail corridor.
Site behind the Union Tribune could offer opportunity to expand River Park corridor.	Create views to river and access from development.	Coordinate with land owners and developers to explore potential to orient development to the river and create a quasi-public urban park edge to the river associated with retail uses.
	Reestablish a river pattern that is closer to the historic river environment.	Initiate feasibility study to investigate removal of flow restrictions, aeration devices, etc. to water quality that improves the river environment and to separate stream flow from ponds.
Connect existing pedestrian trail in canyon through City of San Diego open space with river corridor. Seek easement at the Mission Valley end of trail and explore potential trail heads/ staging areas feasible at both ends.		Coordinate with San Diego Bicycle Master Plan to identify specific alignment and connection priorities.
Create multi-use trail connection between River Park and Balboa Park to enhance and encourage use of bicycle and pedestrian transportation. Create bicycle link to Balboa Park along SR-163 or via Buchanan Canyon.		Initiate feasibility study to identify specific trail alignment. Coordinate with San Diego Bicycle Master Plan and Caltrans to identify potential trail alignment.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.	Create views to river and access from development	Coordinate with land owners and developers to integrate the San Diego River Park into the development process and to explore design modifications to a river and valley sensitive approach.
Realign Class I Bike Path to follow meander of stream. Link to existing trolley stop. Potential neighborhood park site adjacent to river and trolley stop.		Coordinate with San Diego Bicycle Master Plan to identify specific alignment and implementation priority.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.		Coordinate with City of San Diego and the San Diego Bicycle Master Plan to improve Texas Street and create a dedicated multi-use pathway separated from street with a naturalized open space corridor.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.		Coordinate with Caltran to explore potential to improve Mission City Parkway bridge over I-8 to connect people to uplands. Coordinate with City of San Diego and the San Diego Bicycle Master Plan to improve Texas Street and create a dedicated multi-use pathway separated from street with a naturalized open space corridor.



Confluence Simple Projects Recommendations Diagram



Upper Valley Simple Projects Recommendations Diagram

KEYNOTE RECOMMENDATION

BENEFITS

Simple Projects - Confluence

HYDROLOGY

ECOLOGY

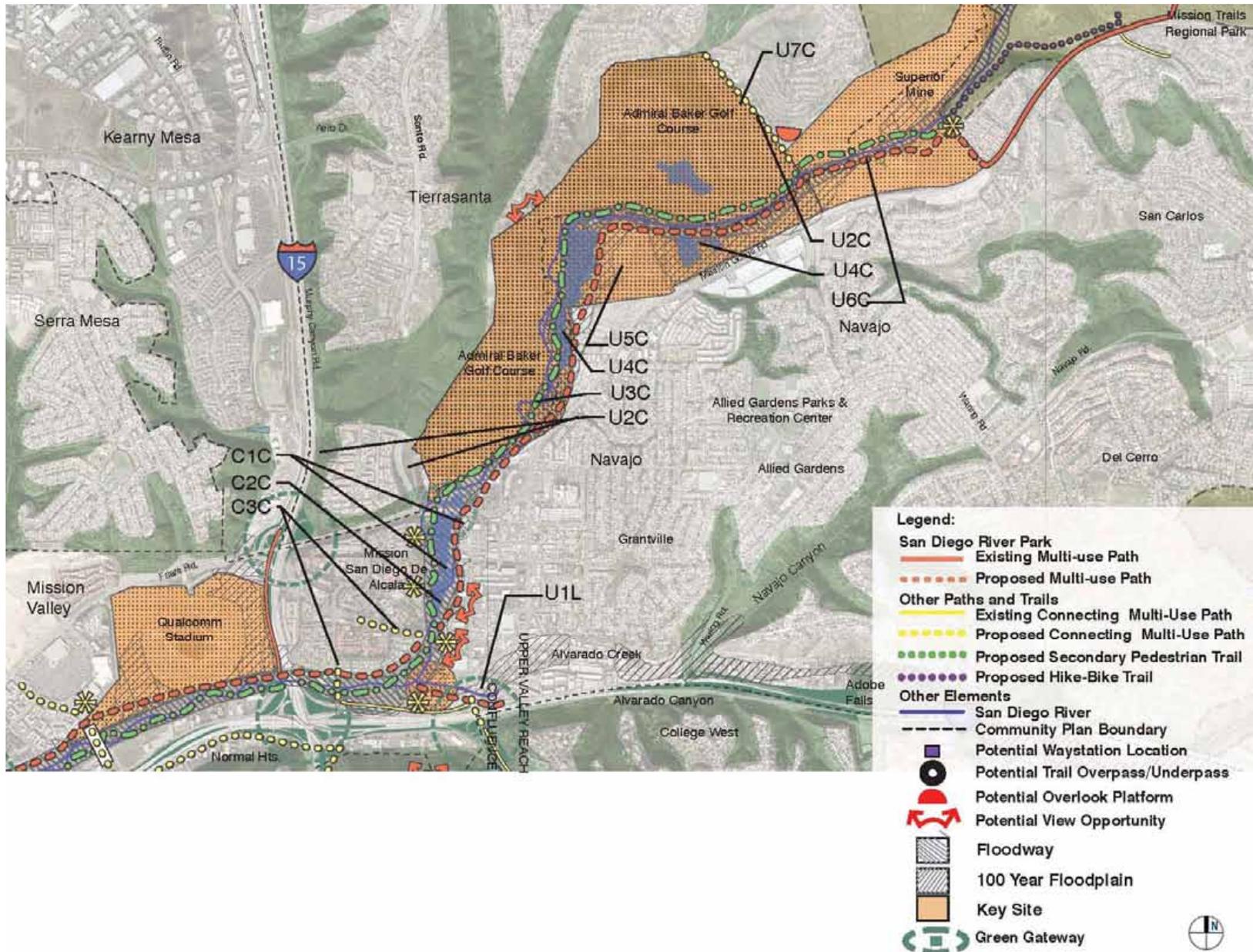
C1S	Develop city owned property as wetland habitat preserve integrate with potential water reclamation plant. Potential for Caltrans property to be developed for habitat and areas for the San Diego River Park Trail.	Improve stream dynamic, water quality, groundwater recharge and reduce flooding.	Retains wetland habitat and provides additional wildlife habitat
C2S	Create San Diego River Park Trail along north edge of river.		
C3S	Coordinate with proposed Grantville Master Plan to create improved open space at the bend in the river.	Future benefit when implemented in long term.	Future benefit when implemented in long term.
C4S	Improve open space and trail connection with Alvarado Canyon and Navajo Canyon.	Potential to improve creek dynamic, water quality, groundwater recharge and reduce flooding with a single entity managing the public lands.	Improve visual and habitat connection to Alvarado Canyon.
C5S	Create connection between San Diego River Park Trail and Mission San Diego De Alcalá.		
C6S	Augment ponds by removing barriers between sections. A larger deep water body is better than a number of smaller, divided segments. If possible, divert low flow of river around the ponds.	Improve river dynamic, water quality, groundwater recharge and reduce flooding.	
C7S	Create San Diego River Park Trail along east edge of river.		

Simple Projects - Upper Valley

U1S	Coordinate with proposed Grantville Master Plan to preserve additional open space along Alvarado Creek Corridor at the confluence with the San Diego River.	Future benefit when implemented in long term.	Future benefit when implemented in long term.
U2S	Create habitat and continuous multi-use pathway near river adjacent to Admiral Baker Golf Course.	Future benefit when implemented in long term.	Future benefit when implemented in long term.
U3S	Engage land owner and ongoing planning effort to explore potential to acquire land as improved open space.		Increases open space, visual and wildlife habitat connections with canyons and Allied Gardens neighborhood.
U4S	Coordinate with the anticipated redevelopment of Superior Mine to create interpretation zone of valley history, mining operations, and future redevelopment where appropriate at edge of active operation.		

IMPLEMENTATION

RECREATION	EDUCATION	
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.	Potential to interpret wetland habitat and its associated species.	Integrate Caltrans property as part of riparian open space and pursue dedication of new river open space preserve.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.		Coordinate with the appropriate agencies, community groups and the Grantville Master Plan Study to identify specific route alignment of potential multi-use pathway on north side of the river.
Creates potential active / passive recreation site at confluence with connection to San Diego River Park Trail. Park program could include picnicking, bicycle staging area, interpretive element and parking.	Potential to interpret confluence of Alvarado Creek and the San Diego River.	Coordinate with Grantville Master Plan Study to identify potential land for park or open space through acquisition or open space easements.
Creates visual and physical connection from river corridor to Alvarado Canyon and Adobe Falls, Kensington and College West communities, Create multi-use bridge near Mission.		Coordinate with appropriate agencies and community/special interest groups to study potential and to identify specific route alignment of potential multi-use pathway on south side of Alvarado Creek. Coordinate with public agencies to explore potential to aggregate public lands under a single management.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.		Coordinate with appropriate agencies to improve on-street bike lane and provide signage.
Potential to improve the open space and trail connection to the Grantville Master Plan Area.		Coordinate with Grantville Master Plan Study and appropriate agencies and community groups to identify potential for open space easements or land acquisition to increase open space on east edge of ponds.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.		Coordinate with appropriate agencies, community groups and the Grantville Master Plan Study to study potential and to identify specific route alignment of potential multi-use pathway on east side of the river if land can be acquired. Identify location for pedestrian bridges crossing the river and creating connection to Mission San Diego de Alacala. If land cannot be acquired study alternative alignment on west side of river.
		Coordinate with appropriate agencies, community groups and the Grantville Master Plan Study to identify potential land for habitat, trail and recreation through acquisition or open space easements. Coordinate with Navajo Community Plan. Refer to Alvarado Confluence Enhancement on preceding pages.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.	Create views to river and access from golf course.	Continue dialogue with Navy planners to explore opportunities to modify golf course to create space for trail corridor and to improve relationship of golf course with the river. Coordinate with Navajo Community Plan.
		Initiate dialogue with Superior Mine land owners and planners to explore potential to acquire land or establish open space easements to create a significant open space and/or park somewhere within the undeveloped land in addition to a habitat corridor that follows the 100-year floodway, broaden the river channel with potential to create meander, and a continuous multi-use pathway.
	Interpret Mission Dam Flume, milling sites and history of extraction industry.	Initiate dialogue with Superior Mine land owners and planners to explore potential to create interpretive kiosk in the short term and begin discussions to consider trail and open space as an integral part of the future redevelopment of the site.



Confluence and Upper Valley Complex Projects Recommendation Diagram

KEYNOTE RECOMMENDATION

BENEFITS

Complex Projects - Confluence

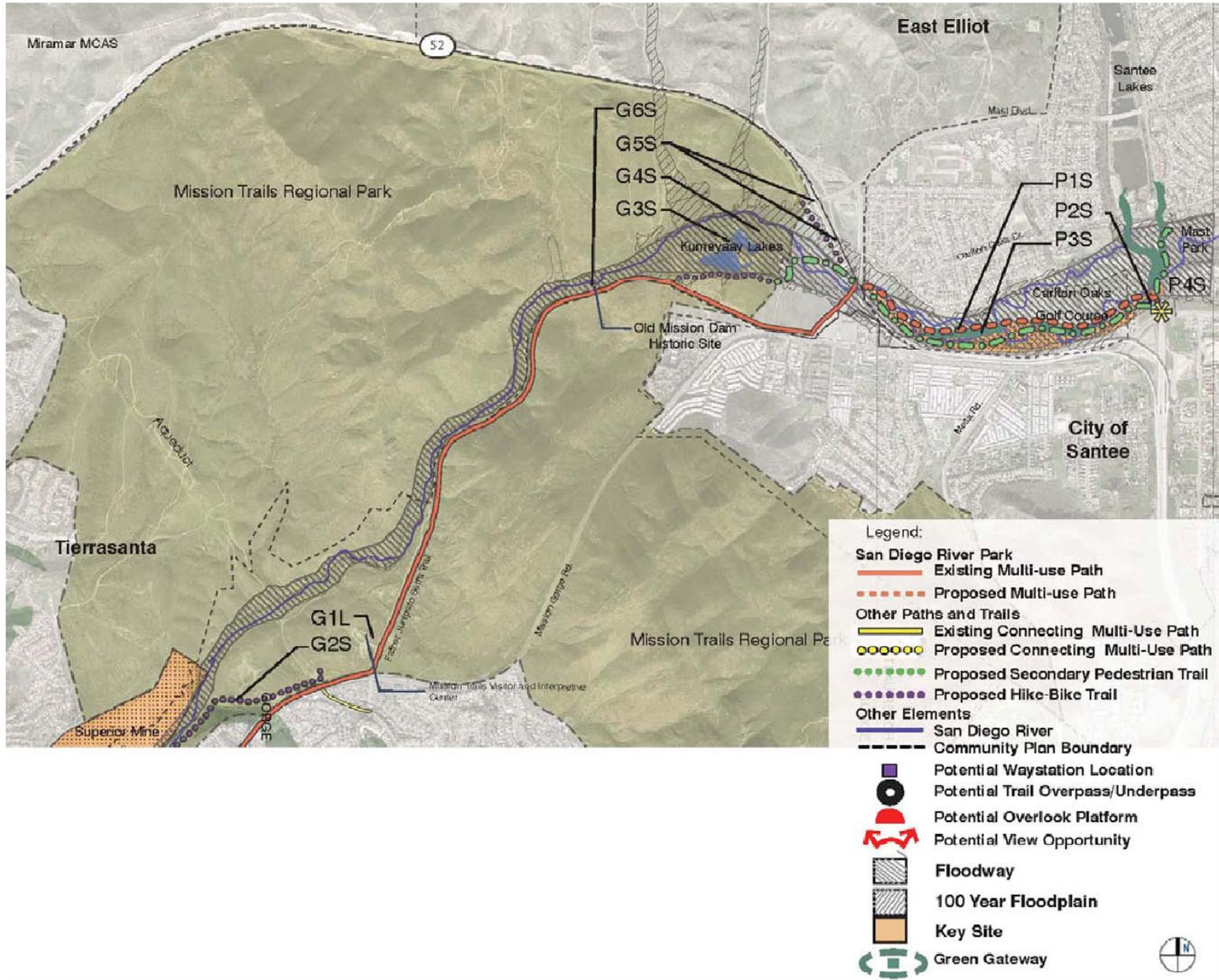
		HYDROLOGY	ECOLOGY
C1C	Implement trail and open space plans	Potential to improve water quality through expanded native vegetation filtration.	Potential to improve wildlife connectivity through expanded open space.
C2C	Implement open space identified through Grantville Master Plan Study to improve habitat and recreation.	Increased open space could create adequate space to accommodate a broader river channel, increased river meander separate from pond.	Increased open space could create a functional wildlife habitat corridor through this constrained section of the river valley between Friar's Road and I-5.
C3C	Implement trail connection and interpretive signage to Mission San Diego De Alcalá connecting via Rancho Mission Road and San Diego Mission Road.		

Complex Projects - Upper Valley

U1C	Implement potential improvements to trail and habitat connections with Alvarado Canyon and Navajo Canyon.	Improve stream condition of Alvarado Creek confluence to increase channel width and potential meander to improve water quality and ground water recharge.	Potential to improve wildlife connectivity through expanded open space.
U2C	Improve open space and trail connection to Elanus Canyon north of Admiral Baker Golf Course.		
U3C	Continue to collaborate with Navy planners to integrate Admiral Baker Golf Course with the river to create expanded riparian corridor, habitat and trail connections.	Potential to improve water quality through expanded native vegetation filtration.	Explore opportunity to improve ecological compatibility of golf course with river and create habitat connections with canyons. If course were to redevelop, consider "links" approach with natural vegetation between tees, landing sites and holes.
U4C	Separate stream flow from ponds as land is redeveloped.	Increase channel width and meander to improve water quality, sediment transport, flood control capacity and ground water recharge, Explore potential to use pond water to create pulse flows in river.	Expand riparian habitat.
U5C	If land is acquired, develop improved open space with views and access to ponds as habitat and recreation areas.	Increased open space could create adequate space to accommodate a broader river channel, increased river meander separate from ponds.	Expanded open space increases wildlife habitat and habitat connectivity.
U6C	As Superior Mine redevelops, implement plan to focus development on river corridor and to create riparian habitat and multi-use pathway as component of redevelopment plan.		Refer to General Recommendations regarding Lateral Connections.
U7C	Create trail connection to Tierrasanta neighborhood with the San Diego River Park		

IMPLEMENTATION

RECREATION	EDUCATION	
Potential for natural open space and passive recreation park somewhere within this area.		Prepare specific plan for design of trail alignment and natural open space as land or easement is acquired
Existing condition is very constrained, and San Diego River Trail may require terracing to continue through the confluence reach without acquisition of additional land area.		It is anticipated that the Grantville Master Plan Study will identify lands that are appropriate for open space to continue the San Diego River Park and Trail. If land is acquired, initiate specific development plan for the San Diego River Park and Trail.
Connect to Mission, pedestrian only on North and West side.	Interpret Mission and importance of river to its location along the San Diego River Park Trail.	Coordinate with the San Diego Bicycle Master Plan and Community Plans to identify specific alignment and establish easement. Explore opportunities with willing land owners to establish public access.
Potential to connect Alvarado Canyon and Adobe Falls to river corridor. Consider new trolley stop near confluence of Alvarado and the river with shared parking with Urban Village Redevelopment.		Prepare specific plan for design of trail alignment, natural open space and daylighting Alvarado Creek
Consider new neighborhood park with redevelopment, providing active and passive recreation in open space parks in canyons and hillsides. Consider ecologically oriented resource park as component of the San Diego River Park in the floodplain. Connection could follow Santo Road alignment or east end of golf course.		Continue dialogue with Navy planners and Superior Mine land owners and planners to identify potential locations.
Create waystation with access to river corridor and bus node at Mission Gorge Road at Admiral Baker Park.		Continue dialogue with land owners on both sides of river to establish easements or acquire land to create trail and habitat continuity. Coordinate with Navajo Community Plan.
Potential for natural open space and passive recreation park somewhere within this area.		Continue dialogue with Navy planners and Superior Mine land owners and planners to identify potential locations and develop specific plan for realignment of river channel.
Creates continuity of San Diego River Park Trail.	Interpret extraction industry, reclamation and restoration, the history of the river and valley, and the efforts of the San Diego River Park Foundation.	Continue dialogue with appropriate agencies, community groups and Superior Mine land owners and planners to integrate the San Diego River Park and Trail with proposed development.
Trail connection will create access to the River Park from Tierrasanta.		Coordinate with appropriate agencies, community/special interest groups and land owners to identify specific alignment and access points.



Gorge and Plateau Simple Projects Recommendation Diagram

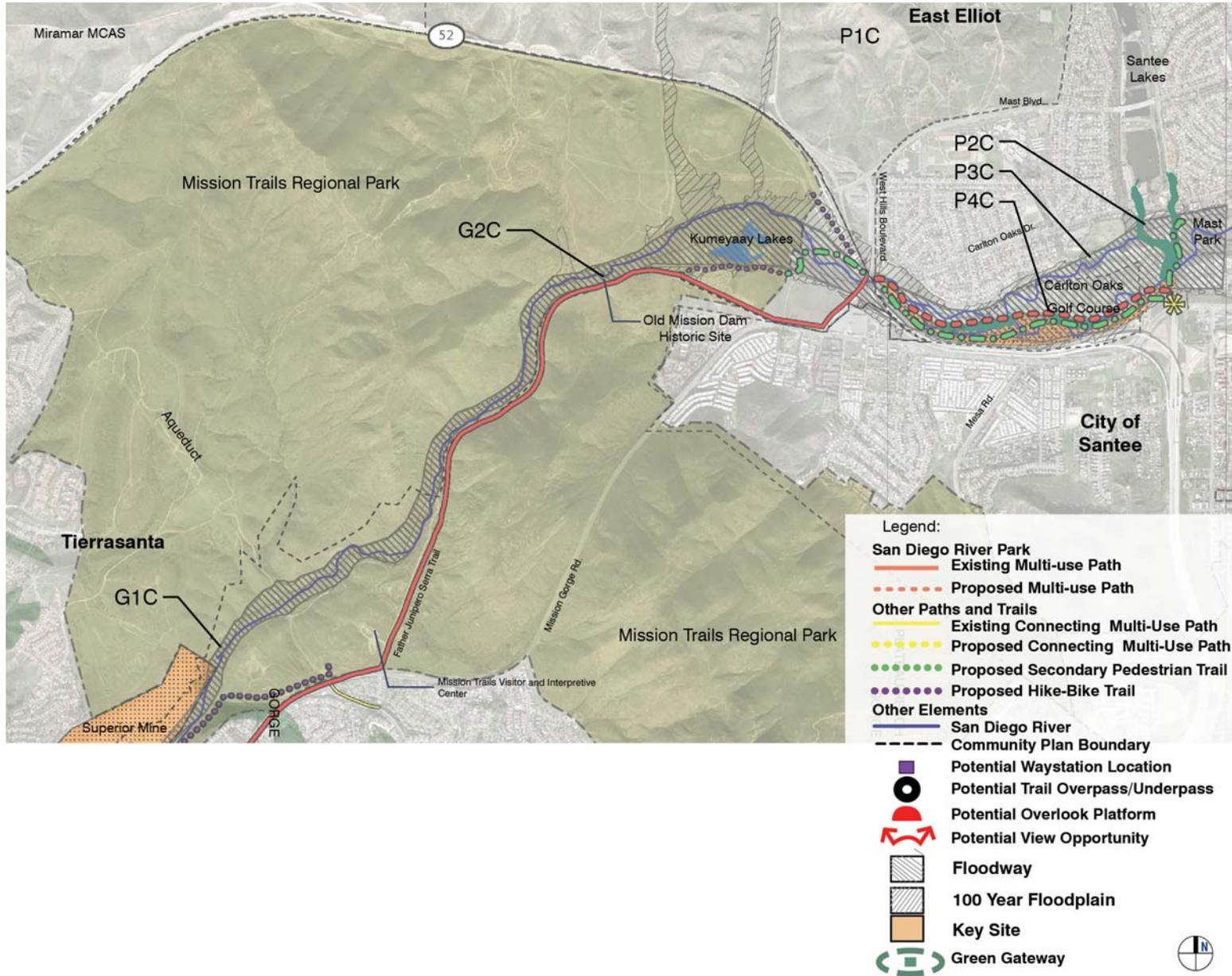
KEYNOTE RECOMMENDATION

BENEFITS

		HYDROLOGY	ECOLOGY
Simple Projects - Gorge			
G1S	Support Mission Trails Regional Park effort to establish a continuous trail system and identify potential connections between the San Diego River Park Trail and Existing hike/bike trails in Mission Trails Regional Park.	Potential to improve water quality through increased soft surface filtration.	
G2S	Support existing and proposed interpretation of the river and history of the park at Mission Trails Visitor and Interpretive Center		
G3S	Support existing interpretation of the river and the history of valley at campground and Kumeyaay Lakes.		
G4S	Support the implementation of the Kumeyaay Lakes Dredging and Berm Restoration Capital Improvement Project.	Explore the potential to reintroduce sediment excavated into the river system downstream to invigorate sediment transport process.	Ensure native habitat along Kumeyaay Lakes.
G5S	Create soft-surface San Diego River Park Trail segment between Mission Trails Regional Park and proposed segment adjacent to Carlton Oaks Golf Course. Connect to Mast Boulevard Trail head on Park and to Father Junipero Serra trail.	Potential to improve water quality through increased soft surface filtration.	
G6S	Support the implementation of the Old Mission Dam Dredging Capital Improvement Project.	Explore the potential to reintroduce sediment excavated above dam into the river system downstream to invigorate sediment transport process.	Ensure native habitat value along the river.
Simple Projects - Plateau			
P1S	Create San Diego River Park Trail head, as a gateway to San Diego at Carlton Oaks Golf Course. Coordinate with City of Santee to create habitat and trail connection to Santee Lakes and to Mast Park.		
P2S	Create historic interpretation zone.		
P3S	Capitalize on existing tree galleries in golf course to create buffer along river and remove exotic vegetation from river corridor.	Native vegetation buffer between river channel and golf course will filter runoff and improve water quality.	Native vegetation will expand and improve riparian wildlife habitat and habitat connectivity. Removal of exotic species will also reduce seed source limiting dispersal into Mission Trails Regional Park.
P4S	Create River Park Trail head, as a gateway to River Park at Carlton Oaks GC. Coordinate with City of Santee to create habitat and trail connection to Santee Lakes and to Mast Park.		Potential for native vegetation to replace non-native species within the golf course.

IMPLEMENTATION

RECREATION	EDUCATION	
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.		Continue dialogue with Mission Trails Regional Park Master Plan and San Diego Bicycle Master Plan to identify potential alignments within Park and along Mission Gorge Road.
	Build upon interpretation of significance of river to settlement of region.	Continue dialogue with Mission Trails Regional Park Master Plan and Citizens Advisory Committee.
	Build upon interpretation of significance of river to settlement of region.	Continue dialogue with Mission Trails Regional Park Master Plan and Citizens Advisory Committee.
		Continue dialogue with Mission Trails Regional Park Master Plan and Citizens Advisory Committee.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.	Create views to river and access from golf course.	Coordinate with Mission Trails Regional Park Master Plan, citizens advisory committee, private land owners and appropriate agencies to identify specific trail alignment, establish easements and means to implement.
	Provides for historic interpretation of the Dam, ensures structural integrity of historic dam, and could potentially provide source for sediment downstream if reintroduced into system.	Continue dialogue with Mission Trails Regional Park Master Plan and Citizens Advisory Committee.
Provide continuous multi-use pathway.		Initiate dialogue with City of Santee planners, golf course owners and City of San Diego to identify potential trail alignment, vegetation changes, and kiosk/trail head location.
Provide continuous multi-use pathway.	Interpret significance of the river to historic settlement at confluence of San Diego River and Santee Lakes as gateway to City of San Diego segment of River Park.	Install signage, interpretive kiosks and furnishings providing information about the San Diego River Valley and its importance to the settlement of the valley as well as the natural systems and ecology of the region. Implement as part of the trail development.
	Potential for community educational program for removal of exotic vegetation	Initiate dialogue with golf course owners and City of San Diego to explore potential to evolve golf course edge toward native plant species and to develop a vegetation management plan.
Provide continuous multi-use pathway under SR-52 and through or adjacent to Carleton Oaks Golf Course that will connect to City of Santee trail system.		Initiate dialogue with City of Santee planners, Padre Dam Municipal Water District, golf course owners and City of San Diego to identify potential trail alignment, vegetation changes, and kiosk/trail head location. Coordinate with improvements proposed by Santee Lakes master Plan.



Gorge and Plateau Complex Projects Recommendation Diagram

KEYNOTE RECOMMENDATION

BENEFITS

Complex Projects - Gorge

HYDROLOGY

ECOLOGY

G1C Collaborate with Mission Trails Regional Park to create waystation at edge of Mission Trails Regional Park with interpretive information.

G2C Continue to support maintenance of the Old Mission Dam dredging. This project may need to recur in the future on a regular basis.

If sediment can be reintroduced below dam some sediment transport can be reestablished.

Complex Projects - Plateau

P1C Explore potential to connect with new open space to north and east.

Preserving open space will maintain filtration of runoff and protect water quality.

Preserving open space will protect wildlife habitat and habitat connectivity.

P2C If golf course use were to change in the future, entire site should be preserved for natural open space with a neighborhood scale park as a gateway to the San Diego River Park.

Creating natural open space will maintain filtration of runoff and protect water quality.

Creating natural open space will protect wildlife habitat and habitat connectivity.

P3C Integrate secondary stream channel through golf course with main San Diego River channel and create buffer. Expand native vegetation through golf course for wildlife habitat and to increase filtration to improve water quality.

Natural buffer will improve water quality by filtering runoff from golf course.

Natural buffer will expand wildlife habitat and improve connectivity.

P4C Explore potential to realign some golf holes to eliminate dike, recreate stream meander, realign multi-use pathways and expand native wildlife habitat. Consider a new concept for the golf course as a links or target course that is substantially native vegetation.

Improves river hydrologic function and water quality.

Expands riparian habitat.



IMPLEMENTATION

RECREATION

In long term, creates opportunity for rest stop on trail at edge of Mission Trails Regional Park.

EDUCATION

Interpret Mission Dam Flume, cultural history and natural habitat of Mission Trails Regional Park.

Install signage, interpretive kiosk and furnishings with implementation of San Diego River Park Trail segment as part of the Superior Mine redevelopment.

Provides for historic interpretation of the Dam, ensures structural integrity of historic dam, and could potentially provide source for sediment downstream if reintroduced into system.

Explore the potential to develop a low impact approach to sediment removal that will allow small amounts of sediment to be reintroduced into the river system downstream to invigorate sediment transport process.

Plan for active recreation facilities commensurate with new East Elliot development.

Monitor future action related to land acquisition and explore opportunities to create wildlife habitat, trail linkages under or over SR-52 to East Elliot and interpretation of San Diego River Valley history.

Introduces River Park and creates strong interface with City of Santee

Monitor future action related to potential land use change.

Initiate dialogue with Carlton Oaks Golf Course to identify methods to modify golf course to be more environmentally compatible with river corridor.

New multi-use pathway is critical to continuity of River Park, potentially along south edge of new meandering and braided stream with connections to Santee, Navajo, Lake Murray.

Waystation interpretive opportunities - Upper river, reservoirs, topography, communities, Gateway to San Diego.

Initiate dialogue with appropriate agencies, community/special interest groups and Carlton Oaks Golf Course to explore potential changes to course.

APPENDIX J - RECOMMENDED PLANT SPECIES

RECOMMENDED PLANT SPECIES FOR THE RIVER CORRIDOR AREA

Note: This list is a recommendation only and not exclusive. Actual native plant species will be based on the area that is being re-vegetated.

RI and Ru riparian
C/css coastal sage scrub upland and chaparral

Trees

Platanus racemosa	California Sycamore	ru	deciduous tree
Populus fremontii	Fremont Poplar	ru	deciduous tree
Quercus agrifolia	Coast Live Oak	ru,c/css	evergreen tree
Salix gooddingii	Black Willow	rl	deciduous tree
Salix hindsiana	Sandbar Willow	rl	deciduous tree
Salix laevigata	Red Willow	rl	deciduous tree
Salix lasiolepis	Arroyo Willow	rl	deciduous tree
Sambucus mexicana	Mexican Elderberry	ru	deciduous tree

Shrubs / groundcovers / grasses / vines

Artemisia douglasiana	Douglas Wormwood	ru, c/css,	woody perennial
Artemisia palmeri	Palmer's Sagewort	ru, c/css,	woody perennial
Artemisia californica	California Sage/ Coastal Sagebrush	c/css	drought-deciduous
Baccharis pilularis	Coyote Brush	c/css	evergreen shrub
Carex spissa	San Diego Sedge	ru	grass
Dudleya pulverulenta	Chalk Lettuce	c/css	succulent

<i>Encelia californica</i>	California Encelia	c/css	woody perennial
<i>Eriogonum fasciculatum</i>	Flat-top Buckwheat	c/css	shrub/perennial
<i>Eriophyllum confertiflorum</i>	Golden Yarrow	c/css	perennial
<i>Heteromeles arbutifolia</i>	Toyon	c/css	evergreen shrub
<i>Isocoma menziesii</i>	Goldenbush	c/css	evergreen shrub
<i>Juncus mexicanus</i>	Mexican Rush	rl	evergreen rush
<i>Keckiella cordifolia</i>	Heart-Leaved Penstemon	ru, c/css	perennial
<i>Lonicera subspicata</i>	San Diego Honeysuckle	c/css	evergreen vine
<i>Malosma laurina</i>	Laurel Sumac	c/css	evergreen shrub
<i>Mimulus puniceus</i>	Monkeyflower	c/css	woody perennial
<i>Mirabilis californica</i>	Wishbone Bush	c/css	evergreen shrub
<i>Muhlenbergia rigens</i>	Deer Grass	ru/c/css	grass
<i>Prunus ilicifolia</i>	Holly-Leaf Cherry	c/css	evergreen tree
<i>Rhamnus californica</i>	California Coffeeberry	c/css	evergreen shrub
<i>Rhus integrifolia</i>	Lemonade Berry	c/css	evergreen shrub
<i>Rhus ovata</i>	Sugar Bush	c/css	evergreen shrub
<i>Ribes indecorum</i>	White-Flowered Currant	c/css	deciduous shrub
<i>Rosa californica</i>	California Wild Rose	ru	deciduous shrub
<i>Salvia apicra</i>	White Sage	c/css	drought-deciduous
<i>Salvia mellifera</i>	Black Sage	c/css	drought-deciduous
<i>Sisyrinchium bellum</i>	Blue-Eyed Grass	c/css	perennial
<i>Typha</i> spp.	Cattail	rl	marsh

Viguiera lanata	Woolly-Leaf Sunflower	c/css	drought-deciduous
Vitis girdiana	Wild Grape	ru	deciduous vine
Yucca whipplei	Chaparral Yucca	c/css	succulent

RECOMMENDED PLANT SPECIES FOR THE RIVER INFLUENCE AREA

Note: This list is a recommendation for plant species that could be used in the transition area adjacent to the River Corridor Area and is not an exclusive list. Cultivated hybrids of native plant species are shown with an asterisk (*)

Br riparian

Bu upper riparian and chaparral transition

Trees

Platanus racemosa	California Sycamore	br	deciduous tree
Populus fremontii	Fremont Poplar	br	deciduous tree
Quercus agrifolia	Coast Live Oak	br, bu,	evergreen tree

Shrubs / groundcovers / grasses / vines

Artemisia californica 'montara ridge'	Dwarf California Sage	bu,	evergreen shrub
Artemisia californica	California Sage/ Coastal Sagebrush	bu	evergreen shrub
Baccharis 'centennial'*	Centennial Baccharis	bu	evergreen shrub
Baccharis pilularis	Coyote Bush	bu	evergreen shrub
Ceanothus griseus horizontalis *	Carmel Creeper	bu	evergreen shrub
Ceanothus hybrids	Hybrid Ceanothus	bu	evergreen shrub
Dendromecon rigida	Bush Poppy	bu	evergreen shrub
Encelia californica	California Encelia	bu	deciduous shrub

Erigeron glaucus*	Compact Beach Aster	bu	Perennial
Eriogonum fasciculatum	Flat-top Buckwheat	bu	shrub/perennial
Eriogonum fasciculatum 'dana point'*	Hybrid Dwarf Buckwheat	bu	evergreen shrub
Galvezia speciosa*	Bush Island Snapdragon	bu	evergreen shrub
Heteromeles arbutifolia	Toyon	bu	evergreen shrub
Iris douglasiana*	Pacific Coast Iris	br, bu,	Perennial
Juncus patens	Rush	br	rush
Keckiella cordifolia	Heart-Leaved Penstemon	br, bu,	evergreen shrub
Lonicera subspicata	San Diego Honeysuckle	bu	evergreen vine
Malosma laurina	Laurel Sumac	bu	evergreen shrub
Mimulus puniceus	Monkeyflower	br, bu,	shrub/perennial
Mirabilis californica	Wishbone Bush	bu	evergreen shrub
Muhlenbergia rigens	Deer Grass	bu	grass
Prunus ilicifolia	Holly-Leaf Cherry	bu	evergreen shrub
Prunus lyonii	Catalina Island Cherry	bu	Evergreen/shrub/tree
Rhamnus californica	California Coffeeberry	bu	evergreen shrub
Rhus integrifolia	Lemonade Berry	bu	evergreen shrub
Ribes indecorum	White-Flowered Currant	br, bu,	deciduous shrub
Rosa californica	California Wild Rose	br	deciduous shrub
Salvia clevelandii 'allen chickering'*	Allen Chickering Sage	bu	evergreen shrub
Salvia greggii 'salmon'*	Salmon Autumn Sage	bu	evergreen shrub
Salvia greggii 'white'*	White Autumn Sage	bu	evergreen shrub

Salvia leucophylla 'pt. Sal spreader'*	Hybrid Purple Sage	bu	evergreen shrub
Salvia mellifera 'repens'*	Prostrate Black Sage	bu	evergreen shrub
Salvia mellifera 'tera seca'*	Tera Seca Sage	bu	evergreen shrub
Salvia 'winifred gilman'*	Winifred Gilman Sage	bu	evergreen shrub
Sisyrinchium bellum	Blue-Eyed Grass	bu	perennial
Viguiera lanata	Woolly-Leaf Sunflower	bu	shrub/perennial
Vitis girdiana	Wild Grape	br, bu,	deciduous vine
Woodwardia fimbriata	Giant Chain Fern	br, bu,	fern



APPENDIX K - GLOSSARY

Active recreation	Programmed activities requiring specific built facilities, such as baseball fields, soccer fields, swimming pools, etc.
Aeration	A process of adding oxygen to water, accomplished by natural means such as streambed turbulence or by artificial means such as fountains
Alluvial	Of or relating to the sediment deposited by flowing water
Alluvium	Sediment deposited by flowing water
Aquifer	An underground layer of porous rock, sand or gravel that bears water
Basin	A region drained by a single river system
Best management practices	Structural, nonstructural or managerial methods that protect surface- and groundwater quality; these practices prevent or reduce the movement of sediment, nutrients, pesticides and other pollutants from the land into bodies of water
Biodiversity	Variability in different species of plants and animals within and between ecosystems
Biomass	Total amount of living matter, both plants and animals, within a given area
Biota	Inclusive term referencing the entire body of plant and animal life of a given region
Braiding	Condition in which a river channel has broken into a network of smaller, interwoven channels; erosion, sediment load, and variable flows can all contribute to braiding
Caltrans	California Department of Transportation
Channelization	Re-design of a river or stream's pathway; channelization will often straighten a waterbody's course to remove meander, and/or armor the banks so that flows can travel downstream faster
Confluence	Area where two or more rivers join and flow into each other
Cut-off fixture	A lighting fixture that reduces or eliminates the light emissions above a 90 degree plane; a full cut-off fixture allows no lights to escape above a horizontal line through the fixture, a semi-cutoff allows a reduced amount of light above this angle
Daylighting	Redirection of a section of a stream or creek that was previously underground into an above-ground channel
Delta	Alluvial deposit at the mouth of a river; area where a river divides before entering a larger body of water

Disturbance/recovery cycle	The length of time necessary for an ecosystem to restore itself following a damaging event; system resilience
Easement	The legal right to use land not owned by the party in question for a particular or limited purpose, such as a highway or utility
Ecostructure	The more constant, stable elements of the biosphere that form the framework of environmental interactions and events
Ecosystem	A self-sustaining system of organisms (plant and animal) and environment that functions as a single ecological unit
Ephemeral (river)	A river that flows sporadically and briefly, usually following storm events or snowmelt; the flow may last hours or days
Evapotranspiration	Loss of water from the soil by evaporation and by transpiration of the plants growing in the soil
Exotic plants	Non-indigenous vegetation; exotic species may be introduced to a region either intentionally or accidentally
Filtration	The process of separating materials, as in pollutants or sediment, from the liquid in which they are suspended
Floodplain	Any normally dry land, usually adjacent to a stream river or lake, that is subject to flooding
Floodway	A channel for carrying excess waters downstream, usually following storm events; water velocities tend to be greatest in this area
Flow velocity	The volume of water passing through a specified area in a specified unit of time
FSDRIP	First San Diego River Improvement Project
Glare	Light that is significantly brighter than the level to which the eye is adapted, and which causes annoyance, discomfort or loss of visual performance and visibility
Grade-separated crossing	A highway or road crossing that uses an underpass or overpass to allow different modes of travel to cross without interruption over the highway or road
Groundwater recharge	Process by which external water, usually rain or snowmelt, is added to an aquifer
Headwaters	Source of a river or stream
Hydraulic	Moved, operated or effected by liquid
Hydrologic	Dealing with the properties, distribution and circulation of water on and below the earth's surface and in the atmosphere

Hydrologic regime	Sum total of water that falls in or flows through an area on average during a given period
Hydromodification	Process whereby a streambank or riverbank is eroded by flowing water, typically resulting in suspension of sediments in the water
Impervious	Not allowing the passage of water
Impound	To collect and confine water in a reservoir or other structure
Infill	Development of vacant, underutilized or derelict parcels within an already urbanized area
Infiltration basin	A facility constructed within highly permeable soils that provides temporary storage of stormwater runoff, used to remove pollutants and encourage stormwater to seep back into the ground
Infrastructure	The basic services and facilities needed for a community or society to function, such as transportation and utility systems
Interceptor sewer	A sewer designed to convey dry weather flow from the combined sewer system to treatment plant
Interpretive kiosk	A small structure with one or more open sides that is used to display cultural or other educational materials about a nearby feature or area
Invasive plants	Species that disrupt native plant communities; these species compete with and may often displace native vegetation
Kumeyaay	Late prehistoric peoples inhabiting the San Diego River valley, circa 2000 years ago to mid 1700's.
Levee	An embankment to control flooding
Light trespass	Light which shines into neighboring properties or is of an undesirable or obtrusive nature
Links style golf	Golf course characterized by open, rolling terrain, natural vegetation, target landing zone and considerable use of topographic features
Low flow channel	The course or path within a larger channel that typically carries flows during periods of low and/or normal water levels
Macrophyte	Algae visible to the naked eye; a macroscopic, aquatic plant
Maintenance assessment district	A special district that assesses additional property tax within a defined region to fund and maintain unique public amenities that are above city standards, in this case, along the river corridor
Meander	Irregular, turning course of a stream or river
Mitigation site	An area used to compensate for an environmental impact by providing substitute or replacement resources in another location
MTRP	Mission Trails Regional Park

Multi-use trail	Non-vehicular pathway that accommodates a variety of users, which may include pedestrians, bicyclists and, less frequently, equestrians
Native plants	A region's indigenous vegetation; plant species which existed in an area before human intervention
Non-point source load	Pollutants that come from a wide variety of sources, rather than a single, specific point of origin
Open space	Area generally free from development or developed with low intensity uses that respect natural environmental characteristics
Outfall sewer	A sewer that discharges treated sewage effluent to a stream or river
Overstory	Uppermost layer of foliage in the tree canopy
Passive recreation	Hiking trails, cultural interpretation nature study
Perennial (river)	A river that flows continuously
Physiographic	Describing the earth's physical geography
Phytoremediation	Use of plants and trees to remove or neutralize contaminants
Pioneer species	The first species or community to colonize a barren or disturbed area
Plant community	The plant populations existing in a shared habitat or environment
Plant palette	The set or selection of plants chosen for a particular purpose
Plume	A subsurface column of one or more pollutants released from a point source
Pocket park	A small park accessible to the public
Pulse flow	High flows occurring during storm events
Quasi-governmental entity	A body or organization that carries out, by contract or assigned power, functions normally executed by a government agency
Reach	Portion of a stream or river with a unified character or landscape
Riffle	Area of shallow, turbulent water passing through or over stone or gravel of a fairly uniform size
Right of way	Strip of land over which public infrastructure--roads, utilities, railways--is built
Rip rap	Large rocks of a fairly uniform size used to prevent erosion
Riparian	Of, on or related to the banks of a natural water body
River Corridor Area	The existing 100-year Floodway as defined by FEMA plus a 35 foot Path Corridor on each side of the Floodway
River Influence Area	200 foot wide area abutting the River Corridor Area on each side of the river
SANDAG	San Diego Association of Governments

Sediment load	Organic and inorganic matter, both large and small, that is suspended in and/or carried by moving water; includes suspended particulate matter, nutrients dissolved in water as well as gravel or stones that move along the bottom of the streambed
Sediment transport	The movement of materials by gravity, water or wind
Setback	A required distance between property line and edge of building or structures; setbacks may apply from all (front, side, rear) or no property lines of a particular parcel
Sight line	Imaginary line from the eye to a perceived object
Sky glow	A condition where the night sky is illuminated by overly bright electric lights, producing a luminous haze that prevents a clear view of the stars
Spill light	Light which extends outside the intended area or object of illumination
Stakeholder	An individual or group who has a particular interest, monetary or otherwise, in a specific topic or project
Substrate	The base on which an organism lives
Sustainable design	Design that meets the needs of the present without compromising the ability of future generations to meet their own needs; the thoughtful use of resources that reduces the negative impacts
Swale	A shallow topographic depression designed to convey water, usually from storm events
Symbiotic	Describing a cooperative relationship of two dissimilar organisms that is mutually beneficial to each
Synergy	Combined energy of two or more organisms or entities that is advantageous to both or all parties
Tidal marsh	Low, flat marshlands traversed by channels and tidal hollows, subject to tidal inundation
Topography	The surface features, both natural and human-made, of a region
Tributary	A small river or stream that flows into a larger river or stream
Trunk sewer	A sewer that receives wastewater from many areas
Understory	Underlying layer of vegetation, particularly smaller trees and shrubs, in the tree canopy
Urban runoff	Water that collects and quickly runs off of primarily impervious surfaces such as roofs, streets, sidewalks, parking lots; this water, carrying such things as oils, grease, pesticides, soil, pet droppings, is untreated when it enters the storm sewer system and is thus one of the largest sources of non-point waterway pollution
Water quality buffer	A vegetated zone adjacent to a water body that helps prevent pollutants from entering surface waters by trapping sediment and the substances contained therein
Watershed	A region draining into a river, river system or other body of water; may contain several basins

Waystation
Xeriscape

A rest or interpretive area occurring between principal destinations along a route such as a bike trail
The use of drought-resistant and water-conserving plants

DRAFT

APPENDIX L - REFERENCES

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