

# San Diego River Park Master Plan



City of San Diego, California



DRAFT - September 2010

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# San Diego River Park Master Plan



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**The City of San Diego**

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Adopted by the:

Council of the City of San Diego

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# San Diego River Park Master Plan Amendments

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San Diego River Park Master Plan				
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# EXECUTIVE SUMMARY

The San Diego River has long been a source of life and vitality in the San Diego region. The water and the rich alluvial floodplain drew the Native Americans to the valley thousands of years ago. As recently as the 1950's, the San Diego River Valley provided green relief from the surrounding urban environment as a rich agricultural plain that offered a place for a quiet stroll or leisurely bicycle ride.

Since then, the river has suffered under the region's increasing development pressure. Commercial, residential and industrial uses have expanded into the valley, pushing ever closer to the water's edge. Extensive mining operations have excavated the river bed for sand and gravel. The proximity of current development threatens the integrity of both the river and the wildlife habitat it supports. Yet, despite the proximity, the river and the land uses adjacent to it are disconnected; the river is no longer the focus of the communities through which it flows.

The San Diego River Park Master Plan provides the vision and guidance to reverse this condition, to restore a symbiotic relationship between the river and surrounding communities by creating a river-long park, stretching from the San Diego River headwaters near Julian to the Pacific Ocean at Ocean Beach. This plan is the result of the grass roots community efforts led by the San Diego River Park Alliance and the San Diego River Park Foundation working in partnership with the City of San Diego.

This master plan is closely aligned with the City's General Plan goals for land use, mobility, urban design, economic prosperity, public facilities, recreation, conservation and historic preservation. The San Diego River Park vision, principles, recommendations and implementation strategy included in this master plan provides the City with a strong policy document for the future development along the river. The major components of the master plan are described below.

## VISION AND PRINCIPLES

Creating the San Diego River Park requires a new and innovative vision. This vision must form a comprehensive and integrated approach to addressing physical needs, such as improving water quality and river health, expanding wildlife habitat, as well as harder-to-quantify social and cultural opportunities, such as revealing the river's rich history and bringing people to the river. The vision for the river park is:

***Reclaim the valley as a common, a synergy of water, wildlife and people.***

This vision is supported by the five principles that are the guiding ideas against which future design and implementation decisions will be measured. The five principles for the master plan are:

- Restore and maintain a healthy river system
- Unify fragmented lands and habitats
- Create a connected continuum, with a sequence of unique places and experiences
- Reveal the river valley history
- Reorient development toward the river to create value



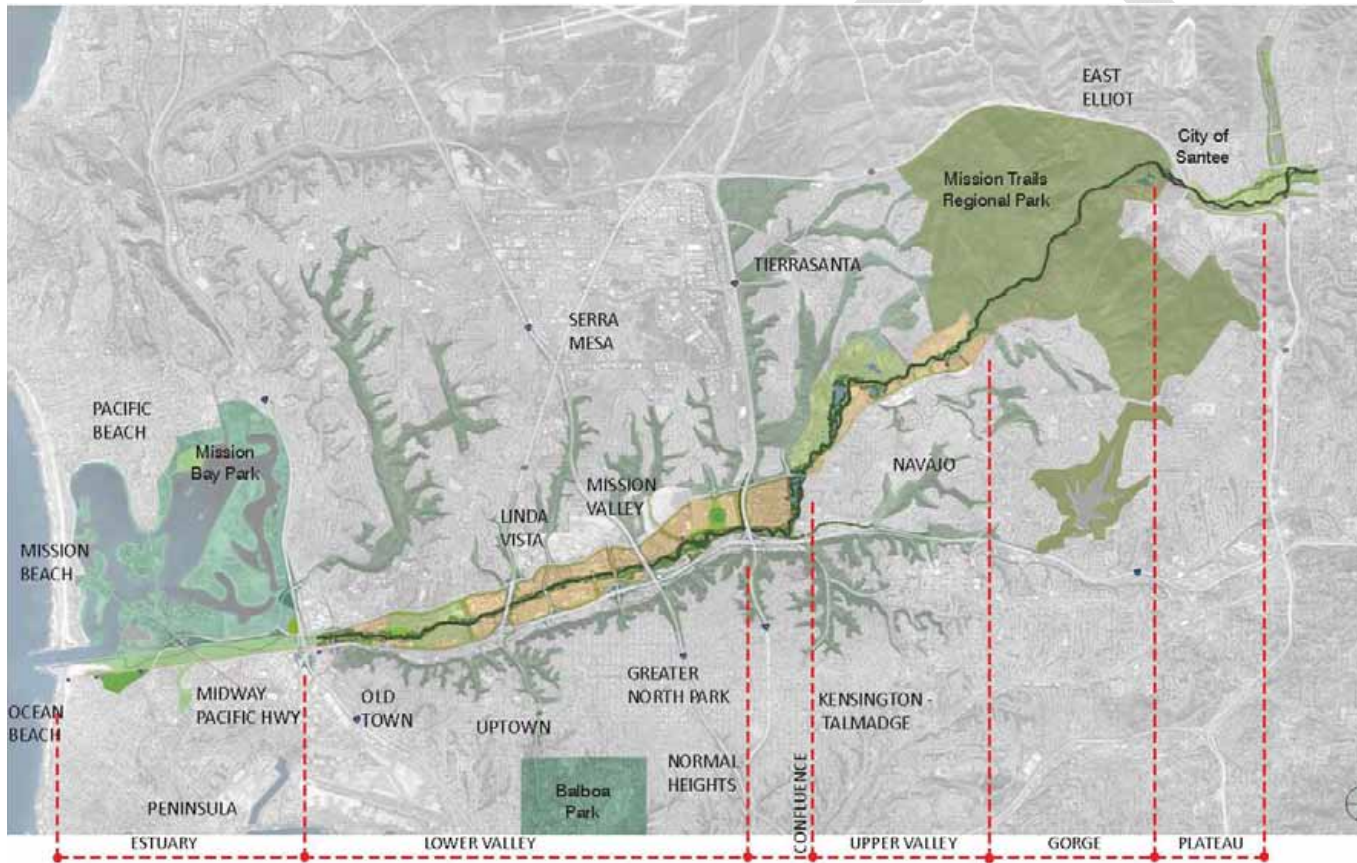
Unique places create opportunities to engage with the river



Mission Trails Regional Park offers opportunities to explore both nature and the history of the region

# RECOMMENDATIONS

The master plan’s recommendations are divided into general recommendations for the entire river park area and specific reach recommendations for the six distinct geographic areas of the river (Estuary, Lower Valley, Confluence, Upper Valley, Gorge and Plateau). General recommendations for the entire river park are organized as they relate to each of the five principles. The specific reach recommendations provide an overview of the area and recommendations on how to achieve the principles. Within some reaches, key sites are identified where special opportunities exist or where conditions define the site as a critical component to the implementation of the master plan.



The river is comprised of six distinct reaches

## DESIGN GUIDELINES

The purpose of the Design Guidelines is to provide written and graphic information to support the master plan's vision, principles, and recommendations and to support the development regulations of the City's Land Development Code and the community-specific regulations: the Mission Valley Planned District Ordinance, the Community Plan Implementation Overlay Zone for the Navajo Community, and the Mission Trails Design District Ordinance. The Design Guidelines apply to the River Corridor Area and the River Influence Area only. The River Corridor Area is the 100-year Floodway (as mapped by the Federal Emergency Management Agency, FEMA), plus 35 feet on both sides of the floodway to accommodate a pathway corridor. The River Influence Area extends 200' beyond the River Corridor Area on both sides of the river. The Design Guidelines for the River Corridor Area focus on the site planning of the floodway and the 35 foot-wide pathway corridor, the design and materials for trails and the river pathway, recreational amenities within the pathway corridor and appropriate plant materials. Within this section of the guidelines is a discussion on how the River Corridor Area interfaces with the City's Multi-Habitat Preserve Area (MHPA), Wetland Buffer overlay and what takes precedence. For the River Influence Area, the guidelines provide information on building requirements such as building setbacks, building orientation, type of access to the river park from adjacent development, building transparency and reflectivity, location for off-street parking, equipment and storage areas, and appropriate plant materials.



A continuous pathway will link from the ocean to Mission Trails Regional Park and to the City of Santee



A pathway corridor will be established adjacent to the 100 year floodway

## IMPLEMENTATION

Along the 17.5 miles of the San Diego River within the City of San Diego are private and public land owners. Implementation of the master plan will rely on both private and public investment in the river valley. The implementation strategy includes an implementing framework, implementation tools, maintenance, management and security strategies, and public outreach/education methods to make the river park a success. The implementation framework looks at how the five principles have been implemented in the six reaches of the river and identifies areas where improvements are still needed. Federal, state and local funding sources, development tools and the required government approvals are discussed within the implementation tools. The maintenance, management and security section provides strategies for the future that could include a maintenance assessment district, a ranger program, an 'Adopt the River' program and the creation of a conservation corps or neighborhood youth corps program. In addition, public outreach and education that will foster stewardship of the river valley is also discussed as a means to implement the river park.

## REGULATORY FRAMEWORK

The San Diego River Park is the policy document upon which all land use decisions along the river will be based on. In addition, the river area is also governed by Federal, State and Local agencies, their policies and permits. The Regulatory Framework Section of the Master Plan provides details on the different agencies and how they interact with each other.

### **Applicable City of San Diego policy documents include:**

- General Plan
- Community Plans and Specific Plans
- Park Master Plans
- Multiple Species Conservation Program Subarea Plan
- San Diego River Watershed Urban Runoff Management Plan
- Bicycle Master Plan Update
- San Diego Pedestrian Master Plan

Local, state and federal agencies also have direct or indirect involvement with the land planning, resource protection and permit approvals for the San Diego river area. Depending on the type of project proposed within the river valley, these agencies will need to be consulted and in some cases permits will be required.

**Applicable Agencies:**

- United States Army Corps of Engineers
- United States Fish and Wildlife Service
- California Coastal Commission
- California Department of Fish and Game
- Regional Water Quality Control Board
- Surface Mining and Reclamation Act of 1975
- City of San Diego Municipal Code and Land Development Code

## **LOCAL COASTAL PROGRAM**

The California Coastal Act of 1976 established a Coastal Zone Boundary and mandated that all jurisdictions within the boundary prepare a Local Coastal Program (LCP). The LCP brings the jurisdiction’s planning process into conformance with the 1976 Coastal Act.

The west end of the San Diego River Park is located within the coastal zone. The boundary line starts at the existing train tracks of the Union Pacific Railroad immediately east of Interstate 5 and ends at the Pacific Ocean. This part of the San Diego River Park is also within the boundaries of the Mission Bay Park Master Plan Local Coastal Program. The Mission Bay Park Master Plan includes planning and development standards to protect and preserve the state's coastal resources pursuant to the adoption and certification of the City of San Diego’s LCP. The Mission Bay Park Master Plan provides recommendations for public access, recreational and visitor-serving facilities, community park and recreation areas, preservation of water, marine and biological resources, beach and bluff preservation, impact of build-out on coastal access, visual resources and public works. By addressing these subject areas, the San Diego River Park Master Plan is in compliance with and supports the Local Coastal Program for Mission Bay Park.



# 1.0 INTRODUCTION

The creation of the San Diego River Park is an unprecedented opportunity to take the first steps toward reconnecting the San Diego region with its namesake waterway. The experience of nature and city will be joined together in the San Diego River Park system, creating a natural corridor within the urban milieu. Like San Diego's other great parks-- Balboa, Mission Trails and Mission Bay—the San Diego River Park will provide a natural day-to-day life of the city: a place of the city rather than a place apart from the city. The City of San Diego is at the forefront of the River Park effort, with guidance from the San Diego River Park Foundation and support from the San Diego River Coalition, the San Diego River Conservancy, the San Diego River Park Alliance, and the people and members of interested organizations who live within the watershed. The San Diego River Park Master Plan envisions a waterway that is healthy, accessible to the public and active with wildlife. The plan provides guidance on how the San Diego River can reassert itself as the focus of the river valley and become an asset to the community.

## 1.1 MASTER PLAN ORIGINS

The San Diego River is severely altered and constrained by mining, flood control and increasing development pressure. Commercial, residential and industrial uses have expanded in the valley floor, encroaching on the river's edge. Although mining activities are being phased out of the river valley, flood control and development pressure remain constant issues. These conflicting needs in the river valley have not only compromised the integrity of the river and the wildlife habitat it supports, but also the value of the river as a community resource.

The establishment of the San Diego River Park can reverse this trend; it will return the river to the people, and integrate the river valley into the life and landscape of San Diego.

### KEY PLAYERS

#### **San Diego River Park Foundation**

The Foundation is a 501 (c) (3) non-profit organization that is the host and chair of the San Diego River Coalition meetings. It acts in the capacity of a resource to the numerous groups working to establish the San Diego River Park and to the community in general. It is a central repository and clearinghouse for information and maintains the [www.sandiegoriver.org](http://www.sandiegoriver.org) website.

#### **San Diego River Coalition**

The mission of the San Diego River Coalition is to preserve and enhance the San Diego River, its watershed, and its natural, cultural, and recreational resources. This coalition of non-governmental organizations acts as the Citizens' Advisory Committee for the San Diego River Park. The coalition holds public meetings to discuss progress and potential projects with many of the governmental and quasi-governmental entities working on river issues with active citizen participation.

As the water and the rich alluvial floodplain drew the Kumeyaay people to the valley thousands of years ago, a healthy riparian environment interspersed with trails, parks and open space, all united by a flowing, clean river, will draw the people of the San Diego region back to the river.

The river park will be composed of a string of parks linked by open space, pathways, and green corridors: a multi-layered system that will serve a variety of needs, offering recreational, environmental and habitat benefits. This system of interconnected parks has proven successful across the nation, such as Minneapolis' Chain of Lakes, Boston's Emerald Necklace and Esplanade, and Denver's Park and Parkway system.

The San Diego River Park includes design guidelines that seek to highlight San Diego's coastal location by enhancing the ocean edge that has historically defined the city and extending this character inland, transitioning to the upland character of Mission Trails Regional Park. As the plan is implemented, people will be able to see and interpret the river's natural transitions as it flows from mountain to canyon to ocean, making the river processes visible and accessible to all visitors. For the plan's vision to be fully implemented, attention must be given to areas beyond the bounds of the city and this study area so that the health of the entire watershed system, including the canyons and creeks that are tributaries to the San Diego River, is addressed. The efforts to clean the river and create habitat connectivity and trail continuity must consider all of the areas that link to it and all waters that flow into it.

The creation of the San Diego River Park is the culmination of many years of effort, discussion by dedicated members of surrounding communities and governmental and quasi-governmental organizations. The concept of preserving the river valley as a dedicated and protected open space first generated discussion in 1975 when Kevin Lynch published 'Temporary Paradise, A Look at the Special Landscape of the San Diego Region'.

### **San Diego River Conservancy**

The conservancy's nine-member governing board consists of both state and local representatives. The board's diversity reflects its commitment to conserve an area of statewide significance. The San Diego River Conservancy is one of nine California conservancies. It was established by California Legislature (AB 2156, Kehoe) to preserve, restore, and enhance the San Diego River Area. The conservancy is an independent, non-regulatory organization within the Resource Agency and maintains the [www.sdrc.ca.gov](http://www.sdrc.ca.gov) web site.

### **San Diego River Park Alliance (Inactive)**

Formed and chaired by Mayor Dick Murphy, this organization addressed policy issues relative to the establishment of the San Diego River Park. Members of the alliance included local, state and federal elected officials, the Executive Director of the San Diego River Park Foundation, and Helix Water District, which has significant land holdings along the San Diego River.

This report reflected the author’s observations of the regional landscape and laid the groundwork to begin thinking of a long-term vision and plan for the river valley.

In 2001, The San Diego River Park Foundation was formed to coordinate the efforts of the many community groups and other organizations dedicated to the San Diego River and to work toward making the San Diego River Park a reality. A community-based, grassroots non-profit organization, the foundation provides organizational and financial support for projects that will help to establish this river park. The foundation works with local groups to encourage stewardship of the riparian environment and supports projects that will restore and enhance the river, provide community facilities, and create opportunities for citizens to learn about the rich history of the San Diego River Valley. Additional background information is provided in Appendix A.



### **Select Committee on Parks & River Restoration (Inactive)**

Chaired by Assembly Member Christine Kehoe, this group included other members of the California Assembly interested in park and river issues. The Committee studied how the State of California could best assist with issues related to the San Diego River.

### **San Diego River Watershed Workgroup**

A County-led workgroup, this body includes interested individuals, organizations, and agencies who are working to develop a management plan for the San Diego River Watershed. Although the workgroup’s efforts are separate and distinct from the San Diego River Park, this group will incorporate the San Diego River Park into its plans.

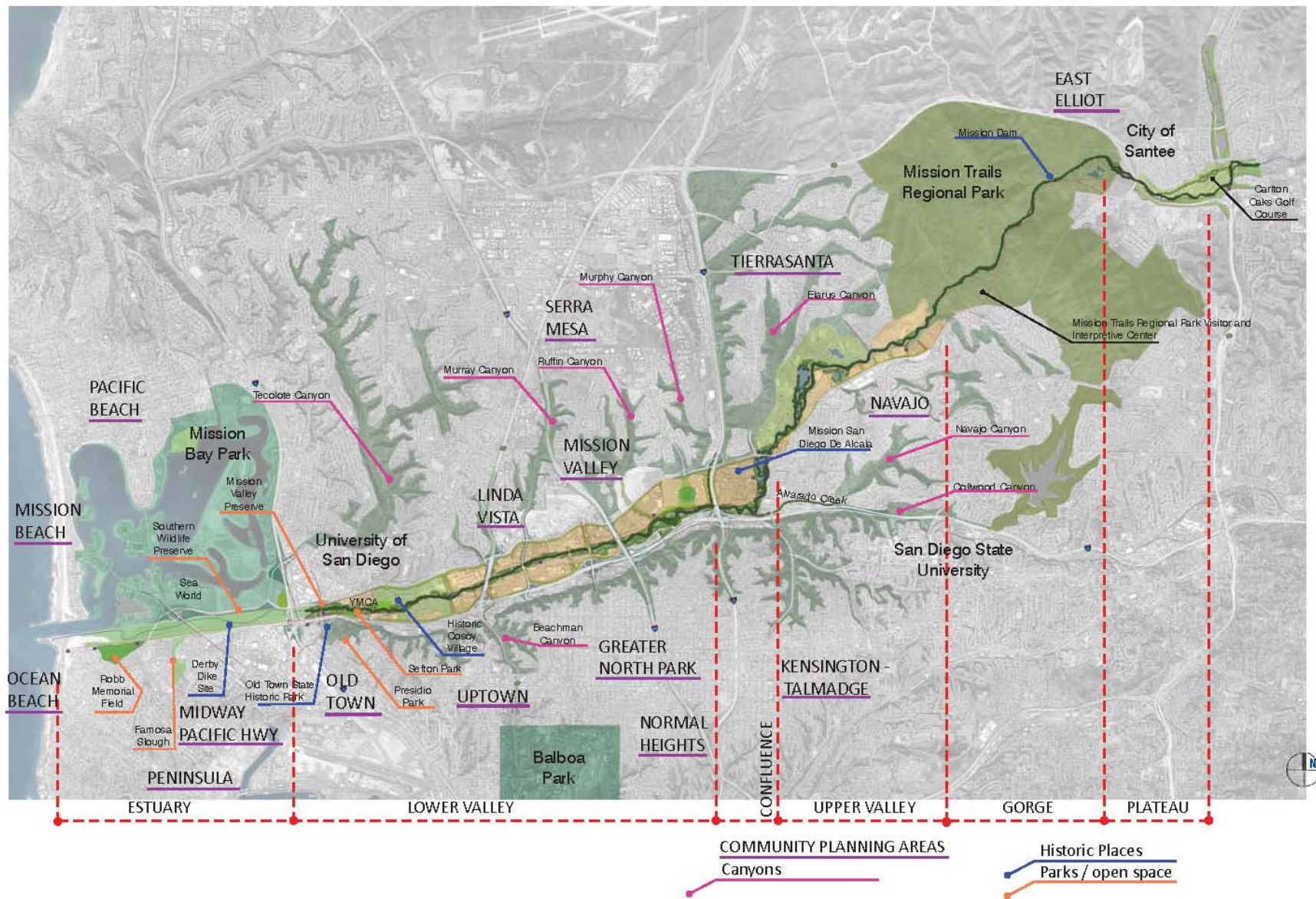


Figure 1. City of San Diego Context

## 1.2 MASTER PLAN PLANNING PROCESS AND PUBLIC INPUT

The City of San Diego initiated a nine-month study in 2003 to prepare a master plan for the San Diego River within the San Diego city limits. An important goal of the planning process was to engage the public and build upon the momentum and enthusiasm generated by the Conceptual Plan that was prepared in 2001 by the public and graduate students from California State Polytechnic University at Pomona. Central to this Master Plan effort were monthly meetings and workshops with the San Diego River Coalition; these meetings were advertised and open to the public and well-attended by community members. In addition, two public workshops and two public meetings invited broader community input confirming key issues, exploring planning options and drafting recommendations. Additional background information on the public input process is included as Appendix A.



Citizen Advisory Committee Public Workshop

## 1.3 PLANNING AREA

The master plan focuses on the 17.5-mile section of the San Diego River within the boundaries of the City of San Diego extending from the Pacific Ocean to the city limits shared with the City of Santee. The planning area is defined as a corridor extending one-half mile on each side of the river for the entire 17.5 miles. This corridor is consistent with the planning area defined by the San Diego River Conservancy to where state funding can be applied. However, the area of interest and influence extends well beyond this one-mile corridor. To be comprehensive, the master plan must consider the adjacent areas of influence. The planning area relates to the topography of the river valley, its adjacent canyons and the remaining open space of the uplands. Tecolote Canyon, Murphy Canyon, Murray Canyon, Ruffin Canyon, Alvarado Canyon and Navajo Canyon are areas that offer significant potential to substantially improve connections between the canyons and the San Diego River Valley.

The planning area contains two major parks, Mission Bay Park and Mission Trails Regional Park. These resource-based parks have significance not only to the city, but to the region and beyond, and can be linked by the San Diego River Park. The resulting context is an urban river corridor framed by the natural estuary of Mission Bay Park and the natural upland character of Mission Trails Regional Park.

One of the great challenges of creating the San Diego River Park lies in the fact that much of the land along the river is in private ownership. It is critical that efforts are made to work with the owners of these properties to open the river corridor to public access, either through acquisition of key parcels, or by establishing public access easements, and in turn, create or increase economic value for their private property. The river floodway, the area that has historically experienced periodic flooding, is of particular importance as it provides water quality buffer, habitat, and recreational space. Additionally, a large amount of land adjacent to the river lies within highway, street and utility rights-of-way. This land, often considered 'left-over' and factored out of the overall landscape equation, offers further opportunities to increase habitat and landscape connections.

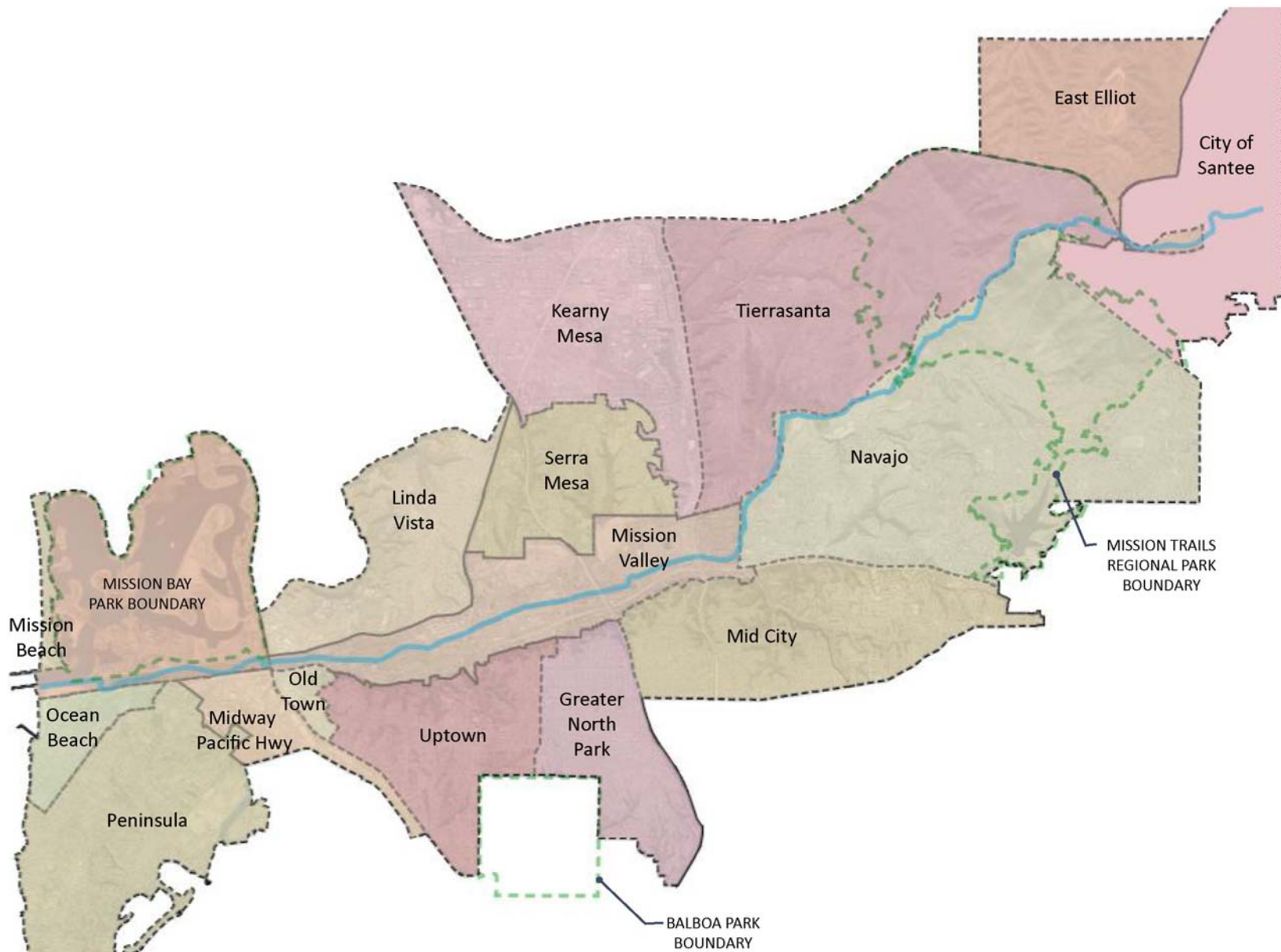
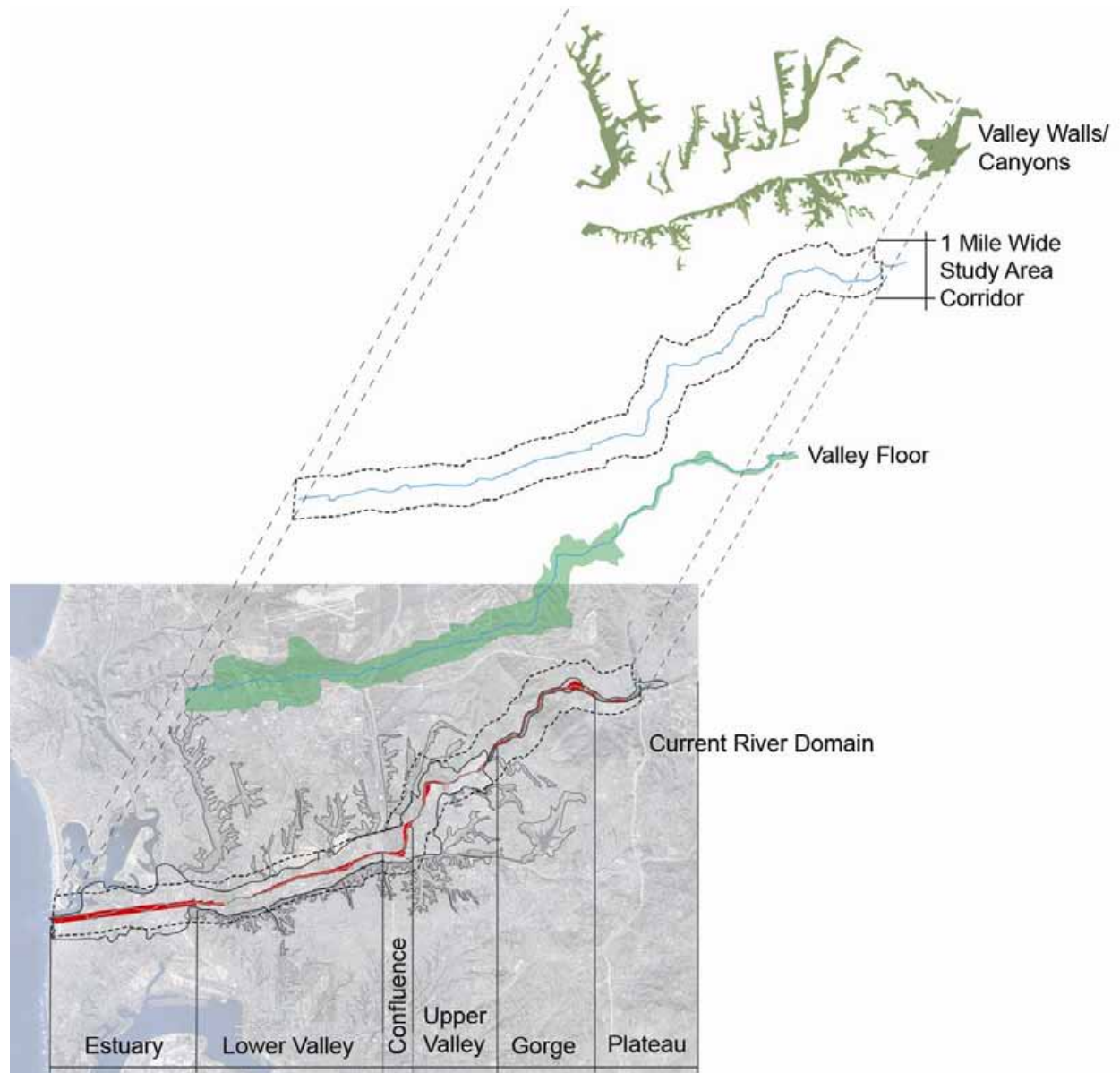


Figure 2 - Community Planning Areas

The master plan divides the San Diego River Park into six subsections, or reaches, based upon topographic characteristics and river condition. These reaches include the Estuary (extending from the ocean to the Mission Valley Preserve), the Lower Valley (extending east to I-15 and including Qualcomm Stadium site), the Confluence (from I-15 to Friars Road Bridge, where Alvarado and Murphy Creeks merge with the San Diego River), the Upper Valley (extending from Friars Road Bridge to Mission Trails Regional Park), the Gorge (within Mission Trails Regional Park), and the Plateau (upstream and east of Mission Trails Regional Park to the city's boundary with the City of Santee). There are issues and potentials that are shared by all of the reaches, as well as those specific to each individual reach.



Master Planning Area



## 1.4 MASTER PLAN BENEFITS

San Diego's urban form is defined by the relationship between its canyons, mesas, rivers and the ocean. The San Diego River Park will engage the ocean's edge and draw it inland to emphasize the large-scale role and function of the river. Much as Central Park defines New York City, the combined power of the river valley, its tributaries and the coastal beaches define San Diego and should be a part of the daily experience of the residents and visitors. The San Diego River Park will provide benefits for both residents and visitors. Benefits can be measured through the environmental, social and cultural, and economic value added to a community.

### 1.4.1 ENVIRONMENTAL BENEFITS

The environmental benefits added by improvements to the river can be measured by the degree to which the improvements add to the sustainability of the river corridor. Within this master plan the following environmental benefits focus on:

#### Creating a Healthy River System

Historically an ephemeral waterway, the river volume varied significantly from seasonal flooding to negligible flow. Human activities, such as impounding, flow diversion, mining, and flood control, have altered this pattern and created a channelized, perennial waterway. The San Diego River Park planning effort seeks to identify viable patterns appropriate to each reach that will improve water quality, sediment transport, and ground water recharge, while also expanding riparian habitat. The value of the river and the River Park is dependent on its water quality.

#### Reconnect Existing Habitats

The wildlife habitats within the river valley are disconnected, impaired and isolated from upland habitat. The San Diego River Park provides a strategy to reconnect existing habitat within and across the river valley. By reconnecting wildlife habitat, the ecological health of this system can be improved. To be successful, much of the habitat must remain protected; a balance must be found between protecting this fragile system and allowing access that educates river valley visitors about the wildlife and habitat of the river valley.

## 1.4.2 SOCIAL AND CULTURAL BENEFITS

The social and cultural benefits of well-designed projects within the river valley add to the recreational, scenic and image-making value of the site. This master plan provides for the following social and cultural benefits:

### Linkages

The San Diego River Park will unify the city. Every neighborhood in and adjacent to the river valley should connect to the San Diego River Park, linking each of these neighborhoods to the city's other great parks and to each other. In addition, developed parks are proposed within the river valley, offering an even larger spectrum of experiences to park users. The river park will also connect isolated pockets of development along the river with established neighborhoods, knitting the valley as a whole and cultivating a river valley identity.

### A New Identity

The San Diego River Park's most significant benefit may be its ability to create a new way to see the city. By linking two of the area's richest natural and recreational resources, Mission Bay Park and Mission Trails Regional Park, the San Diego River Park will offer a new way to recreate and move within the city. The San Diego River Park stands to become as vital a resource as the city's other great parks. Together with these two existing parks, the San Diego River Park will create a distinctive and identifiable park infrastructure which will become a source of pride and contribute to a new identity for the city.



2001 Platte River Corridor "before" - Denver, CO  
Contaminated industrial land separated the City from the river



2003 Platte River Corridor "after" - Denver, CO

## River Education

A majority of the native habitat within the river valley is out of sight and out of reach of humans, and is therefore disconnected from the daily experience of San Diego visitors and residents. The creation of the San Diego River Park offers many opportunities to educate communities about the river's natural systems and its historic significance. Many community groups are already involved in this effort; the process of creating the San Diego River Park increases the opportunities for these groups to become engaged with improving these resources by increasing visibility, access and awareness.

Schools and universities can also benefit from the first-hand experience of using the San Diego River as an outdoor classroom. By engaging Scripps Institution of Oceanography, San Diego State University, the University of San Diego and other institutions, a science-based coalition can be created that can study the river and build upon each others' work in the river valley, and give input to the park's design and management.

### 1.4.3 ECONOMIC BENEFITS

The economic benefits added by improvements to the built environment can be rated by evaluating their contribution to the business, sales and tourism tax revenues, and financial return on privately-funded projects. Within this master plan the following economic benefits focus on:



Fox River Corridor through the city of Waukesha, WI  
The project relates specifically to a bike and pedestrian trail system along the Fox River and a future community park



The Iowa River Corridor provides a framework of quality open space and a unique identity for the University of Iowa where open space along the river is used as an outdoor classroom

## Property Value adjacent to Open Space and the Reorientation of Development to the River

The effect on property values of a location near a park or open space has been the subject of several studies. Statistical analyses have been a common method of attempting to measure this effect. These analyses attempt to isolate the effect of open space from other variables which can affect property values, such as age, square footage, and condition of homes. Isolating the effect of open space can be difficult and results have been varied. Nevertheless, many studies have revealed increases in property values in instances where the property is located near or adjacent to open spaces. The effects of proximity to open space are not simply quantified; many studies have found the potential for an increase in property value depends upon the characteristics of the open space and the orientation of surrounding properties. Property value increases are likely to be highest near:

- Development that incorporates a park or open space as a primary amenity rather than “left-over” space
- Development that is designed to frame views of a park or open space
- Open space with recreation amenities and limited vehicular access
- Open Space that incorporates views of the river
- Open space with effective maintenance, surveillance and security

By creating the San Diego River Park and improving the condition of the river's health, property values will be enhanced. The river park will become an asset that will leverage higher quality design, land uses and development in the future. There are a number of sites along the river that are isolated from the adjacent neighborhoods. The river park will give these properties an identity within the valley and will encourage redevelopment with an orientation to the river.

There will be direct benefits to the city from the river park with the increase in property values and property tax revenues, and from the increase in pedestrian/tourist activity in the river valley. Further benefit should be anticipated by an increase in private reinvestment in the river park corridor by providing a variety of amenities, such as enhanced views, open space preservation, and access to convenient recreation opportunities. The value of these amenities to the public can be reflected in increased real property values and increased marketability for property located near the river park. Developers recognize these values and typically incorporate parks and open space into planning, design, and marketing of new and redeveloped properties.

## 2.0 VISION AND PRINCIPLES

A successful planning process demands the communication of a common vision and principles, not just recommended actions, to guide decision-making and implementation. A unified vision is essential to guide current and future planning efforts, in order to ensure that the master plan can respond to and accommodate changing conditions.

Key to the success of the San Diego River Park is to build a synergy that best serves the entire river valley and its many inhabitants, including people, animals and plants. Each of these inhabitants have a place within the multi-faceted system that is the river valley, and the San Diego River Park must be designed for and welcome all of them. The river system today is very much out of balance; water quality is severely degraded, the river pattern is constrained by culverts and channelization, the land is fragmented by different land uses, and the development has turned its back to the river.

Creating a synergy for the river requires a shift in the balance toward recovery, protection, preservation and prevention of further degradation. Re-establishing the health of the river and the habitats that adjoin it is essential to creating the San Diego River Park. There are places where development is appropriate and places where undeveloped land may best serve the broader community as open space. There are places that are essential to establishing habitat continuity, and others that are essential to linking pathways and recreation. The potential of the river park to serve as an educational tool unites all of these different places. Such delineations must be made fairly and equitably. A balanced San Diego River Park will satisfy these diverse concerns.

### 2.1 VISION:

#### **RECLAIM THE VALLEY AS A COMMON, A SYNERGY OF WATER, WILDLIFE AND PEOPLE**

As recently as the 1950's the San Diego River Valley was composed of farmland and open pastures. As the valley land uses changed from agriculture to shopping malls and offices, open space and a sense of the vast river valley was lost. Creating the San Diego River Park offers the potential to again have the river corridor be a place that all residents of the city can come to enjoy and experience the river, nature and one another. By seeking to create open space within this river corridor and to restore the river's riparian integrity, people can be reconnected with nature, and a distinct and identifiable river park can be created.

Key to establishing a river identity is defining an appropriate corridor. The river corridor must be wide enough to support the natural landscape, which includes the water and adjacent habitats, and provide common space for people to use.

Building upon the Conceptual Plan and discussions with the adjacent communities, the following five principles emerged from public workshops and meetings. These principles express the essential elements of the San Diego River Park vision, address the role of the river park in the city and in the region, and serve as a guide against which all future development proposals should be tested.

**These five principles will guide ecological, social, cultural, and economic development of the San Diego River Park:**

- Principle One: Restore and maintain a healthy river system**
- Principle Two: Unify fragmented lands and habitats**
- Principle Three: Create a connected continuum, with a sequence of unique places and experiences.**
- Principle Four: Reveal the river valley history**
- Principle Five: Reorient development toward the river to create value**



Mission Trails Regional Park offers opportunities to access, to view and to learn about the San Diego River, the natural environment and the history of the region



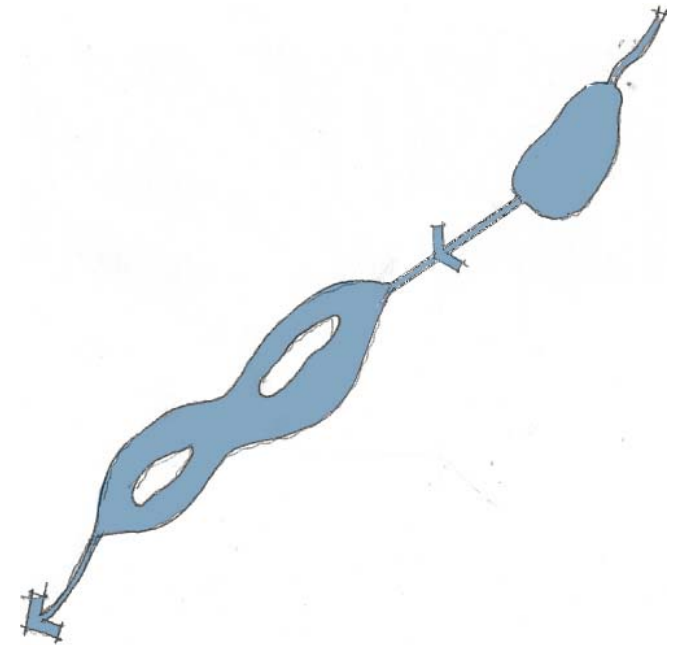
A free flowing San Diego River offers a healthier habitat for plants, wildlife and people

## 2.2 PRINCIPLE ONE:

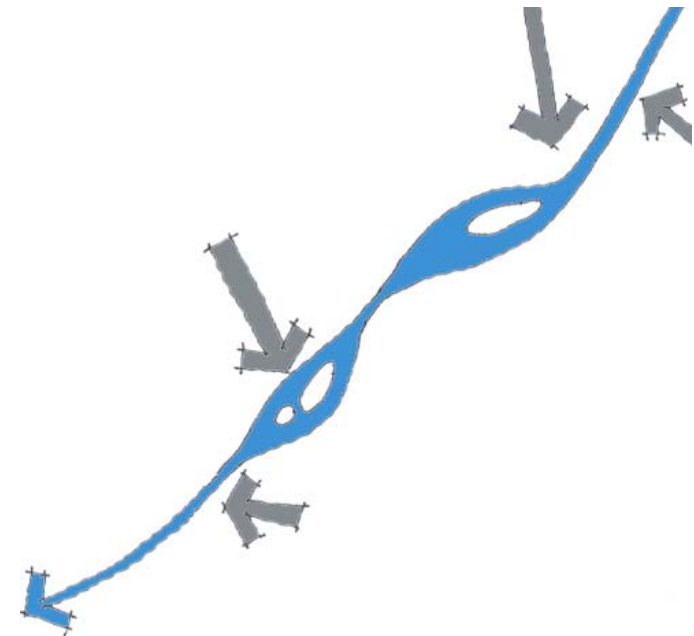
### RESTORE AND MAINTAIN A HEALTHY RIVER SYSTEM

The San Diego River Park seeks to return the San Diego River to a cleaner, healthier condition that showcases a naturalistic California river within the city's urban setting which invites people to see, smell and listen to it. A healthy San Diego River will become the symbol and embodiment of the river valley's natural character. The creation of the San Diego River Park in the City of San Diego will not lead to a cleaner river on its own. The river is impacted along its entire length and the entire watershed must be considered, as the impacts of inland sources of pollutants impair water quality downstream and in coastal environments many miles away. To restore the San Diego River to a healthy condition, specific benchmarks must be met:

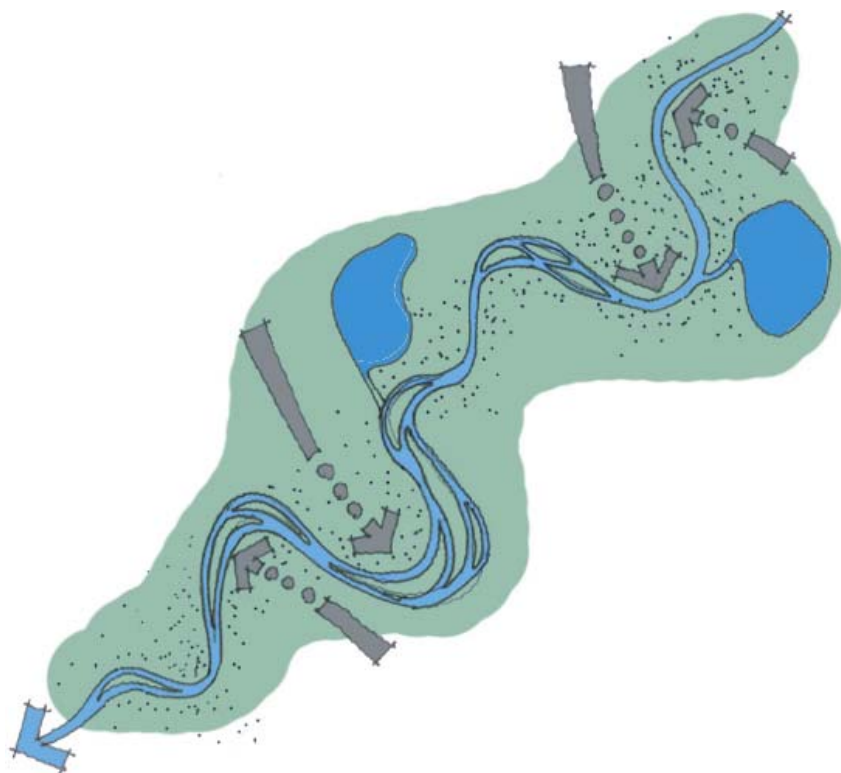
- It should be free flowing from the City of Santee to the Pacific Ocean.
- It should be meandering, braided and free of ponds.
- It should be bordered with native riparian vegetation that provides habitat for wildlife and filtration of urban runoff.



Today the river is channelized and impeded by ponds



Urban run-off flows directly into the river



Re-contour the channel to increase the river's length and meander, expand the ground water recharge area, separate ponds from the River, and filter urban run-off before it reaches the river.



Free flowing



Meandering



Bordered by vegetation



## 2.3 PRINCIPLE TWO:

### UNIFY FRAGMENTED LANDS AND HABITATS

The San Diego River Park seeks to create a unified native riparian corridor along the river and a continuum of native plant communities from riparian to upland in the canyons, and to accomplish connectivity on three primary levels: Linear connectivity along the river corridor allows animals, energy and nutrients to move more freely and extensively throughout the landscape system; Lateral connectivity between the river corridor and adjacent upland habitat areas is also important, reducing habitat fragmentation and allowing a natural progression of habitat types; Finally, connectivity between the river and its tributaries is vital to the health of the river, measured in water quality, and the health of the surrounding habitat.

Healthy and continuous native plant communities are essential to encouraging the movement and inhabitation of wildlife. Today, the canyons, undeveloped steep slopes and upland spaces provide significant refuge for wildlife. Connecting these lands with the river valley creates the potential for wildlife movement between uplands and the river. Therefore, the extent to which these uplands remain undeveloped is of benefit to the river park. These corridors should be of sufficient width to encourage the presence of a variety of bird and animal species, and contribute to reducing the existing condition that isolates most canyons from the river.

An important step to enhance connectivity is to integrate both “infrastructure” and “ecostructure” to improve the connectivity of



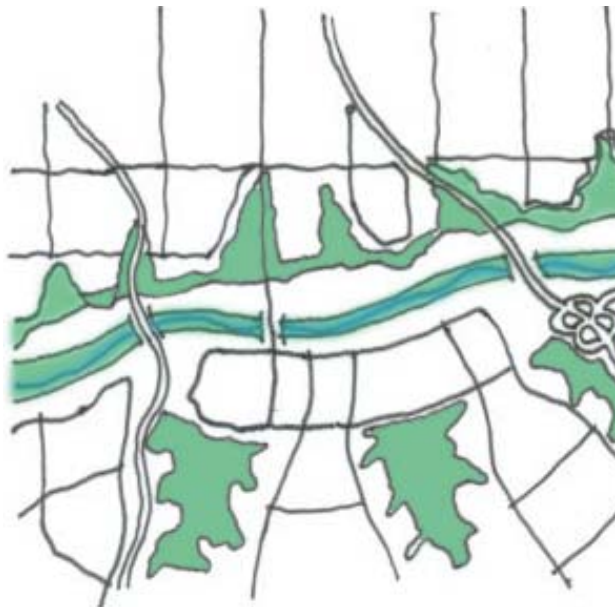
Like most canyons, Ruffin Canyon no longer reaches the river valley



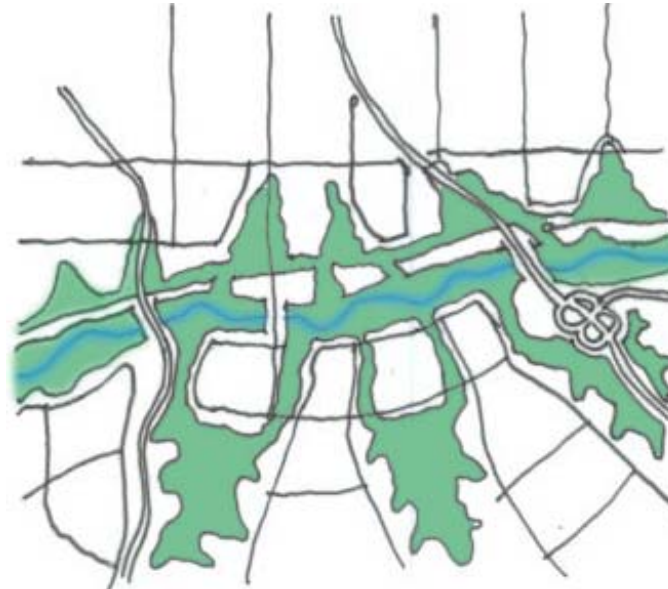
Native vegetation surrounding urban infrastructure softens and integrates structures with the natural landscape and provides connective habitat

natural habitat. Infrastructure describes such services as transportation, utilities, and storm water, while the term ecostructure encompasses rivers, vegetation, wildlife corridors and habitat.

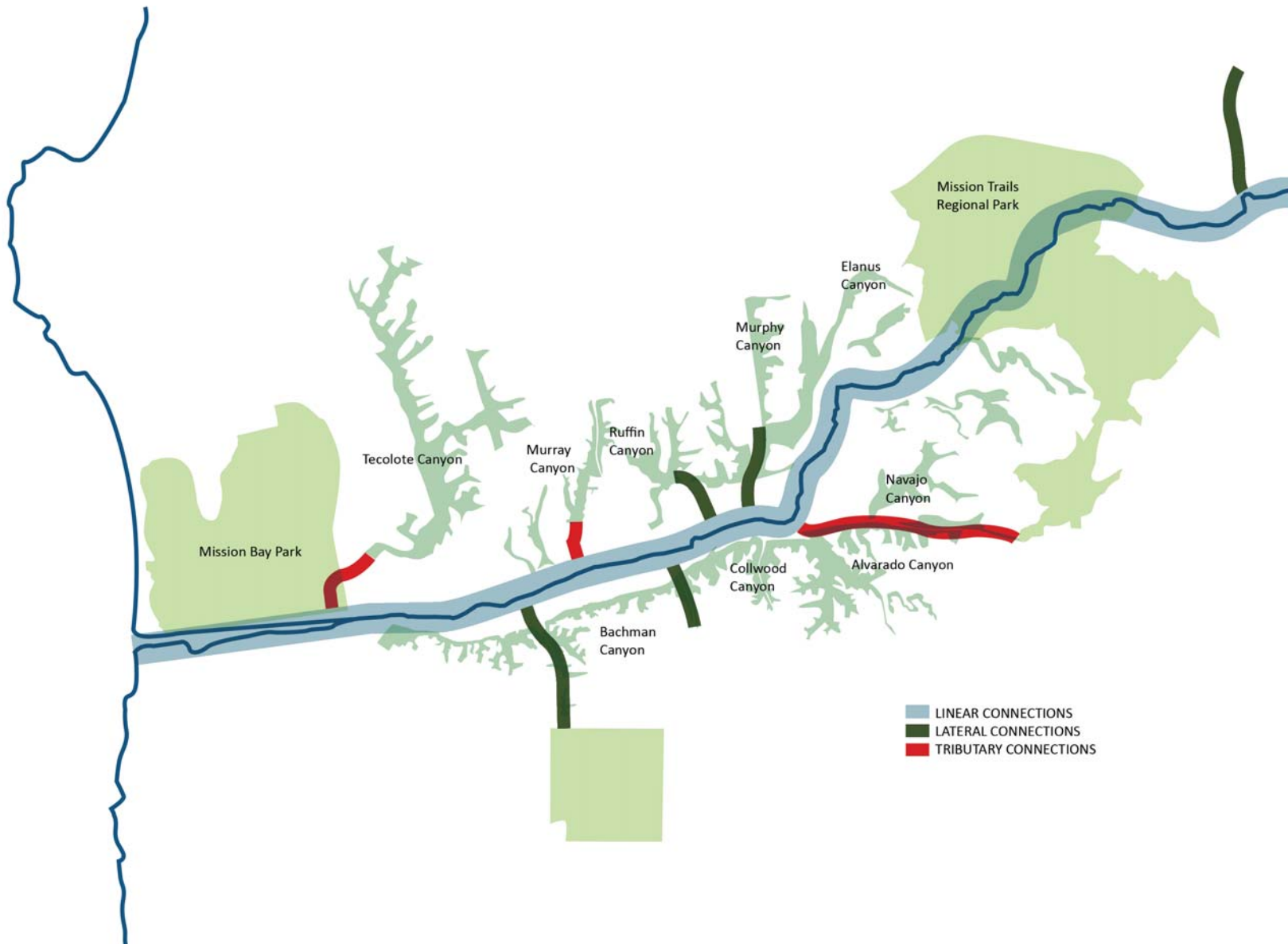
To be included in this ecostructure designation, lands must meet two or more of the following conditions: 1) be located within the San Diego River watershed; 2) be part of the river corridor/floodway (as identified in the reach sections of this document); and/or 3) be a functioning natural habitat, designated park, open space or be protected by an easement. Generally, areas that meet more than one of these conditions are undevelopable because they flood regularly, present steep side slopes and canyons, or are areas designated for recreation, or conservation. These areas have been identified as biologically significant and incorporated into the San Diego's Multiple Species Conservation Program (MSCP) Subarea Plan.



Existing open spaces are fragmented



Link parks, open spaces and trails along the river and canyons with the river valley



Unify Fragmented Lands

## 2.4 PRINCIPLE THREE:

### CREATE A CONNECTED CONTINUUM, WITH A SEQUENCE OF UNIQUE PLACES AND EXPERIENCES

The experience of the landscape is diverse and changes throughout the river valley. A visitor senses expanse at the estuary and coastline, the rampart of the coastal terrace experienced as one overlooks Mission Valley from the Presidio, the broad river valley stretch through the Navajo community, the constriction of the soaring walls in the gorge and the open vistas of the plateau above Mission Trails Regional Park.

Continuity is essential to engaging users with this kaleidoscope of experience, and it is equally important to express the unique physical and cultural qualities of each community throughout the valley. A common river pathway system connecting the unique habitats of the river as well as linking to existing and future parks/open space will create a synergy of water, wildlife and people. From the river pathway there should be pathways and trails that link the river park to adjacent neighborhoods and open space areas. These secondary pathways and trails should be visual and physical green connections that connect more people to the ecology, culture and history of the river. As indicated in the preceding principle, undeveloped land within the valley is limited. Land acquisition and open space easements are two ways to rejoin the valley and allow unbroken passage along the river's length.



Citywide connections will link neighborhoods with the river



The river pathway will link upland and riparian experiences



Emphasize a Continuum of Experience

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Pacific Beach



Mission Trails Regional Park

## 2.5 PRINCIPLE FOUR:

### REVEAL THE RIVER VALLEY HISTORY

The river valley has long been central to the settlement of the San Diego Region. The presence of water was the impetus for the earliest native people to move into the area. Although much of the evidence of this history has been lost, a number of artifacts and sites remain, and major sites can be found in Mission Trails Regional Park, Presidio Park, Old Town San Diego State Historic Park and Mission San Diego de Alcalá. Some sites have particularly rich and visible histories that can be further interpreted.

The San Diego River Park is an opportunity to link these locations, stimulate public interest in the river valley's history, and expand the public's knowledge about the prehistoric and historic people and land uses within the valley. Increased public interest and knowledge benefits these sites by instilling a sense of responsibility for their preservation and care. Increased visitor traffic, however, can also have its negative effects and careful evaluation of a site's ability to support visitor traffic is critical prior to opening a site. Some historic sites may be too sensitive to be exposed and should remain closed to the public, but interpretive panels placed along the River Pathway should be provided to express the story.



In 1916 agriculture was the primary activity in Mission Valley



Mission San Diego de Alcalá



Reveal the River Valley History



Derby Dike



Mission Dam



Presidio Park

## 2.6 PRINCIPLE FIVE:

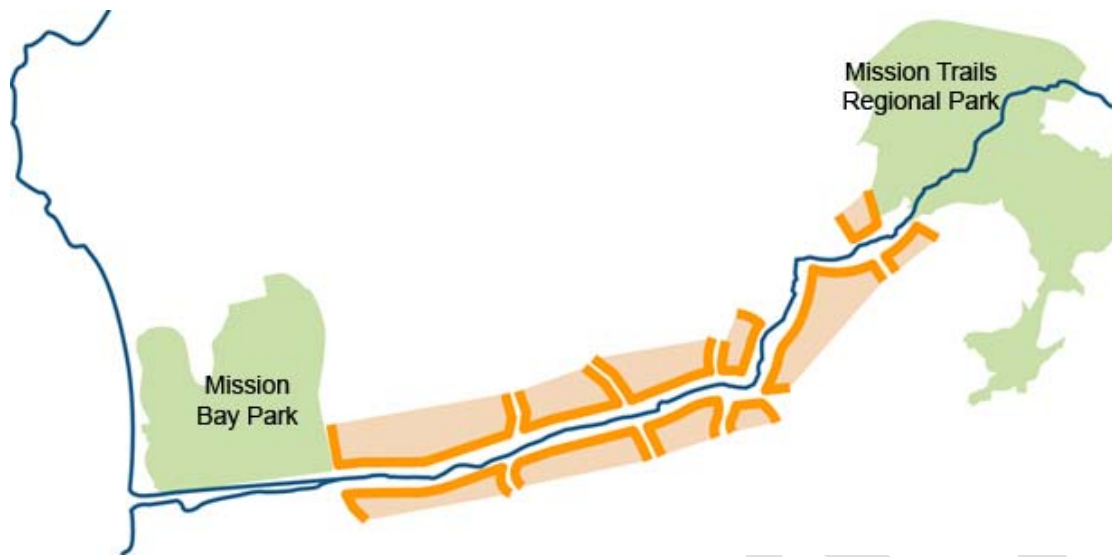
### REORIENT DEVELOPMENT TOWARD THE RIVER TO CREATE VALUE

Today, nearly all development within the river valley turns its back to the river. Parking lots, dumpsters, roads, storage yards and mining operations border the river between Riverwalk Golf Course and Mission Trails Regional Park.

The River Park should be treated as a 'front door': an amenity to celebrate. Planning efforts should seek ways to draw the river park character into current uses and capitalize on the exceptional natural beauty. New development should face the river, taking design cues from the forms and materials lining the river, scaling and orienting new buildings to complement, not compete with, the river park. The reorientation of development toward the river park, through placement of cafes and plazas that open up to and capitalize on the river, as well as buildings that provide views of the natural river habitat, will inherently enhance adjacent property values.

Focusing on the river should not be limited to riverfront development. Development further inland should seek opportunities to connect with the river. These links may be achieved through elements, such as sight lines, design elements, materials, or even physical connections.





Reorient Development toward the River

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Examples of orienting development towards a river

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## 3.0 RECOMMENDATIONS

The five guiding principles described in the preceding section define the vision of the San Diego River Park. The recommendations that follow describe general and specific strategies for achieving the intent of those principles. These recommendations address the health of the river, the river habitat, encouragement of human recreational use while understanding and appreciating the river's history and its environs. The recommendations also address the river as an amenity for economic development and how development should be reoriented to the river as a means of celebrating and creating awareness and providing identity for the San Diego River Park.

It is important to note that while each recommendation fits into the vision for the river, no single recommendation is meant to address every location or every situation along the length of the river corridor. The master plan's single overarching recommendation is one of flexibility; seeking and pursuing opportunities as they arise with property owners to implement the master plan's vision, while the general recommendations focus on the six reaches of the river: Estuary, Lower Valley, Confluence, Upper Valley, Gorge and Plateau (areas of the river defined by different topographic characteristics).

## 3.1 GENERAL RECOMMENDATIONS FOR THE ENTIRE RIVER

### 3.1.1 RESTORE AND MAINTAIN A HEALTHY RIVER SYSTEM

Human activity from mining and for flood control has pushed and squeezed the river. This has resulted in constrictions, channelization and ponds. The San Diego River Park should look for opportunities to separate river flow from ponds, remove river constrictions, and broaden the width of the river's meander belt (that portion of the flood plain in which the river alters its course as a result of a major flood event) to allow the necessary width for meandering and braiding. These improvements will result in a longer river, which will, in turn, expand riparian habitat and improve water quality through the increased duration of water contact with soil and vegetation.

#### RECOMMENDATIONS

- A. Augment flows to the river periodically.
- B. Remove / circumvent obstacles that impede flow.
- C. Remove invasive vegetation species.
- D. Encourage the growth of appropriate native riparian and upland vegetation.
- E. Rehabilitate the channel to encourage meander and braiding.
- F. Expand the river's recharge area.
- G. Adopt programs to reduce/remove non-point source loads.
- H. Incorporate hydrology and water quality considerations in all future planning and guidance documents and monitor water quality following implementation.



Restore the health of the river by improving flow, increasing length and meander



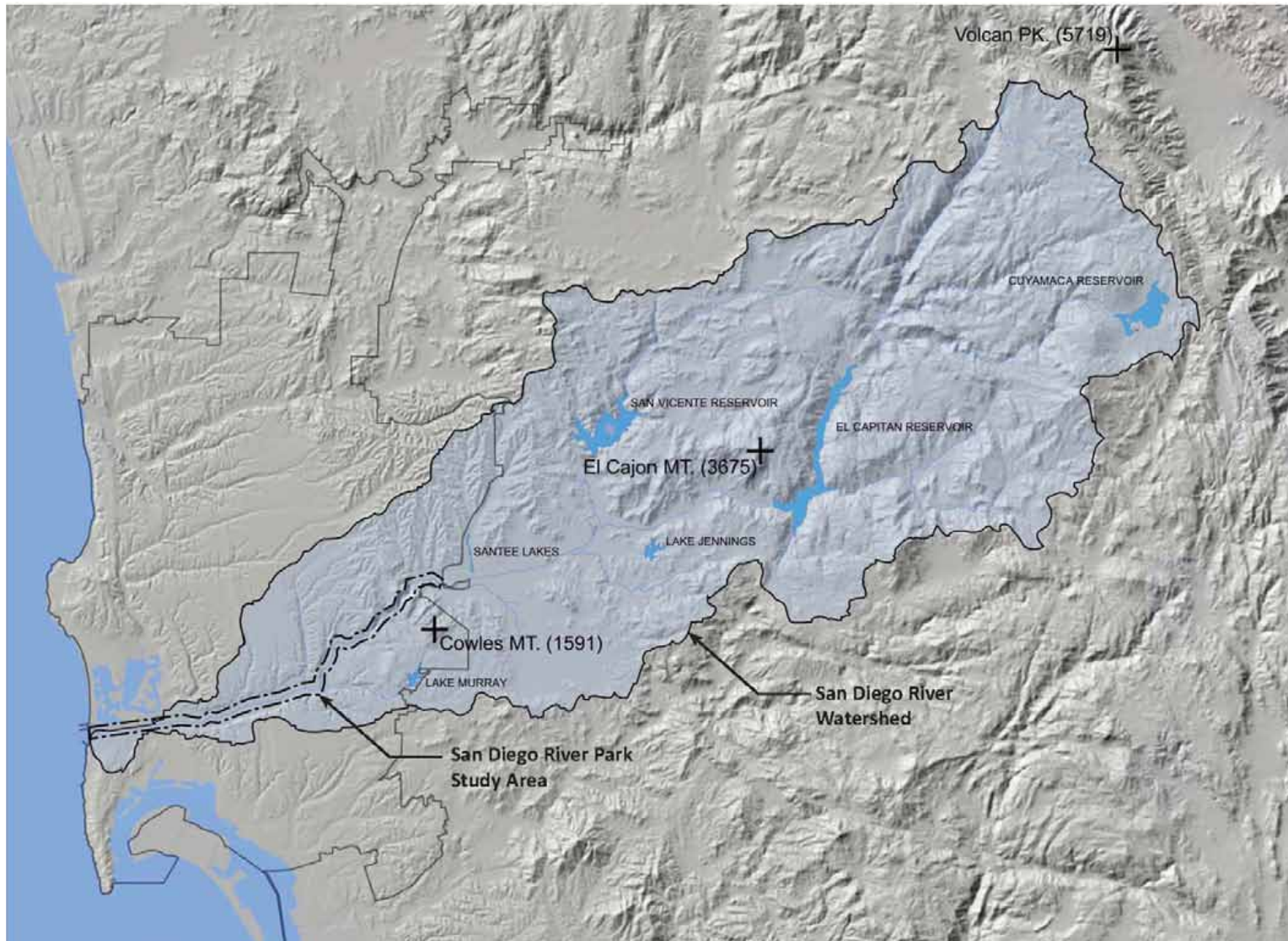


Figure 3. Regional Watershed Context

### **A. Augment Flows to the River Periodically**

Although the pre-disturbed condition of the river was one of ephemeral flows (dry during certain times of the year), the persistent condition is now perennial flows (at least some flow all year long). It is unlikely that flow in the river will be dramatically augmented by natural or non-accidental means. Rather, the extreme demand for a consistent water supply for human use and increasing attention to water efficiency make it more likely that flow in the river will continue to diminish during the dry season. The result of reverting to an ephemeral, or semi-ephemeral system, whether through conservation or conscious design, would be a more barren riparian corridor supporting less biodiversity than present conditions.

The existing perennial flow supports a relatively abundant riparian biological community, and for this reason, the flow should be maintained to some degree. The river's perennial flow is most likely the result of return flow from urban and suburban activities, such as irrigation. The flow is also augmented by some contribution from groundwater sources. The relative contribution from each of these sources is not well understood at this time and will require further investigation. Means to augment the flow should also be investigated; reclaimed wastewater might be a possible source for the augmentation, as would water purchased for release. Regardless of source, the water should closely mimic existing river conditions in measures such as temperature and salinity, and augmented flow should occur periodically, to mimic historic patterns of flow. These seasonal pulse flows also offer the opportunity for sediment transport and would create disturbance/recovery cycles for ecosystems. The potential to augment flows should be fully explored with the Padre Dam Municipal Water District and Regional Water Quality Control Board.

## B. Remove/Circumvent Obstacles that Impede Flow

Numerous impediments exist in the river channel and in most of the streams and creeks that are tributary to the channel. These disconnects include ponds, lakes, culverts, roads, and dams. These elements segment habitat, disrupt water flow and create barriers for species movement. The flow of the river is inadequate to sufficiently flush the ponds, leading them to collect into standing pools, particularly where historic gravel mining has removed material from the river channel. The relatively shallow pools and minimal flow lead to an increase in water temperature, promoting algae and macrophyte growth which are both serious issues for riparian systems. The still water also promotes a deposition of sediments resulting in downstream deprivation of sediment load.

Planning efforts that encourage the removal and/or circumvention of impediments to improve flow characteristics and reconnect habitat fragments should be continued. However, the water volume, pond depth and the flow conditions of the river in various reaches will affect the specific conditions of each pond. As the river park and adjacent land is designed and developed, each pond should be studied specifically to create the best and most appropriate hybrid that is most beneficial to improving the water quality of the river, expanding native plant communities and adding value to adjacent development. While the ponds have a negative effect on the hydrology of the river, they offer passive recreation opportunities for fishing, non-motorized boating, birding and other activities as approved by the Federal and State Resource Agencies. It is beneficial to the river to separate the channel from the ponds, but with aeration and other treatments so the ponds can remain as assets to the river park.



Historic gravel mining has resulted in numerous ponds



Overhanging native vegetation shades and cools the river

### **C. Remove Invasive Vegetation Species**

The presence of dense, invasive vegetation results in an impediment to flow. Invasive species also result in dramatically increased evapotranspiration of water that would otherwise remain in the channel or be used by more productive and beneficial species. In an effort to reduce flow impediments and better utilize the limited water quantity in the channel, efforts should be made to eradicate invasive species of plants throughout the watershed.

### **D. Encourage the Growth of Appropriate Native Riparian and Upland Vegetation**

Appropriate and continuous native riparian vegetation has direct benefits to hydrology and water quality. Continuous native vegetation communities from upland canyons and slopes to the riparian river valley create conditions needed to encourage wildlife to move between the canyons and the river. Best management practices should be implemented to encourage the propagation of existing native species. Areas where invasive species have been removed should be re-vegetated with appropriate native species.

Less-dense, native vegetation will cause significantly fewer circulation problems and require less water than invasive species. Additionally, a variety of a native species may be used to more effectively “cleanse” urban runoff through nutrient uptake. By spreading the area of contact of the river and riverbed, groundwater infiltration can be increased. When combined with vegetation, pollutant filtration and removal can be increased. In certain situations, contaminated groundwater can be treated through phyto-remediation, or biological filtration through uptake. Such an approach would require careful study and should not displace native habitat in the corridor.



Arundo Donax (Giant Reed) has invaded many sections of the river



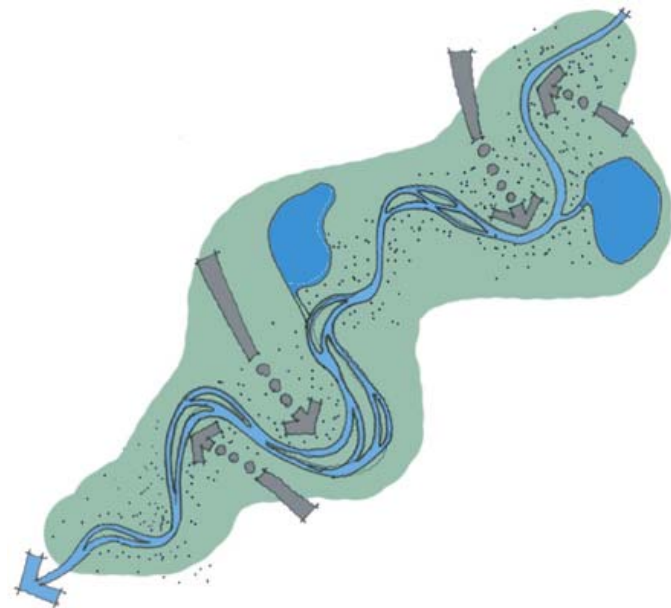
### E. Rehabilitate the Channel to Encourage Meander / Braiding

Over the past decades, the river has become increasingly channelized by projects that seek to transport water from higher to lower elevations in a manner that has often resulted in minimizing space for the river to maximize land available for development. The net result of these projects is a relatively straight channel with artificially-raised banks. This condition has removed the river's natural meander and braiding, depriving it of its natural flood cycle. The term "meander" refers to a river's naturally winding path; and "braiding" refers to a river that has carved multiple simultaneous channels, diverging from and rejoining itself. Both of these river patterns contribute to greater riparian habitat, greater groundwater recharge and reduced velocity when contrasted to a straightened, channelized path.

Although it is impractical to consider returning the natural floodplain to the river in any substantial form, it is possible to increase river length and decrease flow velocities. Where possible, the channel should be rehabilitated to remove concrete or artificial structures, shaped to include meanders and designed to provide a wider river channel for braiding.

### F. Expand the River's Recharge Area

Past development in the floodplain and projects that have channelized the river exacerbate flooding problems and increase the potential economic damage of major flood events. Development should look for ways to provide future projects that will not degrade the river's natural carrying capacity, water quality or riparian habitat. Such land use decisions should be made with sensitivity to the river. Expanding wetlands and creating new ones through restoration or construction will contribute to improving water quality by



Re-contour the channel to increase the river's length and meander, expand ground water recharge area, separate ponds from the River, and filter urban run-off before it reaches the river



Hard surfaced channels such as Tecolote Creek increase velocity, prevent groundwater recharge and offer little wildlife habitat

filtering pollutants and will serve as a refuge for native flora and fauna, allowing them to re-establish after flood events.

### **G. Adopt Programs to Reduce/Remove Non-Point Source Loads**

Preventing pollution at its source is the best and most cost effective approach to improve the water quality of the San Diego River. During wet weather events, the first flush of contaminants from most urban and suburban surfaces is transported directly into the river via storm drain systems. Ongoing low flow in these systems continues to trickle contaminants into the river. Although the city has a relatively advanced program to identify pollutants and to educate citizens in this area, a significant quantity of pollutants continues to enter the river via storm drains.

Storm water is governed by the National Pollutant Discharge Elimination System (NPDES) Municipal Storm Water Permit (Municipal Permit). The Municipal Permit directs municipalities to implement an urban runoff management program on a jurisdictional and watershed level. The intent is to prohibit pollutant discharges into the storm water conveyance system, implement best management practices, ensure that storm water discharges do not cause water quality objectives to be exceeded, identify and eliminate sources of illicit discharges, and enforce local municipal water quality related ordinances.

The city recognizes the linkages between land use and in urban and suburban developments to impacts on the river, and has developed comprehensive programs to minimize these detrimental effects by implementing high standards on new development and redevelopment as it relates to non-point source runoff. Some examples include requiring compliance with numeric standards, mandatory structural practices (swales, infiltration basins), and mandatory non-structural practices (restricted irrigation, aggressive street cleaning). Localized approaches to



Example of a swale



Example of an infiltration basin

non-point source pollutant reduction/elimination are the only alternative to massive, in-channel treatment approaches. Highway and golf course runoff is of particular concern. Responsible agencies need to treat storm water runoff from highways prior to its reaching the river. Golf courses are traditionally maintained through intensive turf management. Course managers should be encouraged to create water quality buffers adjacent to the river and to implement sustainable management techniques that reduce the use of chemical based pest and weed control and fertilization.

#### **H. Incorporate Hydrology and Water Quality Considerations in Future Planning and Guidance Documents and Monitor Water Quality following Implementation**

A healthier river leads to cleaner water and groundwater recharge. Other benefits from a cleaner ecosystem will offer further benefits to habitat and downstream water quality. Like many urban rivers, the San Diego River has been neglected as a resource, and until recent decades, planning and development have largely ignored the river and the impact of development on it as a natural system.

Future planning and design efforts within the San Diego River watershed should address potential impacts on the river and consider means of benefiting the river and its corridor, by seeking opportunities to improve connections for people and wildlife, and to treat storm water before it reaches the river. Improvement measures should be monitored to evaluate their effectiveness, to identify lessons that can be applied elsewhere, and to celebrate successful outcomes.



Ponds at the First San Diego River Improvement Plan slow stream flow and offer limited riparian edge environment



The lack of natural buffer on the banks of the river through Riverwalk Golf Club increases the potential for run-off of fertilizers and pesticides into the river

### 3.1.2 UNIFY FRAGMENTED LANDS AND HABITATS

Reduction or loss of habitat and associated fragmentation, are two of the biggest factors that determine the viability of habitat to continue to support wildlife, particularly in regard to the riparian, coastal sage scrub, and chaparral plant communities that comprise the majority of natural habitat in the study area. In urban areas, the existing habitat is limited to the immediate riparian corridor of the river, and the fragmented and isolated upland habitat. Opportunities to increase habitat are limited; so focusing San Diego River Park efforts on creating or improving habitat in places where it also improves connectivity between existing habitat areas is the key to success.

#### RECOMMENDATIONS

- A. Establish appropriate corridors for the river, wildlife and people.
- B. Acquire open lands and/or pursue conservation easements.
- C. Eliminate invasive plant species and reintroduce native species.
- D. Naturalize floodway areas.
- E. Use biological systems to treat all storm water before it enters the river.
- F. Separate pedestrian/wildlife and vehicular river crossings.
- G. Establish habitat corridors as secondary gateways at side canyons and tributaries.
- H. Create 'Green Gateways'.



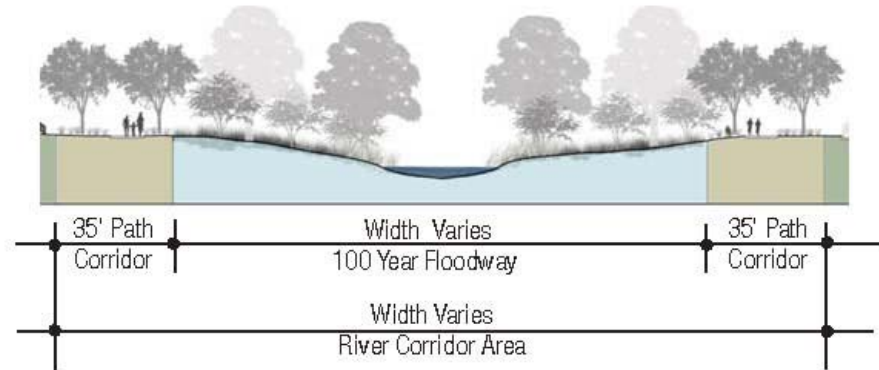
Connectivity between habitat areas increase the viability of wildlife



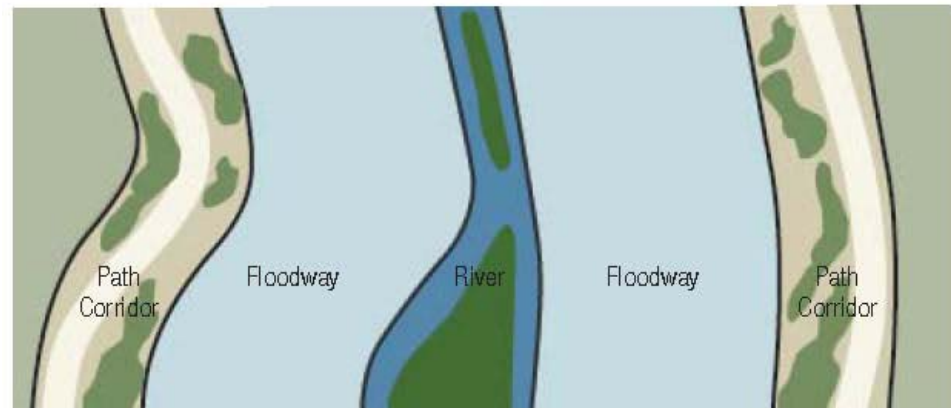
Naturalized floodway areas provide shade and protection for wildlife and cool the river

## A. Establish Appropriate Corridors for the River, Wildlife and People

Water bodies, wildlife and people need 'breathing room' to maintain health and integrity. Open space corridors function as water quality buffers and as valuable habitat areas for both wildlife and people. The corridors can be thought of as layers adjacent to the river. These layers may be defined by topography, vegetation and vary in size depending on the river location.



Within the San Diego River Park, there should be two corridors: the River Corridor Area and the River Influence Area. The River Corridor Area will include the river itself and the land immediately adjacent to it. This corridor will be measured by the 100-year Floodway, as mapped by FEMA, plus 35 feet on either side of the floodway. The 100-year Floodway will vary in width depending on the floodway location and will provide a continuous corridor that accommodates the flooding hydrology of the river and a diversity of native vegetation for habitat. The 35 foot wide area will provide for native habitat and a multi-use pathway that will accommodate people. It will be a natural environment providing for the river ecology, enhancement of wildlife habitat and movement, and allowing for passive recreation, such as walking, bicycling, sitting and observation. The River Influence Area will adjoin the River Corridor Area and extend 200' on either side of the River Corridor Area. Within this area, development will occur and should be designed to acknowledge and celebrate the presence of the river and treat it as an amenity. Development should relate to the natural landscape and spatial character of the river.



Plan and Section of River Corridor Area

In addition to the San Diego River Park corridors listed above, there are two other corridors that provide for the protection, preservation and restoration of the river and wildlife. These two corridors are the city's Multi-Habitat Preservation Area (MHPA) and the Wetland Buffer for wetlands. The MHPA area has been established and mapped by the city. The Wetland Buffer is not mapped, but is determined at the time of proposed development. These three layers: San Diego River Park Corridors, MHPA and the Wetland Buffer, all work together to provide for an appropriate corridor for the integration of the river, wildlife and people.

### **B. Acquire Open Lands and/or Pursue Conservation Easements**

To expand, unify, and connect the river corridor, acquire open space parcels, and obtain public access or conservation easements on private property whenever possible as opportunities arise.

### **C. Eliminate Invasive Plant Species and Reintroduce Native Species**

Floodplains recaptured in natural vegetation offer great promise in improving ecological function. Invasive, non-native plant species disrupt the balance and function of natural ecosystems, often choking out native species. The City of San Diego should coordinate with other public agencies, community groups and land owners to develop and implement vegetation management programs to remove exotic species and plant native riparian vegetation.

### **D. Naturalize Floodway Areas**

Naturalization should address both current and potential future hydrologic regimes. Naturalization should consider the re-grading of areas to create upland habitat adjacent to or in the floodplain and a continuous transition of native plant communities between the riparian corridor and upland habitat areas. The naturalized floodway areas would restore river channel dynamics to a more natural hydrologic regime which would result in improved riparian habitat.

### **E. Use Biological Systems to Treat All Storm Water before it Enters the River**

Biological treatment systems (constructed wetlands) provide water quality buffering that mimics natural processes, and provides wildlife habitat while maintaining the character of the river corridor. These systems provide a vegetative substrate for micro-organisms that break down pollutants and waste. This method of water filtering aligns with the United States Bureau of Reclamation Storm Water Treatment Program goals. The San Diego River Park should also make storm water treatment locations visible and integrate educational features that interpret the value and function of such systems and the day-to-day function and cycles of a river.

## **F. Separate Pedestrian/Wildlife and Vehicular River Crossings**

San Diego River Park improvements should retrofit existing river crossings to allow grade-separated crossings for wildlife, San Diego River Park users, and vehicles. These bridges should address crossings at all scales, from trails to roads to highways. Pedestrian safety and continuity of pedestrian movement is improved by eliminating conflicts and interactions with vehicles. The construction and use of grade-separated pedestrian passages is encouraged, such as the one under Friars Road at Fenton Marketplace. Similar passages should be created to improve pedestrian movement between the river valley and upland neighborhoods and canyons. Where feasible, bridges should include adequate width to encourage wildlife movement and be vegetated. Such eco-bridges diminish the separation caused by roads and other development.

## **G. Establish Habitat Corridors as Secondary Gateways at Side Canyons and Tributaries**

Habitat corridors can serve as smaller gateways into side canyons and tributaries. These gateways will also provide recreational and habitat connections to less-frequented areas of the San Diego River Park.

## **H. Create ‘Green Gateways’**

Green Gateways are key landscape elements located at the entries to and along the corridors through the San Diego River’s domain. The gateways consist of large-scale plantings within public rights-of-way. Green Gateways create visual and functional connectivity to the San Diego River corridor and adjacent landscapes. Visually, these gateways mark the domain of the river corridor, providing a variety of view and access



Pedestrian Tunnel under Friars Road provides a link between the valley floor, the valley wall, and Ruffin Canyon



Highway infrastructure and rights-of-ways should be adapted to support native plants and habitat

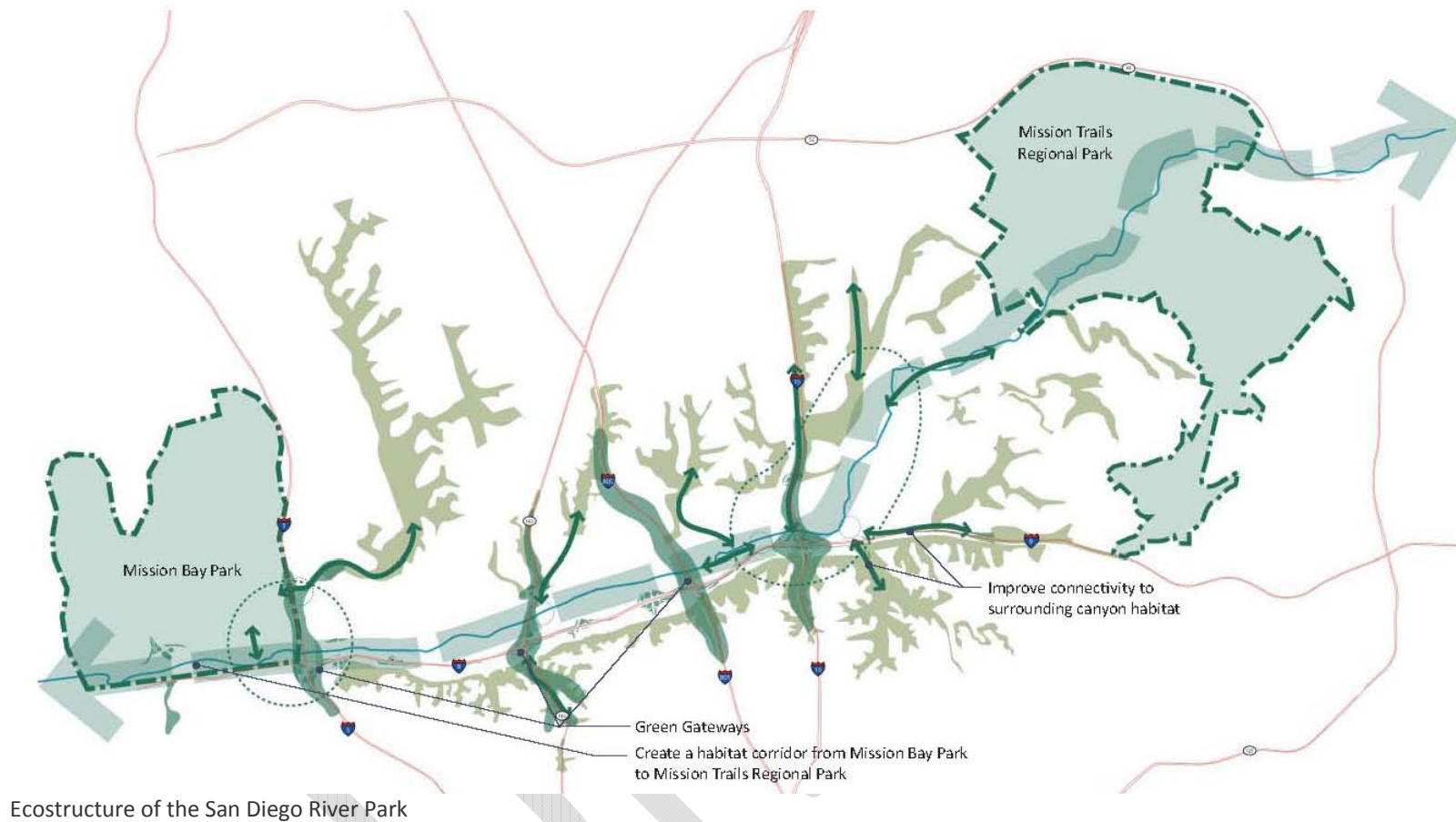
experiences. Depending upon each highway’s elevation in relation to the ground plane of the valley bottom, the goal is to convey the sense of going “over” or “through” the riparian canopy of the river corridor. Visually, these gateways will counterbalance the overwhelming presence of the existing highway infrastructure.

The San Diego River Park should implement gateways at a range of scales, sized to fit the visual and functional needs of the connections being made via the use of native vegetation. Large-scale gateways are appropriate at locations where highways, such as Interstate 5, Interstate 15 and State Highway #163, cross the San Diego River Valley. Interstate 805 offers a visual gateway to the valley below. These plantings should include native trees and understory vegetation selected from the Recommended Plant Species in Appendices. Fremont Poplar (*Populus fremontii*) is recommended for this application; this species is a large, easily-recognizable tree that is a signature element of the region’s riparian corridors and manifests seasonal interest. An iconic tree, such as this one, will emphasize river proximity. Open space parcels, whether acquired outright or through public access easements that are contiguous with the gateways can contribute to and enhance their effect. These open space corridors will extend the native vegetation of the gateways.

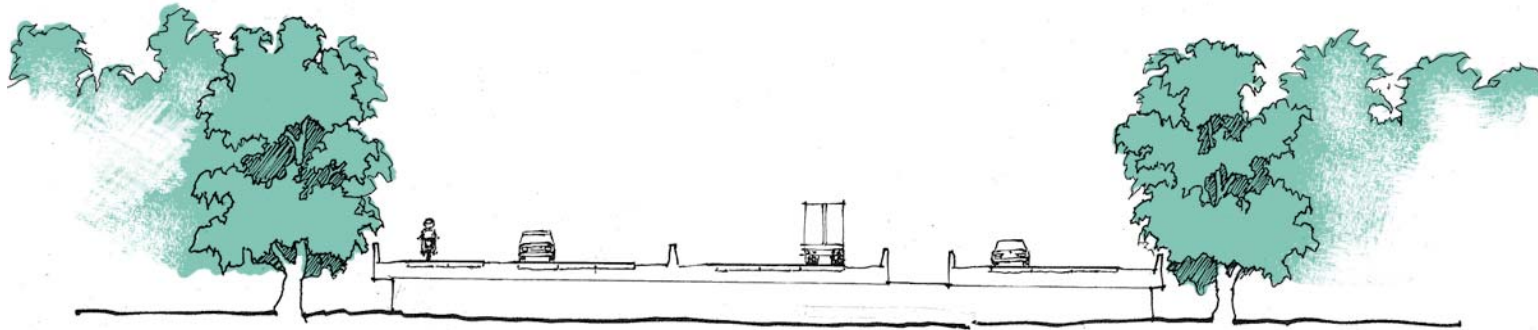


Examples of eco-bridges

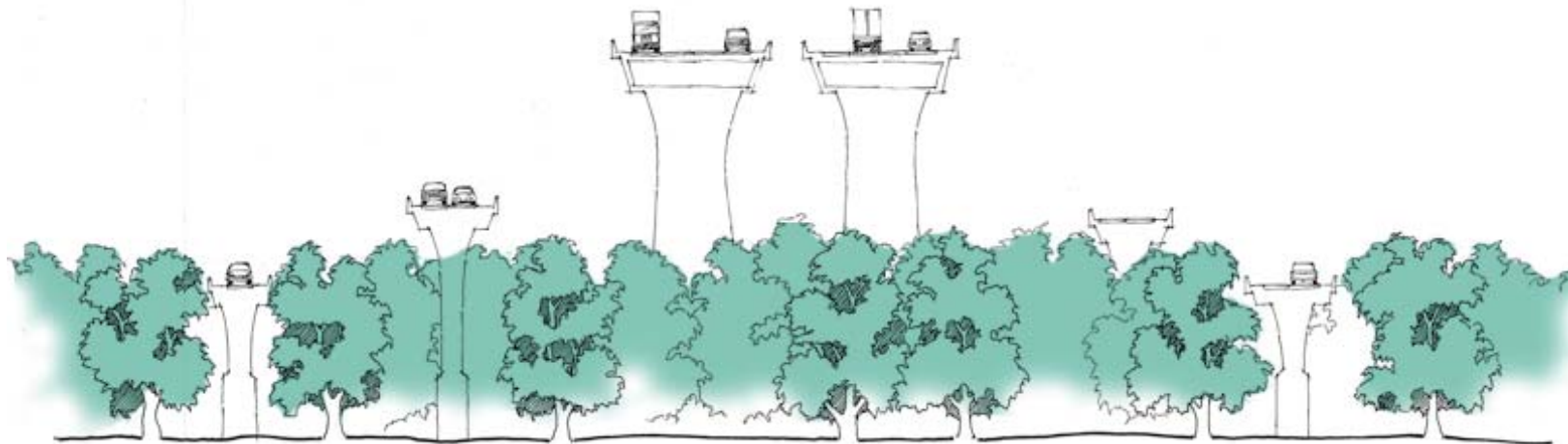




Ecostructure of the San Diego River Park



Section of the Cabrillo Freeway (State Route 163) illustrating the “Through the green gateway” experience as State Route 163 crosses above the San Diego River. There is a sense of enclosure and a cooler microclimate on the edges of the highway created by the shading of the riparian forest canopy.



Section of Interstate 805 illustrating over “the green gateway” experience as the highway crosses above the San Diego River. From above, the gateway outlines the extent of the river’s domain for the motorist.

### **3.1.3 CREATE A CONNECTED CONTINUUM, WITH A SEQUENCE OF UNIQUE PLACES AND EXPERIENCES**

Establish a continuous river pathway system from the ocean to Mission Trails Regional Park and from canyon to canyon with frequent access to transit and neighborhoods. Coordinate with community plans, the San Diego Bicycle Master Plan and Pedestrian Master Plan, adjacent jurisdictions and other current planning efforts to develop specific locations for neighborhood connections and route alignments.

Establish a linked string of parks and open spaces through land acquisition, public access easements and partnerships with land owners in key locations. These parks and open spaces will serve a variety of needs providing valuable protected habitat in some places and access to the river and connection to adjacent development in others. Collaborate with and support community planning efforts to identify areas for redevelopment and new development to have a river focus and to identify potential land to acquire for parks and open space. As redevelopment occurs, engage land owners and developers in the San Diego River Park master planning process to support the creation of places that are mutually beneficial.

#### **RECOMMENDATIONS**

- A. Create a continuous multi-use San Diego River Pathway from the Pacific Ocean to the City of Santee.**
- B. Acquire open space lands to expand connectivity.**
- C. Create overlooks at unique places.**
- D. Upgrade and link existing parks into San Diego River Park system.**
- E. Explore opportunities for additional community or neighborhood-scale parks.**
- F. Link the river pathway to adjacent canyons and neighborhoods.**
- G. Integrate art into the identity and experience of the San Diego River Park.**
- H. Install San Diego River Park way-finding signs.**
- I. Explore opportunities for water recreation.**

## **A. Create a continuous multi-use San Diego River Park Pathway from the Pacific Ocean to the City of Santee**

Organize an east-west multi-use river pathway from the Pacific Ocean at Ocean Beach Park to the City of Santee. This pathway is referred to in this document as the river pathway and serves as a recreational opportunity, or in some instances, can serve as a non-motorized transportation route. The river pathway should be continuous, open to pedestrians and bicycle users, and uninterrupted by conflicts with vehicles, wherever possible, through grade separations. The river pathway should be designed per the Design Guidelines of the Master Plan, Section 4.0.

The river pathway should be located on both sides of the river. In some locations the river pathway will only be on one side of the river due to the topography, MHPA boundaries or required wetland buffers. In these cases, smaller pedestrian-only trails maybe provided on the opposite side of the river from where the river pathway occurs. In addition to the river pathway, there should be north-south multi-use path connections to neighboring communities, businesses, activity/shopping centers and regional parks such as Balboa Park, Presidio Park, Mission Bay Park and Mission Trails Regional Park. Smaller, unpaved trails can lead off of the river pathway to give access to special views of the river or interpretive overlooks.



The multi-use River Pathway provides the opportunity to exercise, socialize, and connect communities

## **B. Acquire open space lands to expand connectivity**

Land beyond the corridor itself is important to the overall connectivity of the open space system. As opportunities to acquire such land arise in locations that can expand the open space network, acquisition should be pursued where they support the master plan principles.

## **C. Create Overlooks at Unique Places**

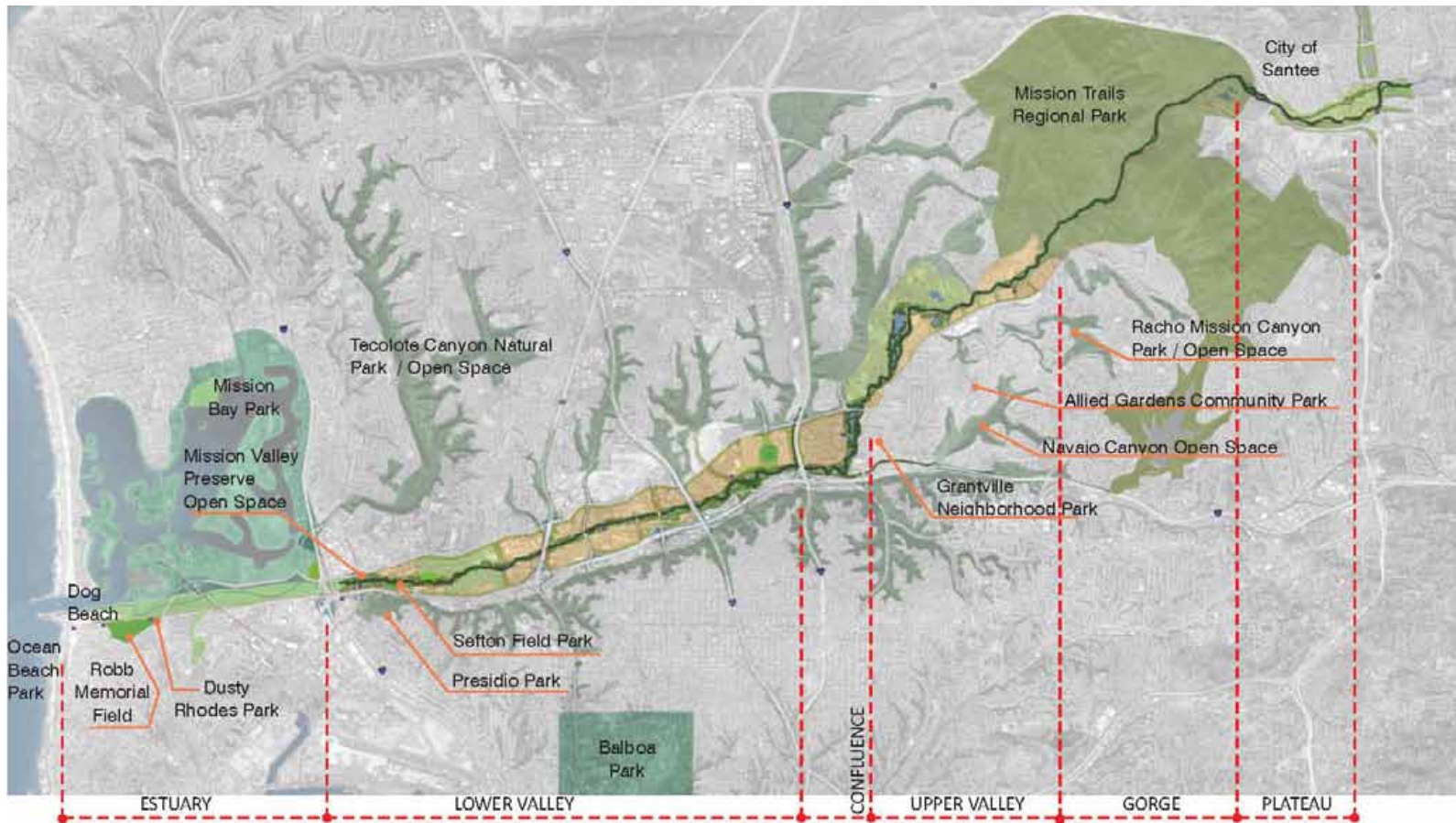
Overlooks will offer viewpoints along the river's length or at nodes where a north-south connection to a community meets the San Diego River Park. Generally, overlooks will be along the river pathway, and will include picnic tables, interpretive signs and/or seating according to the size of the space. Refer to the Design Guidelines of the master plan, Section 4.0, for recommended materials.

## **D. Upgrade and Link Existing Parks into the San Diego River Park System**

The San Diego River Park is ultimately a linked series of parks and open space. Awareness of the river and the river park should begin in existing parks that can be linked to the river park. Physical and conceptual elements of the San Diego River Park should be used in upgrades and renovations of existing parks. Establishing a set of materials that are evocative of and sensitive to the San Diego River will knit the system together, and is an overall goal of the San Diego River Park Master Plan. As parks are redeveloped, sensitivity to the river should guide design and material selection. Native planting areas should be expanded and impervious surface areas reduced.



At the western edge of the River Park, Dog Beach is a unique place that is much loved by the local community



**Existing Parks and Open Space**

- Ocean Beach Park
- Mission Bay Park
- Dog Beach (part of Mission Bay Park)
- Dusty Rhodes Park (part of Mission Bay Park)
- Robb Field (part of Mission Bay Park)
- Mission Valley Preserve Open Space
- Presidio Park
- Sefton Field Park
- Tecolote Canyon Natural Park/Open Space
- Grantville Neighborhood Park
- Allied Gardens Community Park
- Navajo Canyon Park/Open Space
- Rancho Mission Canyon Park/Open Space
- Mission Trails Regional Park

### **E. Explore Opportunities for Additional Community or Neighborhood-Scale Parks**

The Mission Valley, Tierrasanta, Navajo, and East Elliot Community Plan Areas will have population-based park deficits in the year 2030 per the City's General Plan Standards. Long-range planning for these communities and the San Diego River Park should look for locations along the river, such as at the Qualcomm Stadium site and the Grantville Redevelopment Subarea, to reduce the park deficits. The new park sites should provide connections to the San Diego River Park.

### **F. Link the River Pathway to adjacent Canyons and Neighborhoods**

The river pathway is a benefit to the entire City of San Diego. Connections to neighborhoods bordering the river corridor should be established off-street where possible and on-street where necessary. Specific connecting links to existing bicycle and pedestrian trails in Tecolote Canyon Natural Park/Open Space, Navajo Canyon Park/Open Space and Rancho Mission Canyon Park/Open Space should be developed as the river pathway is established.

### **G. Integrate Art into the Identity and Experience of the San Diego River Park**

At unique places or significant historical or cultural opportunities, art should be incorporated into the San Diego River Park. Art elements should be a component of river pathway access points, interpretive areas and signage, fountains where appropriate, fencing, site furnishings and in the paving texture and color. Art should be located in areas of high visibility such as intersections, street crossings and entrances/gateways.

Incorporation of publicly accessible art on public and private projects should be supported and encouraged. An artist in residence program could create the opportunity for an individual artist to focus on the river for an extended period of time, creating art that interprets the river and offering the opportunity to teach, interact with schools, and to actively engage people with art and the river. The City of San Diego Commission for Arts and Culture may serve as a source of information for means and methods of incorporating art into specific projects and for the selection of specific artists.



"Snake Path", Artist: Alexis Smith



"Urban Trees" Photo Courtesy Dale Frost, Port of San Diego



## H. Install San Diego River Park Way-Finding Signs

In many locations the invisibility of the river is striking. The installation of San Diego River identification signs at road crossings has increased awareness of the river in the community. Other opportunities exist to expand awareness of the river and the San Diego River Park. At a minimum, the river should be identified at every vehicular and pedestrian crossing on both edges. The signs should highlight the presence of the river and include the San Diego River Park logo. The signage system should also identify canyons and tributary creeks where they intersect and where they flow into the San Diego River. In addition, signs in the canyons and nearby open spaces that are connected with the river corridor should indicate the direction of the river.



San Diego River sign

## I. Explore Opportunities for Water Recreation

Water recreation in the river should be studied as in-fill development and redevelopment occurs along the river: swimming, wading or bathing in the San Diego River is prohibited per Municipal Code Section 43.0104. All proposed water recreation, including but not limited to non-motorized boats and fishing, will require review and approval by the federal, state and local resource agencies during discretionary review of a project proposal. The entire river is mapped within the MHPA boundaries and, therefore, all activities are subject to Section 1.4, the Land Use Considerations, of the MSCP Subarea Plan

The following areas along the river have water restrictions in place; they include the Southern Wildlife Preserve, the Mission Valley Preserve and the First San Diego River Improvement Project (FSDRIP). The Southern Wildlife Preserve, located at the western end of the river, only allows non-motorized boats in the river west of Ingraham Street Bridge from April through September and permits are required to use the area. The Mission Valley Preserve, just east of the Southern Wildlife Preserve, is also a preserve for wildlife and water recreation is restricted. Within the FSDRIP area, water recreation is defined in the FSDRIP Natural Resource Management Plan (NRMP). This NRMP states that the water and buffer areas are a wildlife habitat and that no swimming and boating is allowed. Passive recreation, such as bicycling, picnicking, fishing and wildlife observation is allowed. Fishing is an allowable use in the riprap areas and from bridge crossings. Other activities that deviate from the sidewalks are not permitted.

### 3.1.4 REVEAL THE RIVER VALLEY HISTORY

The San Diego River Park should function as an open-air living museum to tell the history of settlement, and ecology of the San Diego River Region. The stories of the Mission and early California settlement and native communities, and the modern agricultural periods should be told through maps, art and signage at appropriate locations throughout the San Diego River Park. The historic condition of the river ecology and native wildlife habitat, its current condition and the rehabilitation of the area can reveal the story of the past and future river corridor.

#### RECOMMENDATIONS

- A. **Develop an interpretive program based on the historical, biological and cultural resources of the river.**
- B. **Create a San Diego River Park Interpretive Center.**
- C. **Use maps, art and signage to integrate the history of the river valley in appropriate locations.**



Example of interpretive garden at Alvarado Gardens, by artist Robert Miller

#### **A. Develop an Interpretive Program Based on the Historical, Biological and Cultural Resources of the River**

As the San Diego River Park Master Plan is implemented, an interpretive program should be created which tells the story of the evolution of the San Diego River including the history of the river's hydrology, the wildlife habitat and the human settlement of the San Diego River region. The interpretive program should identify a location for a San Diego River Park Interpretive Center and key locations for overlooks that provide information on significant historic sites. In addition, the interpretive program should provide other locations along the river that will interpret the natural ecology and hydrology of the river, its history and how it has changed over time. Describing the process and purpose of the physical improvements to the river channel and recharge area and recording the evolution of these changes over time will tell the story of the rehabilitation of the San Diego River.

### Significant Historic Sites

- Midway Pacific area – the Derby Dike
- Old Town area – the San Diego Presidio and the original San Diego de Alcalá Mission site
- Mission Valley area – Prehistoric Cosoy Village, the 1881 California Southern railroad, the Mission San Diego de Alcalá, and the Nipaquay Village
- Navajo area – Kumeyaay Village, Old Mission Dam and Flume

### B. Create a San Diego River Park Interpretive Center

Due to the significance of the river’s history in the San Diego region an Interpretive Center should be provided along the river in a central location. The center could be a public or private facility and designed for residents and visitors. Within the center there could be literature; videos, lecture rooms and a museum to show case the river’s history. Printed historic brochures and walking tours should be provided.

### C. Use Art, Maps and Signage to Integrate the History of the River Valley in Appropriate Locations

Art, maps and interpretive signs should be located at sites that will describe the cultural and historical story of the river. Where land is available, an overlook should be located to feature several interpretive signs that could provide more detail about the significance of the area. Materials selected for the maps and signs should meet the Design Guidelines of Section 4.0 of the master plan.



Example of an interpretive sign

### 3.1.5 REORIENT DEVELOPMENT TOWARD THE RIVER

Rivers, in general, provide significant value and advantages for urban environments. They connect communities to each other, provide recreation and open space, offer views in a crowded environment, provide habitat for valued species and provide dramatic settings for urban places. Along the San Diego River, the value has been neglected by placing the back side of buildings toward the river, locating delivery ramps adjacent to the river and, in some cases, locating parking lots that drain to the river. Through this type of urban design, the river is polluted, filled in by invasive species and becomes an area that is not “perceived to be” safe. Opportunities to change this type of urban design can be provided through implementing the following recommendations during the redevelopment along the river.



Riverfront redevelopment Malden River, Medford, MA

#### RECOMMENDATIONS

- A. **Treat the river as an amenity.**
- B. **Encourage mixed-use development.**
- C. **Encourage development to face the river.**
- D. **Include access to the river through new development.**
- E. **Reclaim frontage roads as pedestrian and bicycle-only green buffers.**
- F. **Uncover the river’s tributaries.**
- G. **Create ‘Green Streets’.**
- H. **Enhance the development edge facing the river with active uses.**

### **A. Treat the River as an Amenity**

Development adjacent to the river should be designed to treat the river as a desirable feature by taking advantage of the open space it creates, connecting to the river pathway system for an alternative means of transportation, and capturing the dramatic views of the water environments.

### **B. Encourage Mixed-Use Development**

Mixed-use developments are intended to provide a mix of housing, jobs, shopping, commercial services and public or semi-public open spaces. This type of development promotes higher residential densities that are within close proximity to public transportation, a variation in type of dwellings to accommodate students, workforce and senior housing, and outdoor gathering spaces to create a village atmosphere. Future projects adjacent to the river should look for opportunities to provide mixed-use development that will orient towards the river. Commercial services, cafes and other active uses could be located on the ground floor to take advantage of the connection to the river pathway, which also connects to the existing trolley transportation system, while residential uses could be found in the upper floors that have privacy and views to the river.

### **C. Encourage Development to Face the River**

All new buildings and outdoor areas should face the river through the placement of windows and doors, gateways, active uses, pathway connections and passive seating areas. If development is designed with a front entry or main activity use to the street, then an entrance or activity of equal quality should be located facing the river.

### **D. Include Access to the River through New Development**

A majority of the river frontage is not adjacent to a public street and, therefore, is not accessible. Through in-fill development and redevelopment of a site, access to the river should be provided either through the building or by a pedestrian path from the nearest public street through the site to the river. These paths should have public access easements and signs located along the public streets to mark the public path entrance.

### **E. Reclaim Frontage Roads as Pedestrian and Bicycle-only Green Buffers**

Frontage roads that are parallel to the river limit visual and physical access to the river. As these frontage roads are improved, additional right of way should be developed for safe pedestrian and bicycle movement, with additional landscape to buffer pathways from adjacent roads and to provide access to the river pathway where appropriate.

## F. Uncover the River's Tributaries

Many of the road crossings and tributaries of the San Diego River are contained in culverts. Removing pipes, culverts and covered channels to expose the river to daylight combined with widening the channel and gently sloping banks will reveal the natural structure and pattern of the river, and support the naturalization of the floodplain and river corridor. Where possible, culverts should be replaced with bridges to reduce flow constraints, expand riparian habitat and encourage wildlife movement.

## G. Create 'Green Streets'

Green streets are streets that integrate vehicles with a quality pedestrian environment and landscape areas that convey and collect storm water within the rights-of-way to protect the river from pollutants. Green streets offer the opportunity to include open swale storm water conveyance and have a tree canopy composed, in part, of native species. These green streets should extend north and south beyond Interstate 8 and Friars Road to provide connectivity to adjacent communities and upland habitat.

## H. Enhance the Development Edge Facing the River with Active Uses

When possible, all new project proposals should enhance the development edge of the San Diego River Park with plazas, cafes, commercial shops, parks, restaurants, recreation centers, outdoor balconies, amphitheatres and/or civic meeting rooms. These spaces can be public or private, but will be more successful if open to the public to use and accessible from the River Pathway. If these active areas are private then they should be somewhat visible from the River Pathway and have views of the river. Materials for these spaces should be of the same high quality of the main structures and should reflect the natural colors and textures of the river valley.



Example of a green street in Seattle, WA



Example of development facing the river

## 3.2 SPECIFIC REACH RECOMMENDATIONS

The San Diego River can be understood as a linked series of discrete reaches. The unique characteristics and opportunities of each reach suggest an approach that reveals their best qualities and showcases the changing visual and physical experience as one moves through the river valley.

Within the City of San Diego, the master plan identifies six reaches. Traditionally distinguished by hydrologic characteristics, these reaches are based upon distinct topographic conditions, spatial experience and/or land use. Following the flow of water from the ocean to the City of Santee, the reaches are the Estuary, the Lower Valley, the Confluence, the Upper Valley, the Gorge and the Plateau. Specific recommendations needed to create the river park are identified in each reach.

Specific reach recommendations are described in the following categories: existing conditions and recommendations. The existing conditions category provides a brief description of the area and the current conditions of the river hydrology and habitat. The recommendations category outlines how to achieve the master plan principles and general recommendations. Where appropriate, key sites are identified where special opportunities exist or where conditions and location define the site as a critical component of the river park.

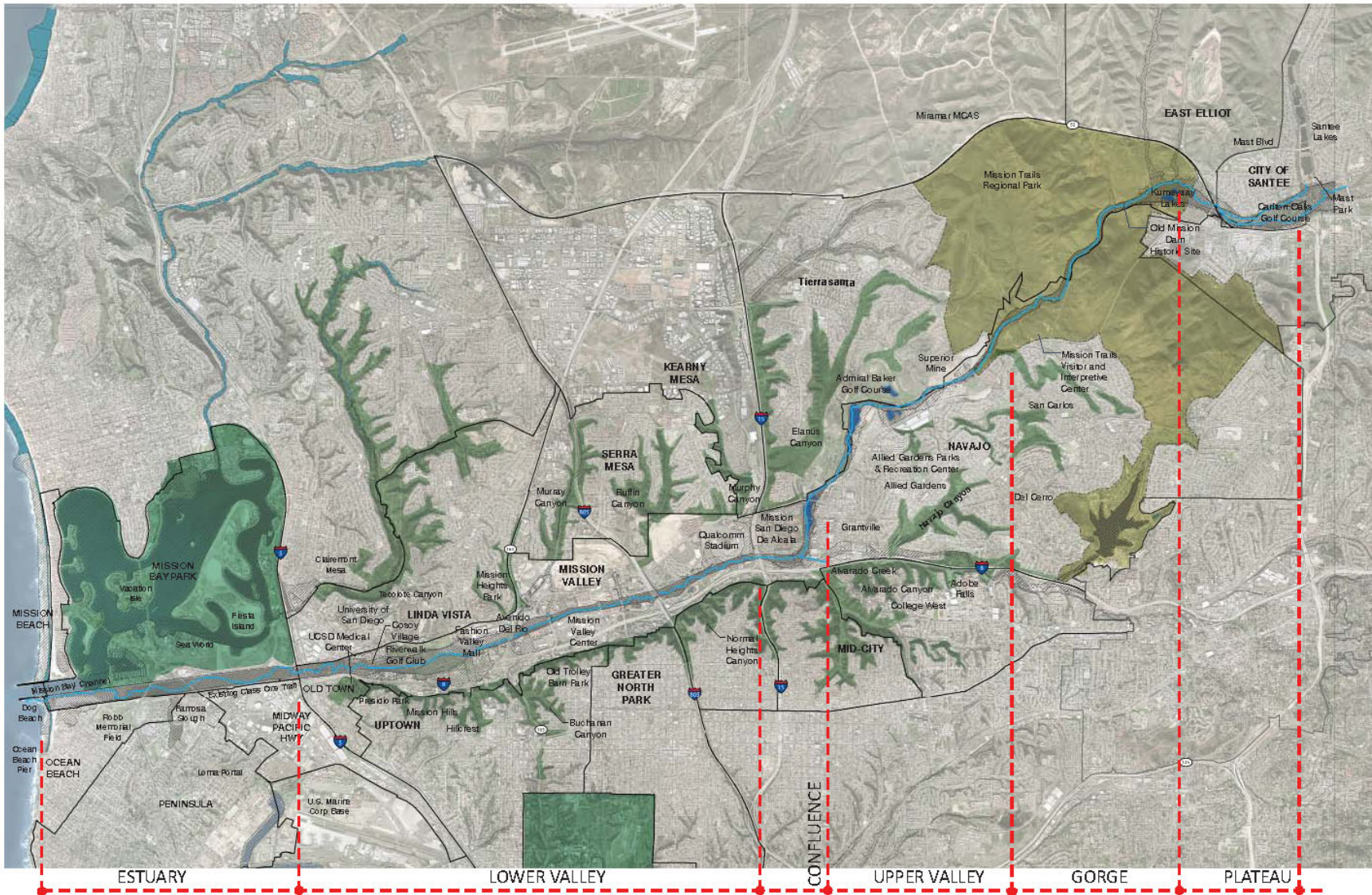


Figure 4. San Diego River Reaches



### 3.2.1 ESTUARY REACH

#### Overview

Extending from the Pacific Ocean to the western boundary of Mission Valley Preserve, the Estuary Reach is a unique habitat where the ocean waters converge with the fresh waters from upstream. The estuarine ecosystem at the mouth of the San Diego River is remarkably healthy, but significantly smaller than its original extent. The Derby Dike on the river's southern edge is responsible for this reduction in scale, separating the river from its delta that historically (and alternately) included both Mission Bay and San Diego Bay. The dike has also restricted and concentrated pedestrian and vehicle circulation, resulting in heavy containment of boundaries to the river channel.

The multiple crossings of Interstate 5, Mission Bay Drive and the railroad have had additional impacts on the estuary, creating an abrupt terminus and disrupting the gentle transition from estuarine to riparian habitat. The tremendous experience of viewing the entire estuary and shoreline as one entity is now limited by views of development, the dikes, and by highways containing the river. Despite these alterations, the estuary remains an expansive environment defined by horizontality.

The estuary includes, or is adjacent to several significant existing regional parks and open spaces, including Ocean Beach Park, Famosa Slough Open Space and Mission Bay Park, (which includes Dog Beach, Robb Field, Dusty Rhodes and the Southern Wildlife Preserve Open Space). The existing San Diego River Pathway exists on the south side of the river on top of the man-made river channel/dike and connects Ocean Beach Park to the Mission Valley Preserve. In addition, there is a multi-use path on the north side of the river that follows the river to Friars Road and at this point the path is located on the public street. Dog Beach is located at the mouth of the river and is used regionally by many dog owners. East of Dog Beach is the



Diverse estuarine vegetation



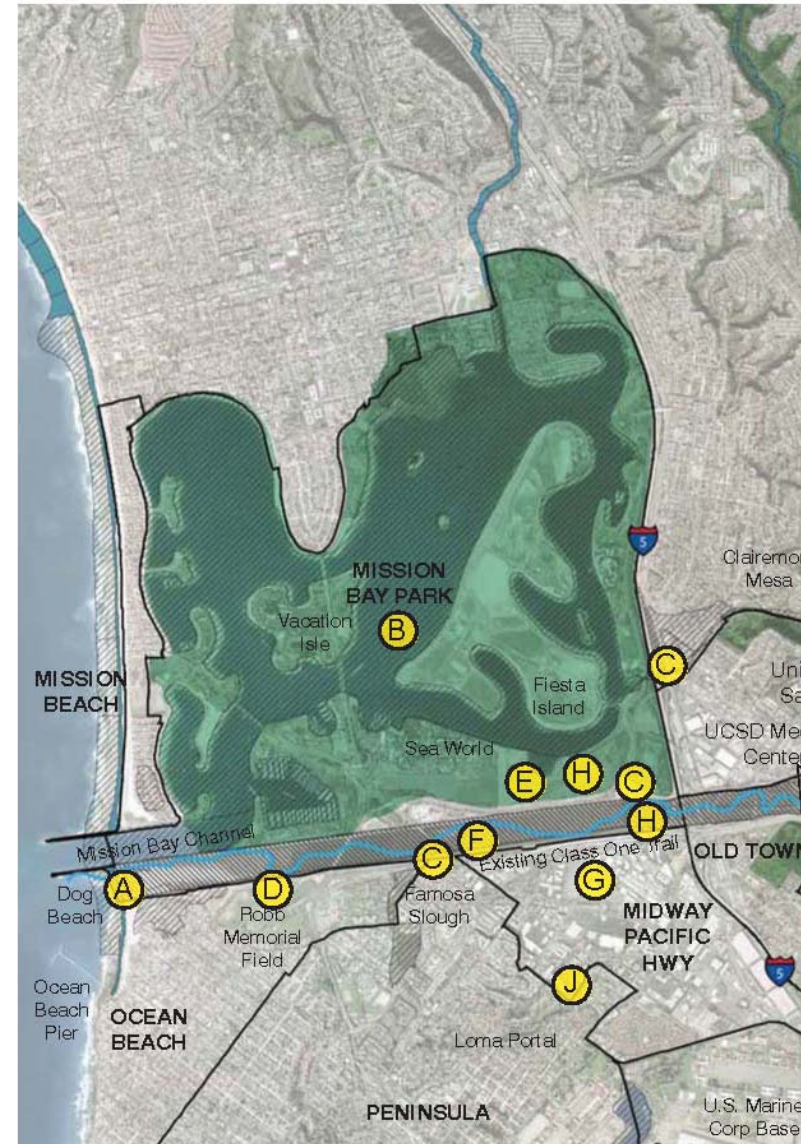
The estuary supports rich avian and aquatic species

Southern Wildlife Preserve, a unique habitat for waterfowl and shore birds, in addition to least terns, that use this area of the river channel to forage for food. To minimize disturbance to the habitat, especially wintering waterfowl, only non-motorized boats are allowed to use the river channel west of the Ingraham Street Bridge from April through September. Obtaining a park use permit from the Park and Recreation Department will be required prior to use of the river channel. The Park and Recreation Department will instruct permit applicants on use restrictions and will limit permits to ten for any given day. Fishing is allowed in the river channel west of Sunset Cliffs Boulevard. Wading in the river channel to fish is permissible only from Dog Beach. Interpretive signs about the Estuary Reach and its relationship to the river are needed.

DRAFT

## RECOMMENDATIONS

- A. Create a San Diego River Park Pathway Kiosk at Dog Beach identifying the western entrance of the River Pathway.
- B. Support the goals of Mission Bay Park Master Plan, (including Dog Beach, Robb Field, and Southern Wildlife Preserve), the Famosa Slough Enhancement Plan, and the Mission Valley Preserve.
- C. Improve pathway and trail connections to Mission Bay Park, Famosa Slough, Tecolote Canyon, Southern Wildlife Preserve and other open spaces from the San Diego River Pathway.
- D. Create a kiosk at Robb Field identifying the entrance to the San Diego River Pathway and re-landscape the area adjacent to the river with natives that relate to the estuary and river edge.
- E. Provide a river and estuary interpretive center according to the recommendations of the Mission Bay Park Master Plan.
- F. Create estuary overlook platforms along the San Diego River Park Pathway that could include interpretive signs on the hydrology and habitat of the Southern Wildlife Preserve.
- G. As the Sports Arena redevelops, explore the potential to create a park with a recreational connection to the river and neighborhood.
- H. Provide interpretive signage along the river pathway about the rich history of the estuary including the development of Old Town, the construction of Derby Dike and the creation of Mission Bay Park.
- I. Coordinate with Caltrans to establish a 'Green Gateway' at the intersection of Interstate 5 and the river valley by revegetating the Interstate rights-of-way with native vegetation.
- J. Create a pedestrian/bicycle connection between San Diego River Park and the San Diego Bay.



Estuary Reach

The Estuary Reach of the San Diego River Park must balance two primary needs: human interaction at an educational and experiential level, and the protection and maintenance of sensitive habitat. Careful design can accommodate both elements in a manner that benefits the system as a whole. Greater understanding of the ecosystem through interpretation will instill a sense of ownership and stewardship for this delicate part of the river valley. Overlooks should be provided along the river pathway to interpret the Southern Wildlife Preserve.

Opportunities to explore the expansion of the estuary should be sought, where possible, to further diversify the wildlife habitat. The potential to do so may exist at Famosa Slough and at Mission Bay Park. Planning efforts should also acknowledge that the entire corridor within the Estuary Reach, as proposed for the San Diego River Park, is within the boundaries of Mission Bay Park. Planning must integrate with and support the Mission Bay Park Master Plan.

The River Park must support planning efforts in Mission Bay Park to provide a passive, ecology-based facility, which includes educational and interpretive opportunities, public art, and scenic overlooks. The facility should be oriented toward the river, and buffer the river edge with native vegetation.

### 3.2.2 LOWER VALLEY REACH

#### Overview

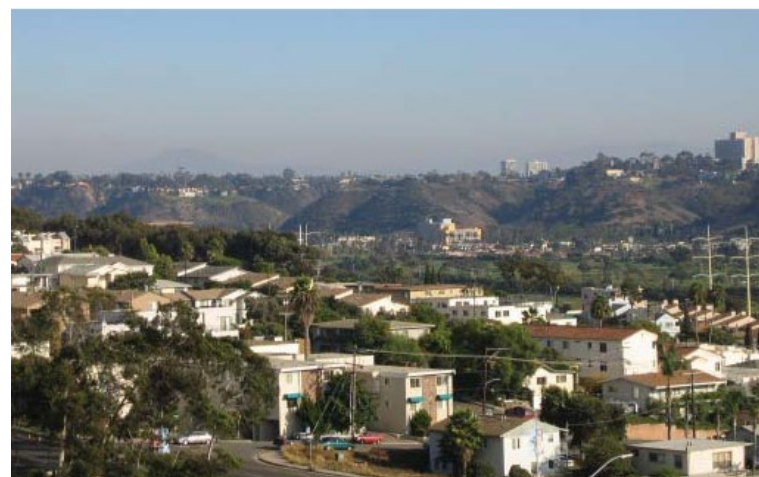
The Lower Valley includes the Mission Valley Preserve east to Interstate 15. The Lower Valley Reach is heavily urbanized; extensive paving in the form of parking lots and roadways, massive infrastructure projects and relatively high density development surround this reach. The river's presence is further marginalized by channelization and ponds. Simple lack of space presents a severe hydrological constraint throughout the Lower Valley Reach, and exotic vegetation negatively impacts the reach's native ecosystems.

At the very west end of the Lower Valley is the Mission Valley Preserve, which extends from the Interstate 5 to Sefton Field and the YMCA. The preserve is entirely within the floodplain of the San Diego River. Most of it is riparian in nature, including black willows, cottonwoods, and sycamores. The western edge is estuarine, due to the constant fluctuation of the ocean, with salt grass, pickleweed, and spiny rush. This preserve is home to many wetland species and home to the endangered Least Bell's Vireo, a tiny songbird that nests in the area after wintering in Baja California. The birds usually arrive sometime in the spring, as early as mid-March, and stay until as late as September. The Park and Recreation Department owns and maintains the preserve.

The communities of the Lower Valley Reach and above the valley walls are particularly deficient in active recreation space and the San Diego River Park should play a role in addressing this need. In 2009, Sefton Field was dedicated to the city as a 19-acre population-based park, of which 7.37 acres are usable for ball fields and children's play area and the remaining



Lower Valley looking northwest

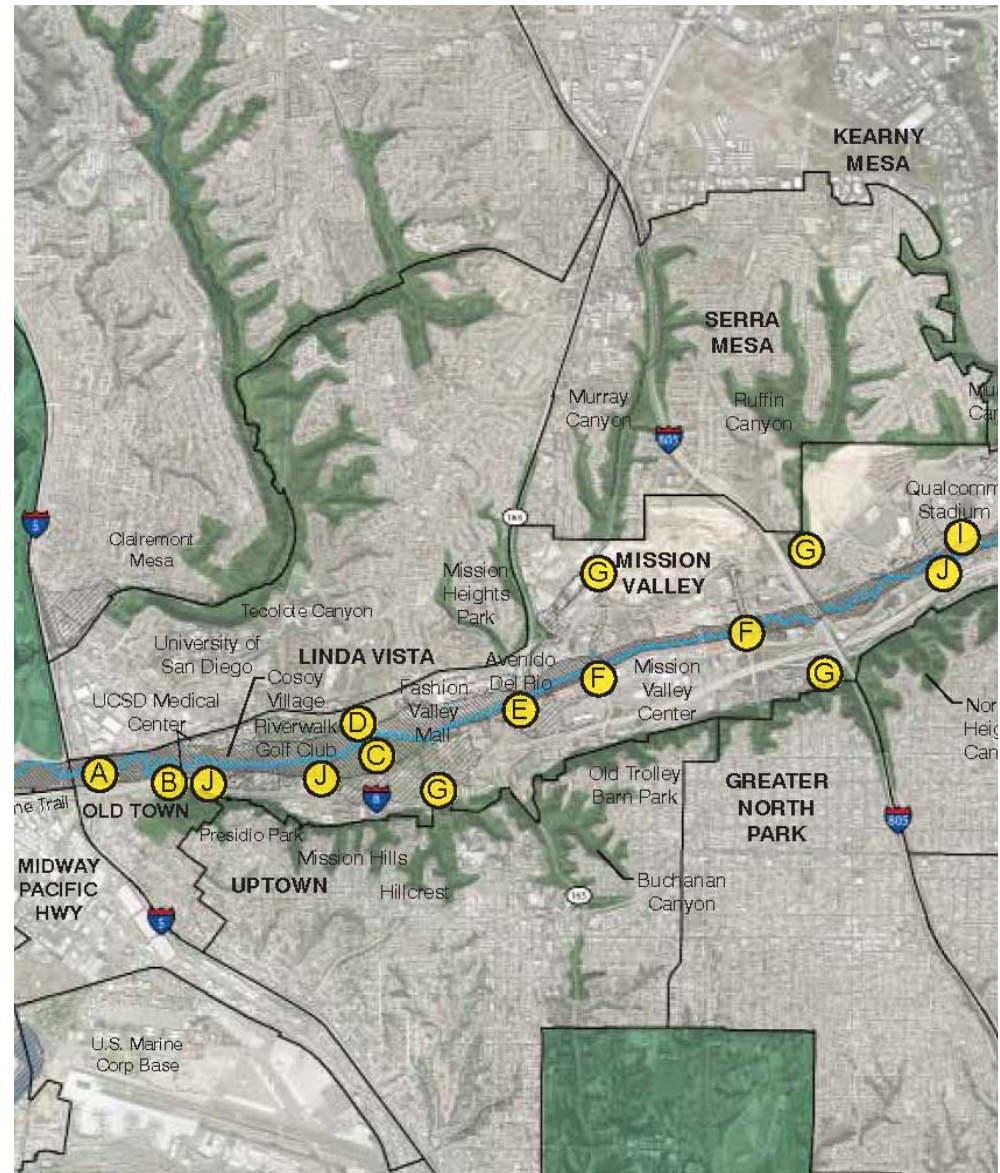


Lower Valley from University of San Diego looking southeast

acreage is a mitigation site for the construction of the Metropolitan Transit System (MTS) trolley. On the north side of the river, across from Sefton Field is the Mission Valley YMCA. This site, 8.3 acres, is owned by the city with a lease to the YMCA for recreation facilities including a recreation building, outdoor multi-use fields and a 50-meter pool. The San Diego River pathway is located on the south side of the river from the Mission Valley Preserve to Sefton Field. The city is looking at the feasibility of a trail connection from Sefton Field, across the river to the YMCA. East of Sefton Field, the river pathway does not exist along the river. At Fashion Valley Road, the river pathway begins again on the north side of the river only and continues under State Highway 163 to the First San Diego River Improvement Project (FSDRIP) at Hazard Center Drive. From Hazard Center Drive, the western boundary of FSDRIP, the river pathway is found on the north and south side of the river to the end of FSDRIP at Qualcomm Way. The river pathway stops at all existing public street intersections within FSDRIP, creating several gaps in the pathway. The city has completed a feasibility study on above-grade connections for the river pathway that would close all the gaps within FSDRIP. The next river pathway gap occurs under Interstate I-805 due to a large drainage structure. From Interstate 805 to the east, the river pathway does not exist as a formal paved path. When redevelopment occurs along the Fenton properties and the Qualcomm site, the river pathway will be connected to the Upper Valley Reach. Undeveloped space or public land exists at Riverwalk Golf Course and Qualcomm site within this reach, offering opportunities for the river to meander, for wildlife habitat to expand, and for the creation of the river pathway and parks.

## RECOMMENDATIONS

- A. Support the goals of the Mission Valley Preserve and provide additional interpretive signs on the role of the San Diego River in the Preserve.
- B. Provide a connection between the San Diego River Pathway and Presidio Park with a kiosk at Presidio Park to identify the river pathway.
- C. Explore options at the Riverwalk Golf Course to extend the river pathway along the trolley corridor as a short term measure until the Riverwalk Golf Course is redeveloped into a multi-use development. When the redevelopment occurs, provide the river pathway along the River Corridor Area.
- D. Pursue opportunities during the redevelopment of the Riverwalk Golf Course to address the hydrology of the river, to provide a public park and to orientate the new development toward the river.
- E. Coordinate with Caltrans to establish 'Green Gateways' at the intersection of State Highway 163 and Interstate 805 and the river valley by revegetating the freeway rights-of-ways with native vegetation.
- F. Create grade-separated crossings for the existing river pathway at FSDRIP at public street intersections, including Mission Center Road, Camino del Este and Qualcomm Way to complete the river pathway.



Lower Valley Reach

- G. Create trail connections to the southern canyons of the Lower Valley, including Buchanan and Normal Heights Canyon, and to the northern canyons, including Murphy and Ruffin Canyons.**
- H. Create the river pathway connection from Fenton Parkway Trolley Station to Qualcomm Way.**
- I. If the Qualcomm Stadium redevelops, include a community park, the San Diego River Park Pathway and a naturalized open space along the river.**
- J. Provide interpretive signage along the river pathway about the rich history of the Lower Valley including: the prehistoric Village of Cosoy located within and adjacent to the Riverwalk Golf Course and the Village of Nipaguay located south of the Qualcomm site; the history of the first Spanish Mission in California on Presidio Hill and how it was moved further inland; and the farming industry of the 1880's, the sand and gravel companies, construction of the highways, stadium and golf courses.**

The heavily suburbanized condition of this reach will require innovative park solutions. The San Diego River Park has the potential to combine 'natural' programs, such as the healthy hydrology of the river and its ecological habitat, with 'urban' programs, such as active and passive recreation and an accessible and urban corridor edge. By inviting activities, such as field sports, entertainment, and shopping into the river valley, the river becomes a place of varied experiences. An active river scene will reach out to a large number of user groups and introduce the river's historic and modern faces to a broad spectrum of people. The rights-of-way associated with the valley infrastructure present key opportunities to establish gateways into the valley and the city, and to extend the color and texture of native plant communities throughout the valley.

Space for the river must be sought out in the Lower Valley Reach. Open space easements and property acquisition are necessary for the San Diego River Park to become a success. The future redevelopment of Riverwalk Golf Course and Qualcomm Stadium are two opportunities for creating parks and open space.

The Lower Valley Reach should be considered as a whole, and consistent recommendations regarding new development, streets and landscape should be established. These recommendations set forth the character of the valley, moving it toward being a greener place planted with native species that concentrates higher density away from the river edges. Moving density away from the river will allow the San Diego River Park to provide for appropriate river corridor width. Where little space is available, this river corridor should aim to maintain the most adaptable species. Where greater river corridor width can be achieved, the San Diego River Park should seek to accommodate more sensitive species that have greater habitat requirements.



## Key Sites of the Lower Valley Reach

### A. Riverwalk Golf Course Redevelopment Site

The Levi-Cushman Specific Plan for the Riverwalk Golf Course site was approved in 1987. The plan proposes roughly 5.2 million square feet of mixed-use development including residential, retail, commercial, office and recreational uses for the approximately 200-acre site. The specific plan aligns with the San Diego River Park Master Plan in focusing development on the river, and this concept should guide future modifications to the plan. The specific plan departs from San Diego River Park goals in proposing a 12-acre island, as well as a 25-foot river planting buffer intended to “prevent direct access to habitat areas”. These recommendations should be modified to favor a naturalized river pattern as suggested in this master plan, increasing the channel width, creating meander and separating the stream flow from any existing ponds.

The San Diego River Park Pathway can serve the site by providing an amenity to people living and working within the proposed development, as well as providing pedestrian and bicycle commuter access to surrounding neighborhoods and the trolley. The trolley right-of-way may offer the opportunity for an interim trail alignment, until a more defined redevelopment concept can determine the best permanent location.

Because Riverwalk Golf Course is anticipated to redevelop in the future, there is an opportunity to establish a community- or neighborhood-scale park here. As the site redevelopment plans evolve, space for a public park should be sought adjacent to the river but buffered with naturalized open space. The nearby YMCA is expected to continue its private, fee-based recreation facility. Sefton Field will provide public recreation including ball fields and children’s play areas. Connection to these public and private facilities could be strengthened with



Illustrative River Pathway concept at Riverwalk site



View of the Riverwalk Golf Course

connected open space and a trail head near the YMCA. While the Mission Valley Community Plan calls for a neighborhood park at the YMCA site, usable land is at a premium, and environmental conflicts with the nearby wetlands are obstacles that make obtaining park acreage unlikely.

#### **Key Points for Riverwalk Golf Course Site**

- Create and maintain continuity of the river pathway for meeting park and recreation, and transportation needs in Mission Valley.
- Acquire land to establish a community/neighborhood park.
- Existing Levi-Cushman Specific Plan proposes extensive development, and further ponds and channelization of the river. Work with developer to improve river hydrology, provide pathway corridor and restore habitat.
- In the short term, the river pathway should be developed following the trolley alignment, within the trolley right-of-way. In the long term, the river pathway should be developed within the River Corridor Area.

#### **Potential Park Elements for Riverwalk Park Site**

- Active recreation and children's play area
- Location visually or conceptually connected to the river
- Character reflects the river's ecology and history
- River function incorporated into design

#### **B. Qualcomm Stadium Site**

The Qualcomm Stadium site is a long-term mixed-use redevelopment opportunity; if a new stadium is built on site or elsewhere, other opportunities could be explored. The potential redevelopment of the site also creates the opportunity for a river-oriented approach that creates significant new open space and park land on this site that could provide for active recreation. Any park land set aside should be adjacent to the river, but buffered with substantial naturalized open space that allows for a wider river channel and increased riparian habitat, transitioning to upland native vegetation at the trolley alignment.

This site is the last remaining city-owned property that is large enough to be in scale with the river valley. Careful consideration should be given to the intrinsic value of this place as a public green space and as an opportunity to create value to help finance redevelopment. A river-oriented community park could provide naturalized open space adjacent to the river, as well as recreation facilities, which complement Mission Bay Park and Mission Trails Regional Park.

### Key Points for Qualcomm Stadium Site

- Critical location for meeting community-based park and recreation needs in Mission Valley.
- No acquisition costs required; land is currently owned by City of San Diego.
- Critical location for creating continuity in San Diego River Park and San Diego River Park Pathway.
- Redevelopment potential should be coordinated to achieve mixed uses oriented to the river.
- Coordinate with any Qualcomm Stadium Site redevelopment plans to integrate active and passive park uses (on the existing stadium site) with primarily natural open space located between the trolley and the river.
- Extend open space corridor to create new habitat and trail connection to Murphy Canyon.
- Acknowledge environmental constraints with adjacent land uses.



Qualcomm Stadium site is an opportunity to interact the river with open space and new development

### Potential Park Elements for Qualcomm Stadium Site

- Natural riparian and upland habitat areas
- Ball fields/soccer fields
- Active sports complex
- Picnic facilities
- Amphitheater
- Boardwalk/overlooks for viewing and interpretation
- Children's Play area with "natural" character (wood, boulders, sand)
- Pedestrian linkage: park to river and Murphy Canyon
- Focus park toward river

### 3.2.3 CONFLUENCE REACH

#### Overview

The Confluence Reach is the area between Interstate 15 and Friars Road Bridge. It is where Murphy Canyon, Alvarado Canyon and two minor canyons once joined the San Diego River as it turned west to the Pacific Ocean. This place is not only a confluence of canyons and creeks, but a confluence of people and activity throughout the history of San Diego. This is where the El Camino Real met the east-west transportation route following the San Diego River near the Mission San Diego de Alcalá. This reach also acts as a gateway to multiple destinations, allowing users to access Murphy Canyon, Alvarado Canyon, Collwood Canyon, Navajo Canyon and the San Diego River Valley.

This reach is partially enclosed by a steep canyon wall on the west side and industrial uses on the east side of the river. Interstate 8 on the south further emphasizes the sense of enclosure. Within this reach, east of Interstate 15 on the south side of the river, is a large undeveloped parcel owned by the California Department of Fish and Game. This parcel was owned by Caltrans, but was deeded over to the California Department of Fish and Game during the expansion of Interstate 805. The site is a State Ecological Reserve and is open for public use during daylight hours for hiking on existing trails and fishing from certain areas.

The river is also constrained by a series of old gravel mining ponds below the Friars Road Bridge; these ponds impede the normal hydrologic activities of the river system. The narrow vegetated corridor is inadequate to separate stream flow from these ponds and the size and depth of the ponds makes filling impractical. Extensive exotic vegetation infestation is present both in the ponds (ludwigia) and in the river (arundo donax). As the river turns west, it is isolated by highway infrastructure, private property, and difficult physical terrain. The dense growth of



River is choked by invasive vegetation



Grantville Redevelopment Master Plan should encourage new development to orient to the river

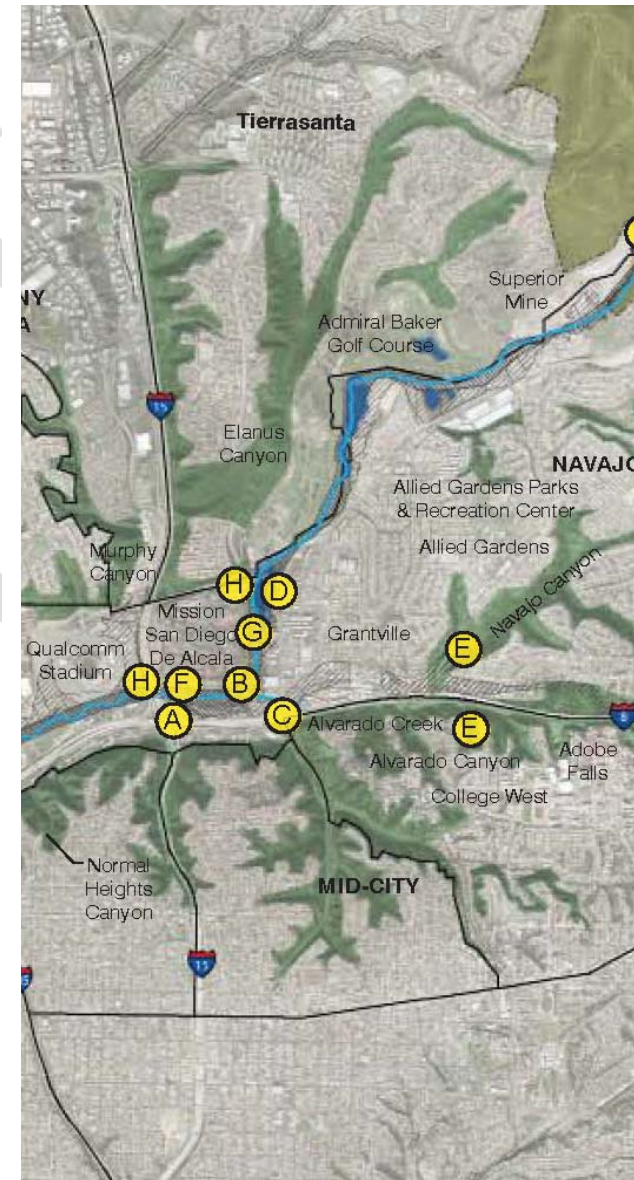
arundo further adds to the river's inaccessibility. The San Diego River Pathway has not been constructed in this reach, except for a section along the east side of the river adjacent to the Home Depot development. Access to the Mission San Diego de Alcalá from the river is along the public sidewalk along San Diego Mission Road.

The Confluence Reach contains the Grantville Redevelopment Subarea A of the Navajo Community. This area is directly adjacent to the east side of the river and has been zoned and built with industrial uses. The existing industrial uses have turned their backs on the river and used the area as a storage yard and in some cases a dumping ground. Through the Grantville Redevelopment Master Plan process, the area is proposed to be rezoned with a mix of uses and oriented to the river. The river side of the structures will feature mixed uses, plazas, public access and architecture that will step back and allow for air and sunlight to be part of the river corridor. Public parks required of the new residential use will be located adjacent to the river and will provide passive uses and connections to the river pathway.

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## RECOMENDATIONS

- A. Coordinate with the California Department of Fish and Game for a river pathway connection on their land along the south side of the river just east of Interstate 15.
- B. Coordinate with the landowners on the north side of the river at Rancho Mission Road for a river pathway connection to San Diego Mission Road.
- C. Improve water flow under the bridge at Mission Gorge/Fairmont Avenue for the Alvarado Creek to connect to the San Diego River. Provide a pedestrian connection under or over the bridge for access to the river pathway from Alvarado Creek.
- D. Coordinate with the Grantville Redevelopment Master Plan to identify potential land for public parks and open space through land acquisition or open space easements.
- E. Improve open space and trail connections with Alvarado Canyon and Navajo Canyon.
- F. Create a connection between the San Diego River Park Pathway and the Mission San Diego de Alcalá.
- G. Study alternatives to improve the hydrology of the river where the river corridor is narrow and constrained above the bend by deep ponds that were created by past sand and gravel mining operations. Separating the river channel from the ponds is recommended, but to achieve this recommendation acquisition of additional land is most likely necessary. In addition, it is recommended to augment the ponds by removing barriers between sections to create a larger, deeper pond.
- H. Provide interpretive signage along the river pathway about the history of the Confluence Reach including; Mission San Diego de Alcalá, the Kumeyaay village of Nipaguay at the historic mission site, the formation of the large Mexican land grants and the history of the sand and gravel mines.



Confluence Reach

The Grantville Redevelopment Master Plan (consists of three subareas A, B and C) will provide the tools to change the river landscape in the Confluence Reach and the Upper Valley reach, as described in Section 3.2.4 below (Subarea C is not adjacent to the San Diego River). By engaging owners of under-utilized property on the east edge of the river corridor, the Grantville Redevelopment Master Plan may create opportunities for the acquisition of land or establishing public access easements that could increase river corridor width. A wider river corridor would allow the river to be separated from the ponds, and offer space for passive recreation opportunities. Once the ponds are separated, a complementary action might be improving them for more intensive recreation activity, such as fishing or non-motorized boating.

If the river corridor in these areas can be expanded to the east, the San Diego River Park Pathway can be best accommodated on the east side of the river. The west side of the river is steep and narrow, and does not have possibilities for trail construction, however cantilevered construction may be considered, but could have a significant impact on the river and habitat.

There is significant potential to recreate an important wildlife habitat connection between the river valley, Murphy Canyon and Alvarado Creek. Such connections would represent a meaningful first step toward reestablishing the physiographic origins of the river valley. A trail and habitat/open space connection along Alvarado Canyon Creek would link Navajo Canyon with the river corridor, further unifying the river valley's recreational and interpretive resources.

## Key Site of the Confluence Reach

### A. Grantville Redevelopment Subarea A and Alvarado Creek Site

Alvarado Canyon combines with Navajo and Collwood Canyons to form the largest tributary canyon system linked to the San Diego River Valley within the City of San Diego. However, currently this connection is nearly invisible because of the scale of highway infrastructure and development that have choked the canyon throat at the confluence. Replacing culverts with bridges and gaining adequate land to reduce the channelization of Alvarado Creek will re-establish the visual continuity of the canyon system with the river valley. A green connection would also benefit the river by providing natural filtration of surface runoff, increasing riparian habitat and allowing space for trail connections to communities and open space to the east.

#### Key Points for the Grantville Redevelopment Subarea A & Alvarado Creek Site

- Location is critical for reconnecting San Diego River with its most significant tributary canyon, Alvarado Creek, within the City of San Diego.
- Although beyond the bounds of this master plan, “the greening” of Alvarado Creek is an important component of connecting the river valley to the canyon, providing potential space for expanding and connecting habitat and trail to the canyon, San Diego State University and upland neighborhoods.
- Coordinate with private land owners in Grantville to incorporate the river as an amenity for all redevelopment.
- Improve the creek passage under Mission Gorge Road and Fairmount Avenue to allow for improved creek flow, water quality and pedestrian safety in Grantville.
- Coordinate with Caltrans on the potential new interchange design and construction.
- Provide park land along the river as a component of Grantville Redevelopment.



Vegetation can soften the impact of concrete channels

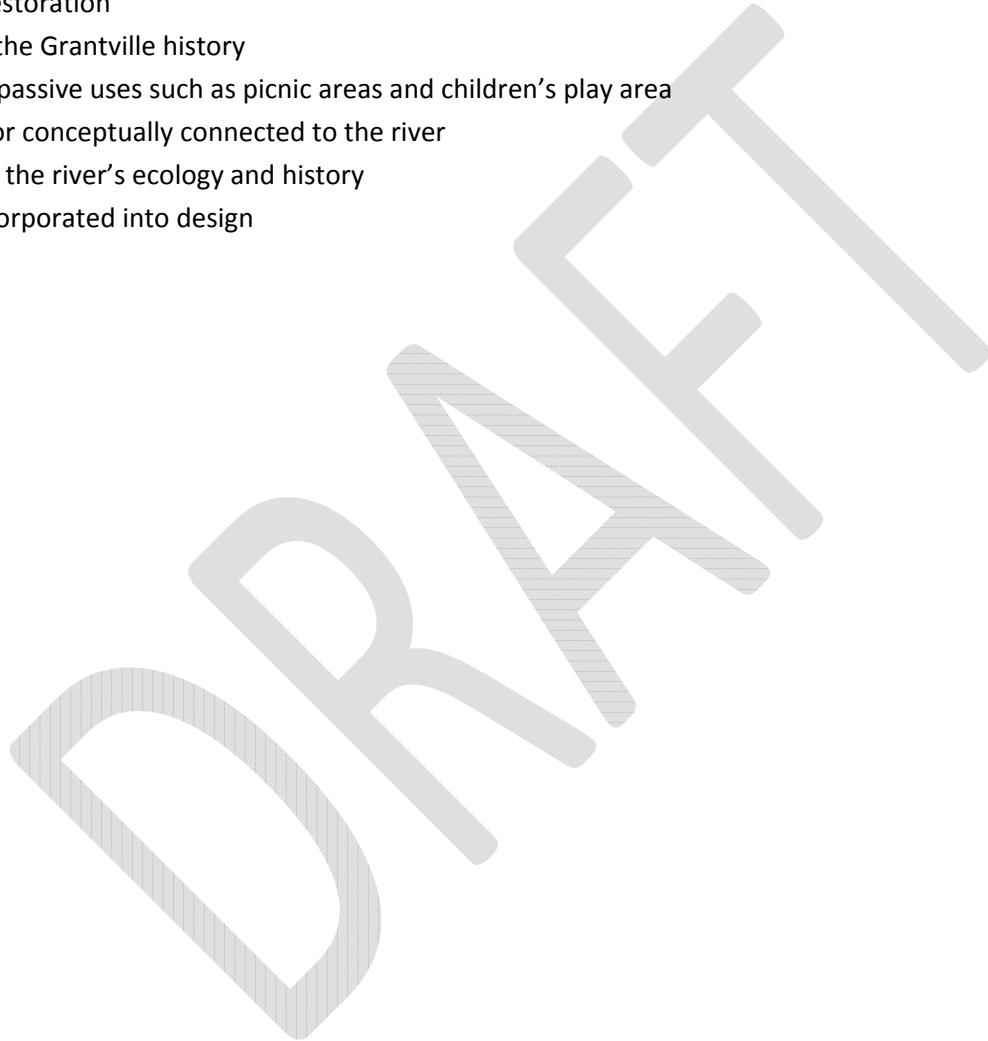


The channelization of Alvarado Creek above the Grantville Post Office offers little wildlife habitat and allows for no groundwater recharge



**Potential Park Elements for Grantville Redevelopment Subarea A and Alvarado Creek Site**

- Path connection to the east side of Mission Gorge Road and Fairmount Avenue
- Wildlife habitat restoration
- Interpretation of the Grantville history
- Public parks with passive uses such as picnic areas and children’s play area
- Location visually or conceptually connected to the river
- Character reflects the river’s ecology and history
- River function incorporated into design



### 3.2.4 UPPER VALLEY REACH

#### Overview

The Upper Valley Reach extends from Friars Road Bridge to the western boundary of Mission Trails Regional Park. It is a reach comprised of complex physiographic and surface conditions, with a diversity of experiences from the enclosure of steep valley walls in the east to a broad and open valley near Admiral Baker Golf Course. Heavily impacted by human activity, this reach range has the severe character of a surface mine to the exotic landscape of a golf course, bracketed alternately with dense development and sage scrub habitat.

The Upper Valley Reach is characterized by three hydrologic conditions that are deleterious to the health of the river system. First, the gravel extraction mine bordering Mission Trails Regional Park has channelized the river and disrupted habitat continuity through and across the mine site. The river is similarly channelized further downstream through the federally-owned and maintained Admiral Baker Golf Course. This element poses additional risk of surface runoff-carrying pesticides, fertilizers and other pollutants because of the lack of a buffer between the golf course and the river. Secondly, the river corridor through the mine site is infested with exotic plant species, particularly Giant Reed (*Arundo donax*). These exotics displace native riparian vegetation, causing the concomitant loss of the animal species that would typically inhabit this vegetation. Finally, the river channel is interrupted by a series of ponds that obstruct the natural sediment transport processes of the stream. A problem shared by other ponds in the system, the unnatural stream flow invites further infestation by non-native plant species; in still water conditions, the encroaching species is typically the surface plant Water Primrose (*Ludwigia* spp.).



Upper Valley looking east over Admiral Baker Golf Course



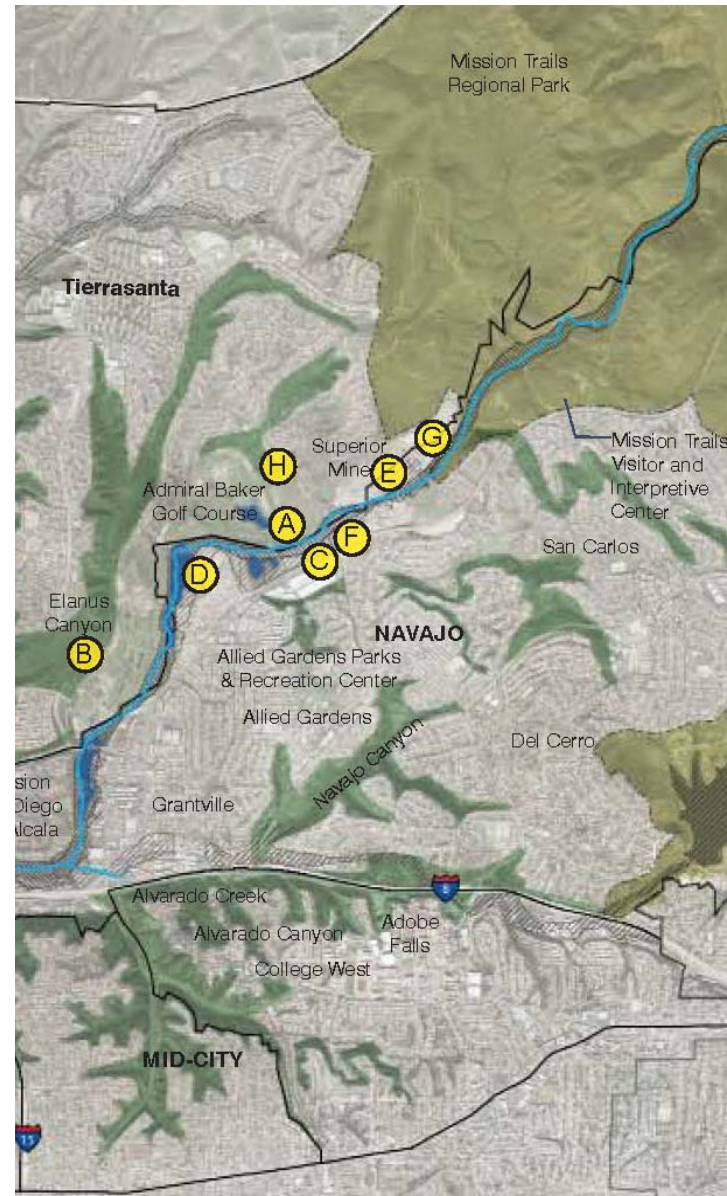
Superior Mine site

Within the Upper Valley Reach is the Grantville Subarea B of the Grantville Redevelopment Area within Navajo Community. This area is directly adjacent to the east and south side of the river and has been zoned and built with industrial uses. Similar to Grantville Subarea A, this area contains industrial uses which that have turned their backs on the river and used the area as a storage yard, and in some cases a dumping ground. Grantville Subarea B is proposed to be rezoned to a combination of multi-family residential, commercial and industrial uses that will reorient new development to the river. These new structures would feather mixed uses, plazas, public access and architecture that will step back and allow for air and sunlight to be part of the river corridor. Public parks required of the new residential use will be located adjacent to the river and will provide passive uses and connections to the river pathway.

This reach does not contain any segments of the river pathway in that the land is all privately-owned and has not redeveloped in the several decades. The city has prepared a feasibility study of the river pathway through this reach, but no future funding or action has taken place. The Archstone Project in the southern end of the reach will construct the first segment of the river pathway as part of their new residential development.

## RECOMMENDATIONS

- A. Coordinate with Navy Planners to explore opportunities to modify the Admiral Baker Golf Course to create a space for the San Diego River Pathway, and to improve the relationship of the golf course with the river, such as controlling surface runoff from entering the river.
- B. Improve open space and trail connections to Elanus Canyon north of Admiral Baker Golf Course.
- C. Create public parks along the river pathway within the Grantville Redevelopment Subarea B and explore opportunities for water recreation.
- D. Separate the river channel from the old mining ponds as land is redeveloped to improve the hydrology of the river.
- E. Coordinate with Superior Mine redevelopment project to improve the hydrology of the river, establish a naturalized open space and habitat areas adequate to achieve wildlife habitat objectives and provide for the multi-use river pathway. The redevelopment should also look for areas along the river to interpret the river valley's history, including the mining operations.
- F. When Grantville Subarea B redevelops, create a multi-use river pathway connecting to Mission Trails Regional Park.
- G. Provide interpretive signage along the river pathway about the history of the Upper Valley Reach, including the Mission Dam and Flume that brought water to Mission Valley, the historic cattle ranches and the history of the sand and gravel mines.
- H. Create a trail connection from the multi-use river pathway to the Tierrasanta community. Provide an overlook and a kiosk at the higher elevation to mark the entrance to the San Diego River Park.



Upper Valley Reach

Within the Upper Valley Reach, the Grantville Redevelopment Master Plan should provide the tools to change the river landscape and create opportunities for the acquisition of land or establishing public access easements that could increase river corridor width. A wider river corridor in the Upper Valley reach would allow the river to be separated from the ponds, and offer space for passive recreation opportunities. Separating the ponds from the river will improve the flow velocities and reestablish some degree of sediment transport. Hydraulic and hydrologic studies should be conducted in conjunction with redevelopment planning to determine the physical and hydrologic characteristics and ecologic condition of each specific pond, and provide recommendations as to the feasibility, ecological value and open space benefit of separating stream flow from the pond in each location.

The San Diego River Park Pathway can be best accommodated on the east side of the river connecting the Confluence Reach to Mission Trails Regional Park. A pathway or smaller trail connection should be provided to the Tierrasanta community, linking this community to the river park. In addition, interpretive signs should be placed along the pathway to provide the history of the Old Mission Dam flume and the mining industry.

## **Key Sites of the Upper Valley Reach**

### **A. Admiral Baker Golf Course Site**

There are no plans to close or redevelop the golf course, but there are opportunities to integrate the golf course with the river corridor. Methods of meshing the two landscapes might include pedestrian trail connections across the golf course or the redevelopment of the golf course as a “links” or target type course with native landscaping between tees and greens. The incorporation of native plant species, creating a visual link and habitat corridor from the river corridor to the canyon north of the golf course, would be another strong step toward integrating the river and recreational environments.

#### **Key Points for Admiral Baker Golf Course Site**

- Continue on-going discussions with Navy Planners to find an appropriate level and means of integrating the golf course with the San Diego River Park.
- Expand critical habitat area and connections to the upper canyon north of the golf course.
- Create trail connections around or possibly through the golf course.
- Establish an open space habitat, and path corridors that achieve wildlife movement and habitat objectives.
- Create a trail connection from the Tierrasanta Community to the river pathway with an overlook at the upper elevation.

## B. Superior Mine Site / Grantville Redevelopment Subarea B

Evolution of the landscape within the Upper Valley Reach hinges upon successfully engaging the land owners, developers and planners of Superior Mine, which is in the Grantville Redevelopment Subarea B, and adjacent lands with the river park master planning process. As these lands move toward reclamation and redevelopment, collaboration can bring about benefits to all parties. Creating adequate corridor width for habitat and trail is a minimum requirement. A broad natural river corridor through the mine site could serve as a strong organizing feature of the development. This corridor should include the river pathway, native riparian habitat, an infiltration zone for ground water recharge, and/or an improved river channel with introduced meanders. The potential to acquire portions of the site to create open space and recreation land should also be explored.

Incorporating elements of the San Diego River Park into the redevelopment of the mine site creates the potential of increasing property values, and as such, is an incentive for cooperative planning. The site's close proximity to Mission Trails Regional Park also creates an excellent opportunity to use the river and its landscape as a unique and identifying character of the site. Cooperative planning and river-sensitive design would benefit end-users by providing a visual and recreational amenity, as well as a multi-use path for commuter bicycle connections to adjacent communities and trolley service.



Improvement to Admiral Baker Golf Course can contribute to the health of the river



The reclamation and redevelopment of Superior Mine is a significant opportunity to improve the condition of the River and wildlife habitat

### **Key Points for the Superior Mine Site/Grantville Redevelopment Subarea B**

- Coordinate with Superior Mine land owners and developers to find an appropriate balance between development, park land and open space.
- Ongoing mining operations are scheduled to continue for another 20 years. The potential for increased property values, due to the amenity created by the adjacent San Diego River Park, may encourage an earlier end to mining operations.
- Create an open space amenity that is accessible and usable by the public that provides access to the river, as well as added value to the development project. The location, size and use of this amenity will be studied as part of the specific land planning studies for the future development.

### **Potential Park Elements for Superior Mine Site/Grantville Redevelopment Subarea B**

- Public parks with passive uses, such as picnic areas and children's play area
- Incorporation of the river pathway as an amenity of the public park
- Wildlife habitat restoration
- Location visually or conceptually connected to the river
- Character reflects the river's ecology and history
- River function incorporated into design

### 3.2.5 GORGE REACH

#### Overview

The Gorge Reach is defined primarily as the Mission Trails Regional Park but also includes privately-owned land between Mission Trails Regional Park and Mast Boulevard. The Gorge Reach offers a strong sense of enclosure reinforced by the rising walls of Fortuna Mountain and Kwaay Paay Mountain. Established in 1974, Mission Trails Regional Park has preserved the river valley’s original landscape of sage scrub, chaparral, and oak woodland and riparian habitats in exceptional condition. At approximately 5,800 acres, Mission Trails Regional Park is one of the largest urban parks in the nation, and a regional destination for hiking, biking, and wildlife viewing. The rich historic layers of the San Diego River Valley are revealed in many ways within the park. The Kumeyaay, Spanish missionaries and settlers, and 19th and 20th century ranchers and farmers have all left their mark on the land now within the bounds of Mission Trails Regional Park.

The river pathway has been established from the Mission Trails Regional Park Visitor Center to the Kumeyaay Campground on Father Junipero Serra Trail. Gaps in the river pathway exist from the Superior Mine site to the visitor center and from the Kumeyaay Campground to the Mast Boulevard Staging Area. The river pathway within the Mission Trails Regional Park will be soft paved and meet the trail requirements of the Mission Trails Master Plan.



South Fortuna Mountain

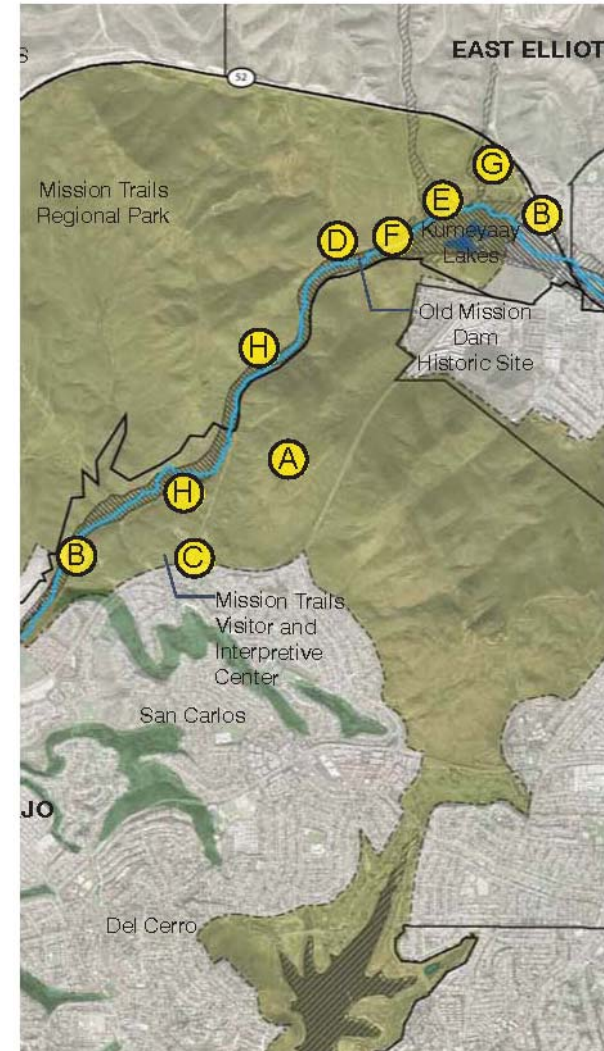


Mission Trails Visitor Center Plaza



## RECOMMENDATIONS

- A. Support the recommendations of the Mission Trails Regional Park Master Plan. Coordinate with the Mission Trails Regional Park to establish a continuous trail system through the park that would connect the west and east ends of the San Diego River Park Pathway. While trails are not paved in the Mission Trails Regional Park, the trail should provide for pedestrians and bicycle users.
- B. Provide a kiosk at the west and east entrances to the Mission Trails Regional Park along the San Diego River Park Pathway.
- C. Support existing and proposed interpretation of the river and history of the park at the Mission Trails Visitor Center.
- D. Support the continual maintenance of the Old Mission Dam by dredging, and provide interpretive signage on why and how this type of maintenance is provided.
- E. Study trail connections from Kumeyaay Lake campground to the Mast Boulevard Staging Area.
- F. Support the implementation of the Kumeyaay Lake Dredging and Berm Restoration to improve the hydrology of the river.
- G. Study trail connections and alignments from the Mast Boulevard Staging Area to the future river pathway below State Highway 52.
- H. Provide interpretive signage along the river pathway about the history of the Gorge Reach, including the Old Mission Dam, the historic cattle ranches, and the creation of the Mission Trails Regional Park.



Gorge Reach

The goals of the San Diego River Park Master Plan are in harmony with those of the Mission Trails Regional Park Master Plan and focus on continually improving hydrology and habitat along the length of the river and seek to further enhance and preserve the conditions already present at the park. That effort should explore the possibility of a soft surface trail linking the river corridor west of the park with Father Junipero Serra Trail and the Mission Trails Regional Park Visitor Center. Planning efforts should also consider improving the bike lanes within the Mission Gorge Road right-of-way or creating a trail, if right-of-way improvements are impossible; this trail would create internal and external connections within the park and with up-stream communities.

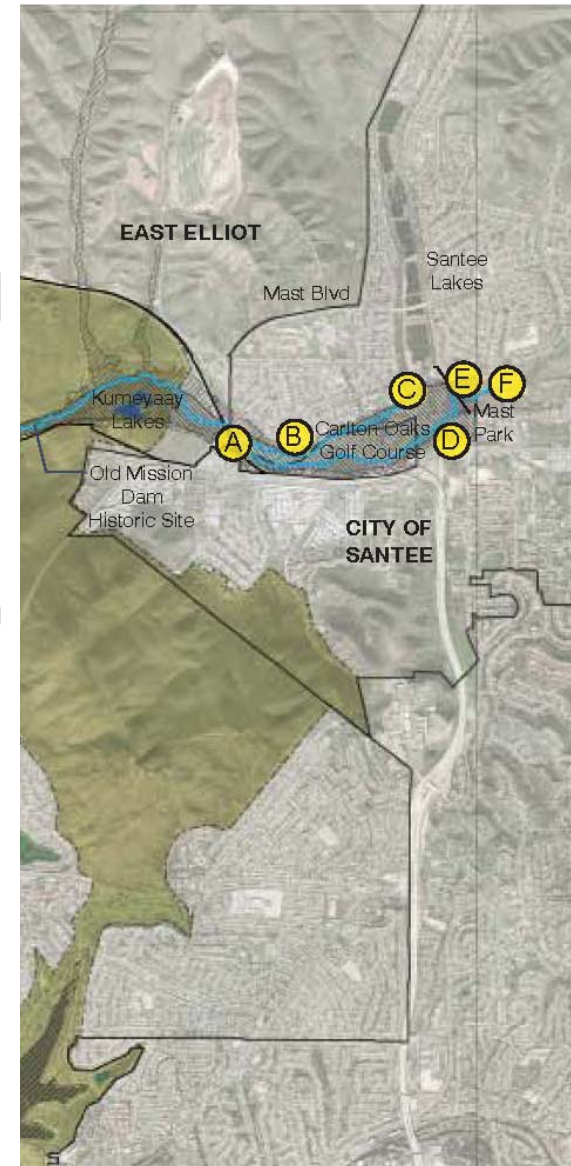
### **3.2.6 PLATEAU REACH**

#### **Overview**

The Plateau Reach extends east from the privately-owned land adjacent to the Mission Trails Regional Park to the City of Santee. The terrain of the plateau opens up and reveals expansive views to the hills above Santee and to the distant mountains in the Cleveland National Forest. This expanse offers a sense of release from the narrow, enclosed condition of the river in the Gorge Reach. The San Diego River is negatively impacted by a variety of physical constraints. North of the river is a man-made berm that separates the river from Carlton Oaks golf course and to the south of the river is State Highway 52. Heavy infestations of Giant Reed, Brazilian Pepper, and Fountain Grass (*Pennisetum* sp.) and other exotic species degrade water and vegetative quality. Other than golf, recreational resources are minimal, but an informal pedestrian trail exists on the north side of the river on top of the dike that connects the west and east end of the golf course. This existing trail is a potential site for the river pathway that will be the eastern boundary of the San Diego River Park.

## RECOMMENDATIONS

- A. Coordinate with Caltrans to identify potential alignment and methods to create the San Diego River Park Pathway under State Highway 52 and West Hills Boulevard to the Carlton Oaks Golf Course.
- B. Build the San Diego River Park Pathway along the existing berm on the north side of the river through Carlton Oaks Golf Course.
- C. Initiate a dialogue with Carlton Oaks Golf Course to explore the potential to evolve the golf course edge into a naturalized landscape buffer with native plant species and a vegetation management plan that removes exotic plants. The buffer should be designed to provide habitat, as well as a filtration of the golf course surface runoff before it goes into the river.
- D. If the golf course remains as a long term use, then consider a new concept for the golf course as a “links” course or target-type course that is substantially native vegetation.
- E. If the golf course were to change in the future, the redevelopment of the site should look at opportunities for a natural open space next to the river and include a public park as a gateway park to the City of San Diego.
- F. Provide a kiosk at the boundary of the City of San Diego and the City of Santee that identifies the eastern end of the San Diego River Park.



Plateau Reach

## Key Site of the Plateau Reach

### A. Carlton Oaks Golf Course Site

There is potential for the golf course to accommodate a multi-use river pathway on its southern edge near the river; this possibility should be explored when the Carlton Oaks Golf Course lease comes due for renewal. Land currently not used as golf course should be negotiated out of the lease and used for the river pathway and open space. The long term potential for this area to evolve into becoming part of the San Diego River Park should also be considered. Redesigning the golf course to be more sensitive to the hydrology of the river and creating habitat corridors are ways in which the golf course may accommodate multiple user groups.

#### Key Points for the Carlton Oaks Golf Course Site

- Golf course property within the city's jurisdiction is owned by City of San Diego Public Utilities Department.
- Golf Course site is a critical location for connecting the City of San Diego segment of the San Diego River Park with the City of Santee and upstream segments of the river park.
- The river corridor is channelized, narrow and constrained on the south side of the golf course. An open space corridor would provide adequate width to re-contour the river channel. An improved river channel should allow increased river length and meander, increased riparian habitat, and run-off buffering at the golf course.



Cottonwood Tree Grove and secondary stream channel on Carlton Oaks Golf Course



Invasive species removal project, vegetation management in practice



Illustrative Concept for the San Diego River Park at Carton Oaks Golf Course

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## 4.0 DESIGN GUIDELINES

### 4.1 PURPOSE

The purpose of the master plan design guidelines is to provide written and graphic information to support the Master Plan Vision, Principles and Recommendations and to support the following Development Regulations in the City of San Diego Municipal Code:

- Mission Valley Planned District Ordinance (Chapter 15, Article 14, Division 1-4),
- Community Plan Implementation Overlay Zone (Chapter 13, Article 2, Division 14, Navajo)
- Mission Trails Design District (Chapter 13, Article 2, Division 12)

All City of San Diego public projects that have approved Master Permits, prior to the adoption of this Master Plan, to do work in the River Valley are exempt from the requirements of the San Diego River Park Master Plan Design Guidelines but are encouraged to comply where possible.

## 4.2 RELATIONSHIP TO MSCP AND ENVIRONMENTALLY SENSITIVE LANDS REGULATIONS

In addition, to supporting the Master Plan's Vision/Principles/Recommendations and the Development Regulations, the design guidelines must also work with the requirements of the Multiple Species Conservation Program (MSCP) and the Environmentally Sensitive Lands (ESL) Regulations for Wetland Buffers (Chapter 14, Article 3, and Division 1).

The San Diego River and a majority of the area adjacent to the river are mapped as Multi-Habitat Planning Area (MHPA) and subject to Section 1.4 of the MSCP Subarea Plan 'Land Use Considerations'. These Land Use Considerations are implemented through the ESL regulations, the City's Biology Guidelines and the MSCP Subarea Plan during project review and approval.

The land adjacent to the river contains wetlands that are subject to the Environmentally Sensitive Lands Regulation for Wetland Buffers. These regulations require a wetland buffer to be maintained around all wetlands as appropriate to protect the functions and values of the existing wetland area. In the Coastal Overlay Zone the wetland buffer is a standard 100-foot minimum. Outside the Coastal Overlay Zone, the buffer is determined by site specific evaluation of onsite wetland's functions and values. A reduction of the 100 foot wetland buffer standard may require consultation with the wildlife agencies (U.S. Fish & Wildlife Service and California Department of Fish and Game) before any public hearing for a development proposal. The wetland buffer can be the same footprint as the MHPA or in some cases the buffer will be larger than the MHPA boundary due to the functions and values of the existing wetland. Therefore, all development proposals in and adjacent to the San Diego River must map the following three boundaries:

1. The River Corridor and River Influence Areas of the San Diego River Park Master Plan (this boundary can be determined by applying the master plan guidelines).
2. The MHPA boundary (this boundary has been mapped and can be accessed from SanGIS mapping systems).
3. The Wetland Buffer (this boundary will be determined based on the biological resource present at the time of project submittal).

Once the boundaries are mapped, the largest mapped boundary will prevail. In some areas where the MHPA and the Wetland Buffer are larger than the San Diego River Corridor Area, then the San Diego River Park Pathway (river pathway) will be required to be outside the MHPA and the wetland buffer. All development within the San Diego River Park is required to undergo a discretionary review process and obtain the required discretionary permits.

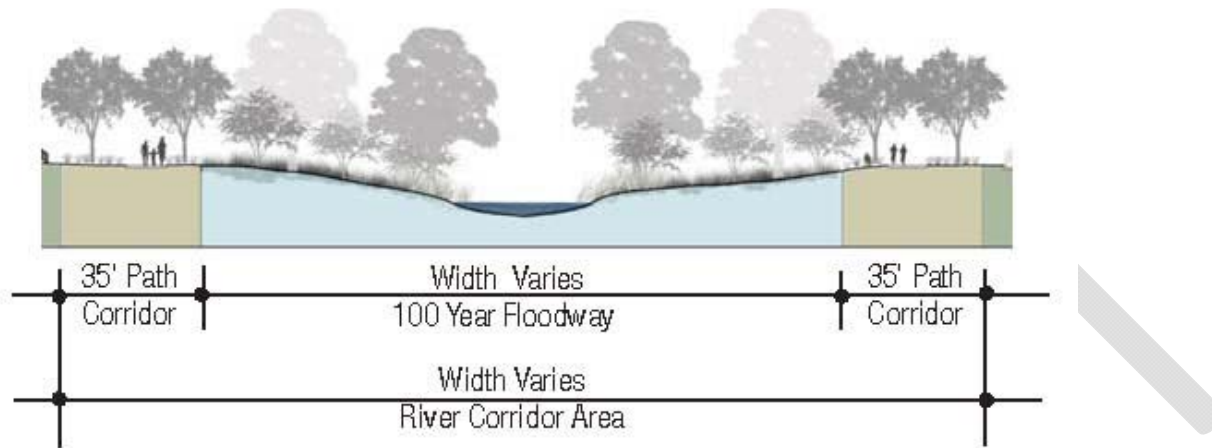


## 4.3 RIVER CORRIDOR AREA

### 4.3.1 PURPOSE AND DEFINITIONS

#### 4.3.1.1 Purpose

The purpose of the River Corridor Area is to restore the health of the San Diego River by cleaning the river and its hydrologic function through increasing its length and recharge area, separating it from ponds, and creating opportunities for braiding and meandering. It will also enhance wildlife habitat by providing a continuous movement corridor that varies in width and provides diversity of habitat and native vegetation. The River Corridor Area will also serve as a natural open space and passive recreation system for the surrounding communities by providing a river pathway and trail network and other park amenities. Its purpose is also to reclaim the valley as a common gathering place for all San Diego citizens, unify fragmented land of the river valley, emphasize a continuum of experience from the ocean to the mountains, and reveal the history of the river valley and its significance to the San Diego Region.



River Corridor Area Plan and Section

#### **4.3.1.2 Definitions and Boundaries**

The River Corridor Area is defined as the 100-year Floodway and the Path Corridor:

- 100-year Floodway Boundary: Is defined by the Federal Emergency Management Agency (FEMA) mapped area for the 100-year Floodway and this area will vary in width depending on the location along the river. This area also provides for; a filtration zone adjacent to the river; an opportunity for the river to meander in; places for wildlife habitat and, where possible, pedestrian trails.
- Path Corridor: The Path Corridor is 35 feet beyond the 100-year Floodway on each side of the river. The intent of this sub-corridor is to provide a zone for wildlife habitat, native vegetation, a multi-use river pathway, and passive recreation.

#### **4.3.2 SITE PLANNING FOR THE RIVER CORRIDOR AREA**

##### **4.3.2.1 100-Year Floodway**

- A. Development in the floodway shall be in accordance with Municipal Code Section 143.0145 (Development Regulations for Special Flood Hazard Areas) and the city's Multiple Species Conservation Program (MSCP) Subarea Plan Land Use Considerations where the floodway is mapped MHPA.
- B. The River bottom and sides shall be natural or designed with natural materials and sized to accommodate a 100 year flood as well as provide for groundwater recharge capability.
- C. The use of gabions and native stone on river sides to dissipate flows shall include design features to provide for or preserve wildlife habitats and wildlife movement corridors.
- D. Where floodway width permits, the bottom of the floodway should be a maximum of 5% cross slope to encourage river braiding and meander.



Rehabilitated Platte River in Colorado designed to be natural in appearance by utilizing native materials and gentle slopes



Example of natural stone used to dissipate flows and allow for wildlife movement



Natural river bank in Southern California with gently sloping edges and native plant materials



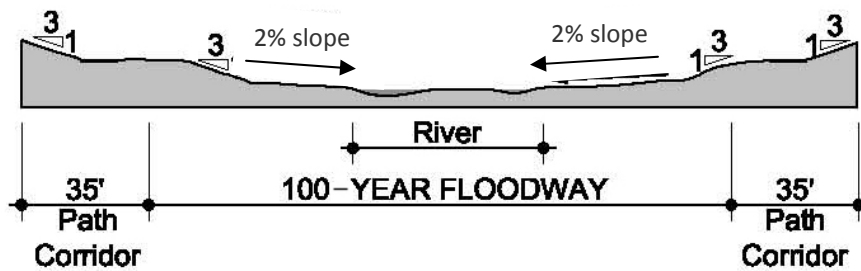
Concrete or other man made materials should not be used to stabilize channel banks

### 4.3.2.2 Path Corridor

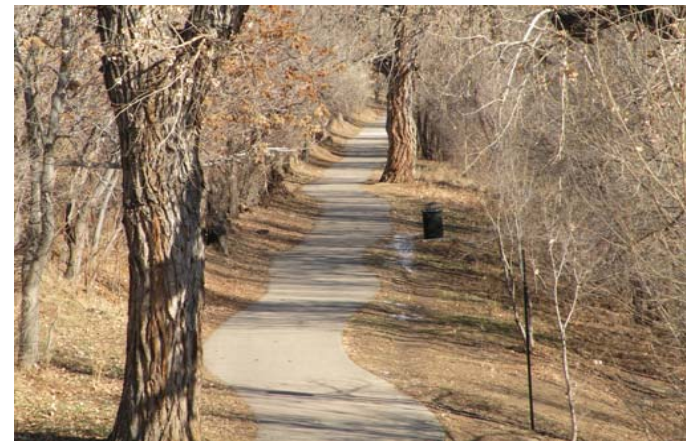
- A. Manufactured slopes within the Path Corridor should not exceed 3:1 gradient and should vary to allow transition to adjacent slopes. Avoid long, continuous manufactured slopes with hard edges and provide smooth transitions. All slopes are to be appropriately stabilized and re-vegetated with native plants found in the immediate vicinity.
- B. When rip-rap is required, it should be native stone or similar in color to native stone.
- C. All drain pipes in this area shall be not visible from the river pathway.
- D. Headwalls should be as small as possible and match existing soil color.



Example of manufactured slope and native planting between path and river at approximately 3:1 slope



River Corridor Area Section



Example of a smooth transition at top of slope

### **4.3.2.3 Storm Water Drainage and Water Quality Design**

Development within the River Corridor Area should implement the requirements of the City's Storm Water Standards Manual and the San Diego River Watershed Management Plan. In addition, all projects should include innovative approaches to storm water drainage and water quality management that incorporates the design principles of sustainable development. These design principles include:

- A. Source control best management practices that are designed to reduce the initial contribution of pollutants into a water way, such as implementing educational programs on source control, maintenance practices on source control, and/or integrated pest control management.
- B. A site design best management practice that incorporates permeable surfaces, low water use landscaping, and open spaces which facilitate the reduction of runoff and pollutants.
- C. Treatment control best management practices that maximize pollutant removal from runoff flows in creative systems which provide multiple functions, such as incorporating landscaping filters (bioswales and detention basins) to reduce flow velocities, to filtering runoff to control erosive processes.

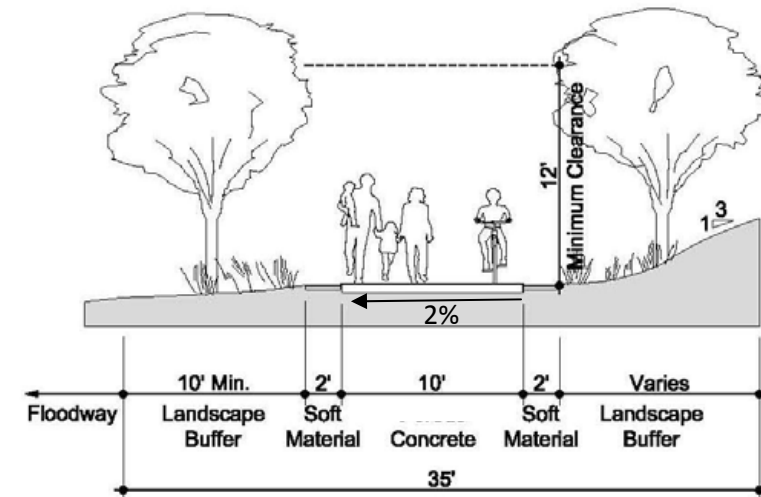
### **4.3.2.4 River Pathway**

The river pathway, a multi-use pathway for bicycle and pedestrian use, shall be located within the 35 foot Path Corridor and it is considered the primary pathway for the entire 17.5 mile River Park from the Pacific Ocean in the Ocean Beach Community to the City of Santee. Where possible, the river pathway should occur on both sides of the river. In cases where site conditions or topography does not allow for the river pathway, a narrower pedestrian trail should be provided. If any part of the River Corridor Area is mapped MHPA or determined to be a wetland buffer area, the river pathway shall be moved just outside of these two areas. In these situations, the outer edge of the river pathway will now become the new boundary for the River Corridor. The river pathway will connect to the existing Mission Trails Regional Park (MTRP) trail system on the west and east boundaries of the park. All trails within MTRP are subject to the MTRP Master Plan requirements.

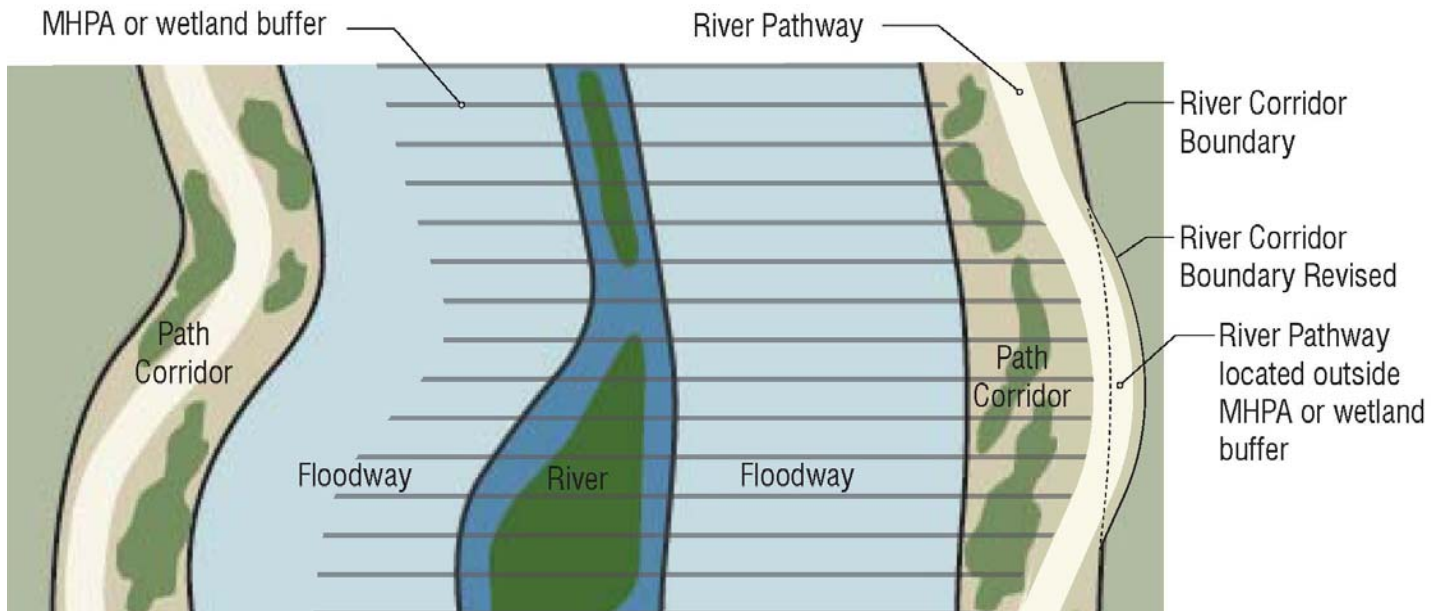
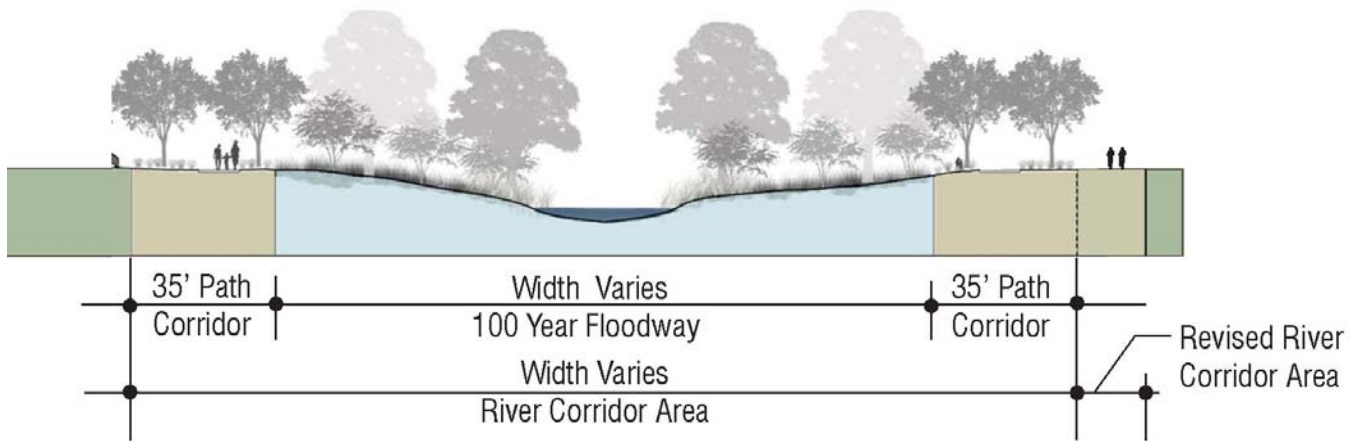
- A. The river pathway shall be 14 foot wide and shall consist of a 10 foot wide concrete, porous concrete material preferred, with a 2 foot wide shoulder area of decomposed granite or similar soft material along each side of the 10' wide river pathway. A 12 foot vertical clearance shall be provided over the 14 foot wide river pathway.
- B. The porous concrete material should be a natural earth brown or tan color and with a texture appropriate for bicycle and pedestrian uses.
- C. The river pathway shall meander, where possible, within the 35 foot Path Corridor. A 10 foot wide minimum landscape area between the edge of the 100 year floodway and the edge of the river pathway shall be provided.
- D. Creative elements such as leaf or animal imprints appropriate to each reach may be included in the river pathway paving material.
- E. The river pathway shall meet ADA guidelines and California Title 24 regulations for accessibility.
- F. The river pathway surfaces should have a cross slope no greater than 2%.



Typical River Pathway with soft surface on both sides



River Pathway Section



River Corridor Area Plan and Section at MHPA on Wetland Buffer Area



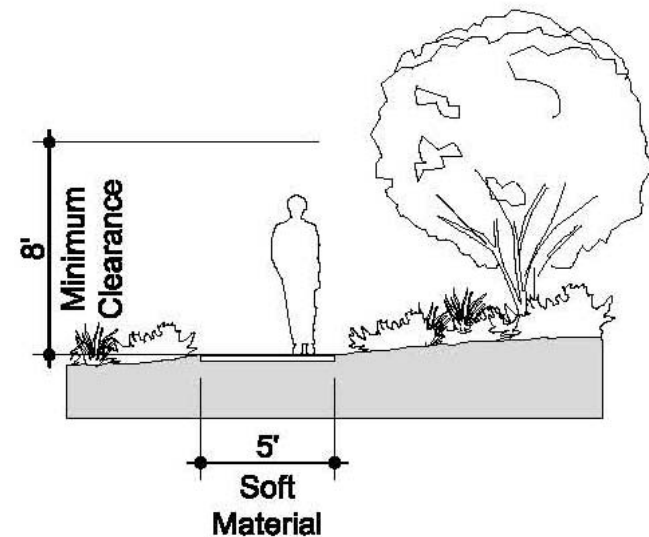
#### 4.3.2.5 Pedestrian Trails

Trails proposed within the River Corridor Area provide a secondary path system for pedestrians to experience the river valley native landscape and habitat. In some areas, trails will provide a river pathway connection where physical constraints do not permit the river pathway to occur. Typically, trails should be confined to existing trail locations to provide the least amount of impact to the wildlife habitat.

- A. Trails should be a maximum of 5 feet wide and have a minimum vertical clearance of 8 feet. Trails within the MHPA shall be 4 feet wide and meet the requirements of the MSCP Subarea Plan, Section 1.4 'Land Use Considerations'.
- B. Trails should be a continuous loop, connecting to the river pathway. No dead-end trails should occur.
- C. Trails should be soft-surface materials, such as decomposed granite (color to be a natural earth brown or tan color) or suitable native soil with a maximum cross slope of 2%.
- D. Trails should have an alignment that responds to natural conditions with minimal grading and disturbance to existing vegetation.
- E. Trails should meander, where possible.



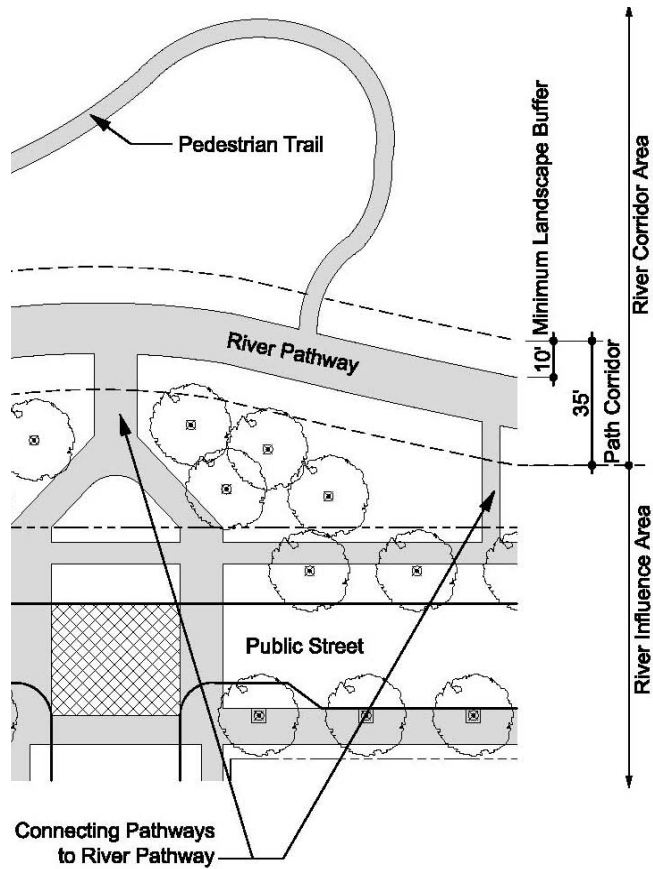
Example of a Pedestrian Trail



Pedestrian Trail Section

### 4.3.2.6 Connecting Pathways

The river pathway and trail system should connect to existing regional trails and public sidewalks on adjacent properties and/or parks. Connecting pathways and trails to the river pathway shall meet the design guidelines noted in section 4.3.2.4 and 4.3.2.5.



Connecting Pathways Diagram



Connecting Pathway

#### 4.3.2.7 Bridges

All new or redeveloped pedestrian bridges should be specially designed to acknowledge and announce the crossing of the San Diego River. Signs should be included to highlight the pedestrian crossings, as well as the San Diego River Park.

- A. Pedestrian/Bicycle-only bridges should be at locations of steep grade crossings, streambeds and in other areas where protection of the water quality and wildlife habitat is needed. The width of bridges should be determined by anticipated use, but should provide a minimum of 10 foot wide area for pedestrians and bicyclists.
- B. Pedestrian/Bicycle-only bridges should be designed to blend into the natural landscape character of the River Corridor Area through the use of natural materials or material that reflects the natural colors of the river valley. Bridges that cross significant habitat or historic view sheds should include a platform to allow for pedestrian viewing without obstructing mobility.
- C. Vehicular/pedestrian/bicyclist bridges should include a sidewalk for pedestrians and where possible a Class 1 bike route in each direction or, at a minimum, on one side of the bridge.
- D. Bridges crossing the River Corridor Area should be designed, where possible, to accommodate the river pathway passing beneath the bridge during typically low water conditions (minimum of 12 feet vertical clearance) with a ramping connection to at-grade crossings to accommodate high water conditions.
- E. Bridge spans shall provide adequate space for both the river and dry land area to accommodate wildlife movement.



Example of a Pedestrian / Bicycle Bridge



Example of a grade separated high and low water level street crossing

#### 4.3.2.8 Boardwalks

Boardwalks provide a stable and creative approach to accessing shorelines and wetland features for Park users of all abilities. Boardwalks can be constructed in several different ways, depending upon the site conditions. The boardwalk structure is typically supported on piers which can be used in wet or even submerged areas. Boardwalks could be installed in lieu of surface paths within sensitive habitat areas; however, no boardwalk elements may be installed in which would impede or obstruct the 100 year floodway.



Example of pedestrian boardwalk within a sensitive habitat

#### 4.3.2.9 Picnic Areas and Overlooks

Picnic areas, cultural and scenic overlooks should be provided along the river pathway within the 35 foot Path Corridor, at locations where habitat or historic views are available, where connections to adjacent communities are accessible, and at a minimum shall be provided at intervals not to exceed one-half mile. These places will function as destinations, rest areas, and places of education and orientation. Interpretive information should be integrated into overlooks and picnic areas.

Picnic areas and overlooks could include a combination of the following:

- Picnic tables on porous concrete material (preferred)
- Trash and recycling receptacles
- Bicycle racks
- Shade structure or shade trees
- Benches and/or seat walls
- Interpretive signs
- Drinking fountains
- Decks



Example of bench at elevated overlook



Example of picnic table at elevated overlook

### **4.3.3 ARCHITECTURE FOR THE RIVER CORRIDOR AREA**

Permanent structures are not allowed in the 100-year Floodway in accordance with the City of San Diego Municipal Code, Chapter 14, Article 3, and Division 1. Within the 35 foot Path Corridor the following permanent structures should be located to provide the following:

- A. Shade structures
- B. Picnic shelters
- C. Interpretive or scenic overlooks

#### **4.3.3.1 General Architecture Material for Structures**

The San Diego River Park Master Plan identifies six reaches within the river valley based on topographic characteristics and river condition. The six reaches comprise four distinct architectural zones, as follows:

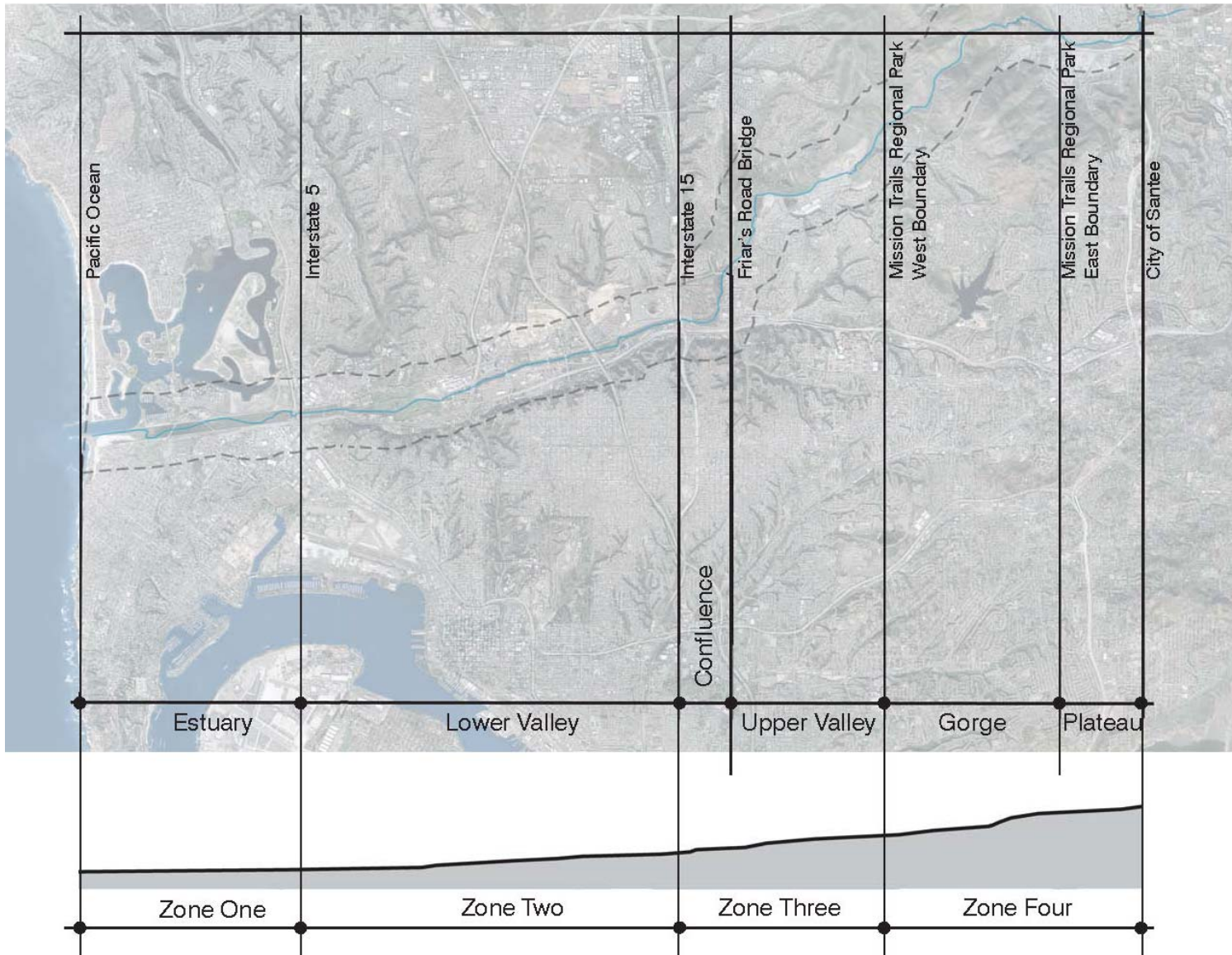
Architectural Zone 1: Estuary

Architectural Zone 2: Lower Valley

Architectural Zone 3: Confluence and Upper Valley

Architectural Zone 4: Gorge and Plateau

General architecture material for structures should reflect the local context and be consistent within each reach. The following descriptions establish the basic architectural approach for each architectural zone.



Architectural Zones and Reach Diagram

### Architectural Zone 1:

#### Estuary (Pacific Ocean to Interstate 5)

Influenced by the sea and ocean activities, shade structures, picnic and overlook shelters should be composed of:

- Columns - Metal tensile technology (preferably stainless steel)
- Shade Structures or Roofs - Fabric panels stretched for shade canopies and roofing

Other materials such as glass, sand, shells and native grasses should be integrated as complementary materials. Walls that are part of shade structures, picnic and overlook shelters should be constructed from precast concrete or cast-in-place concrete walls with integral color that reflects the sand found in the estuary.



Tensile fabric shade structure for Estuary Reach



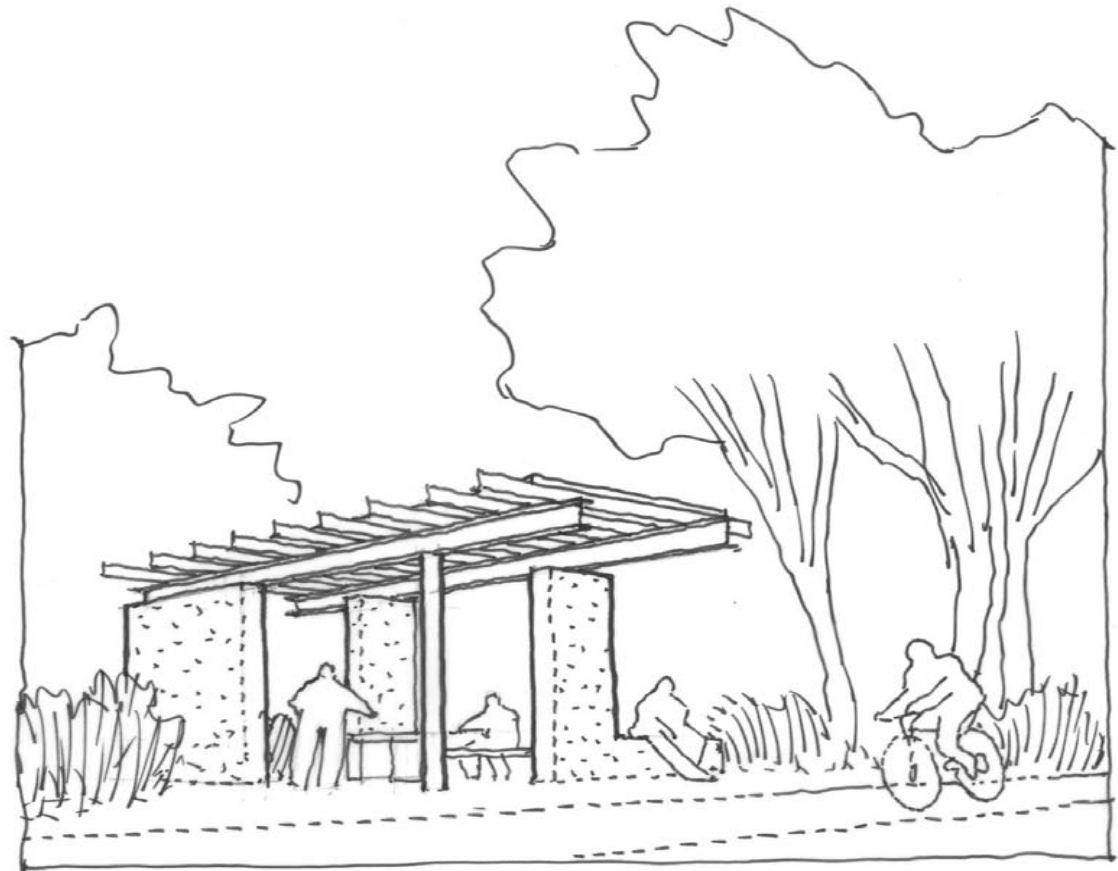
## Architectural Zone 2:

Lower Valley (Interstate 5 through Mission Valley to Interstate 15)

Influenced by the adobe walls and post and beam structure and expressive of traditional Mission Style architecture, shade structures, shelters and pergolas for picnic areas, and interpretive and scenic overlooks should be composed of:

- Columns – Wood concrete and/or adobe
- Shade Structures or Pergolas - Metal and/or wood lattice
- Roofs - Metal or terra cotta tile on flat or sloped roofs

Other materials, such as terra cotta tile and cobblestones should be integrated as complementary materials. Walls that are part of shade structures, picnic and overlook shelters should be clad in hard coat cement stucco over precast concrete, cast-in-place concrete or concrete block. The stucco should be colored in soft white or adobe colors that are similar to the mission walls.



Lower Valley shade structure composed of metal lattice over concrete supports

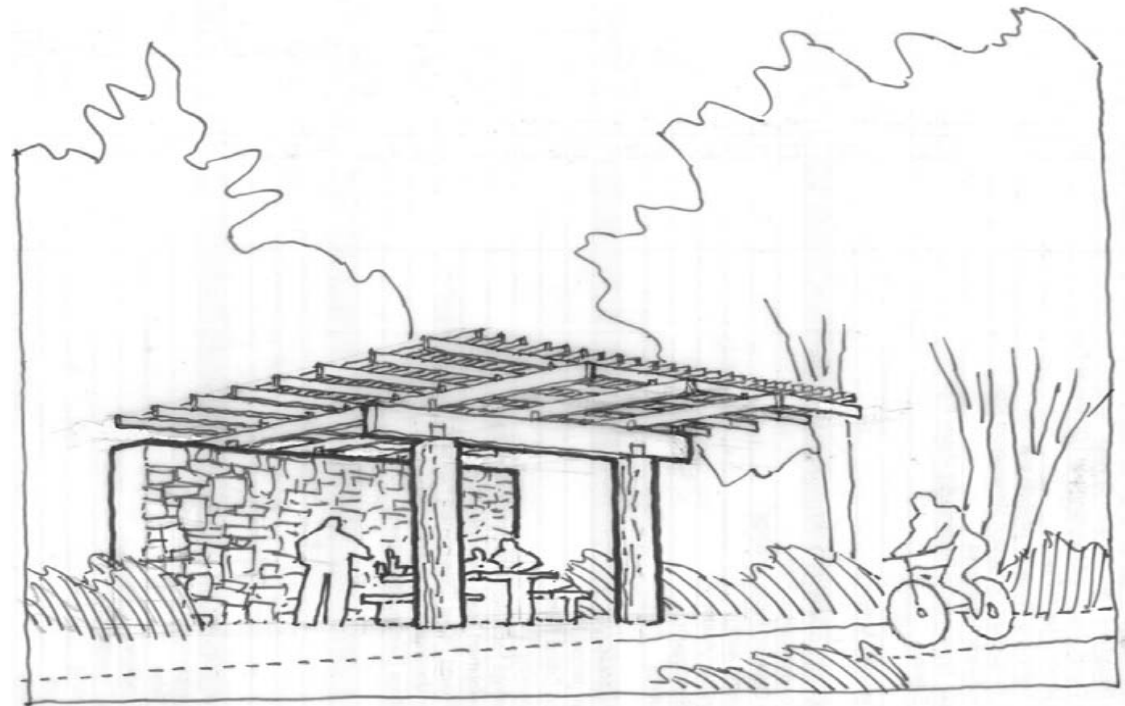
### Architectural Zone 3:

#### Confluence and Upper Valley (Interstate 15 to Mission Trails Regional Park)

Influenced by the cobblestone walls and dams found in the Mission Trails Regional Park, shade structures, shelters and pergolas for picnic areas, and interpretive and scenic overlooks should be composed of: :

- Columns - Native stone and/or wood.
- Shade Structures or Pergolas – Metal or wood lattice
- Walls - Native stone or stone veneer (over precast concrete, cast-in-place concrete, or concrete block colored to match natural colors of the river environment)

Other materials, such as metal and concrete imprinted with upland plants and animals should be integrated as complementary materials.



Confluence/Upper Valley shade structure featuring wood lattice supported by a stone wall and wood columns

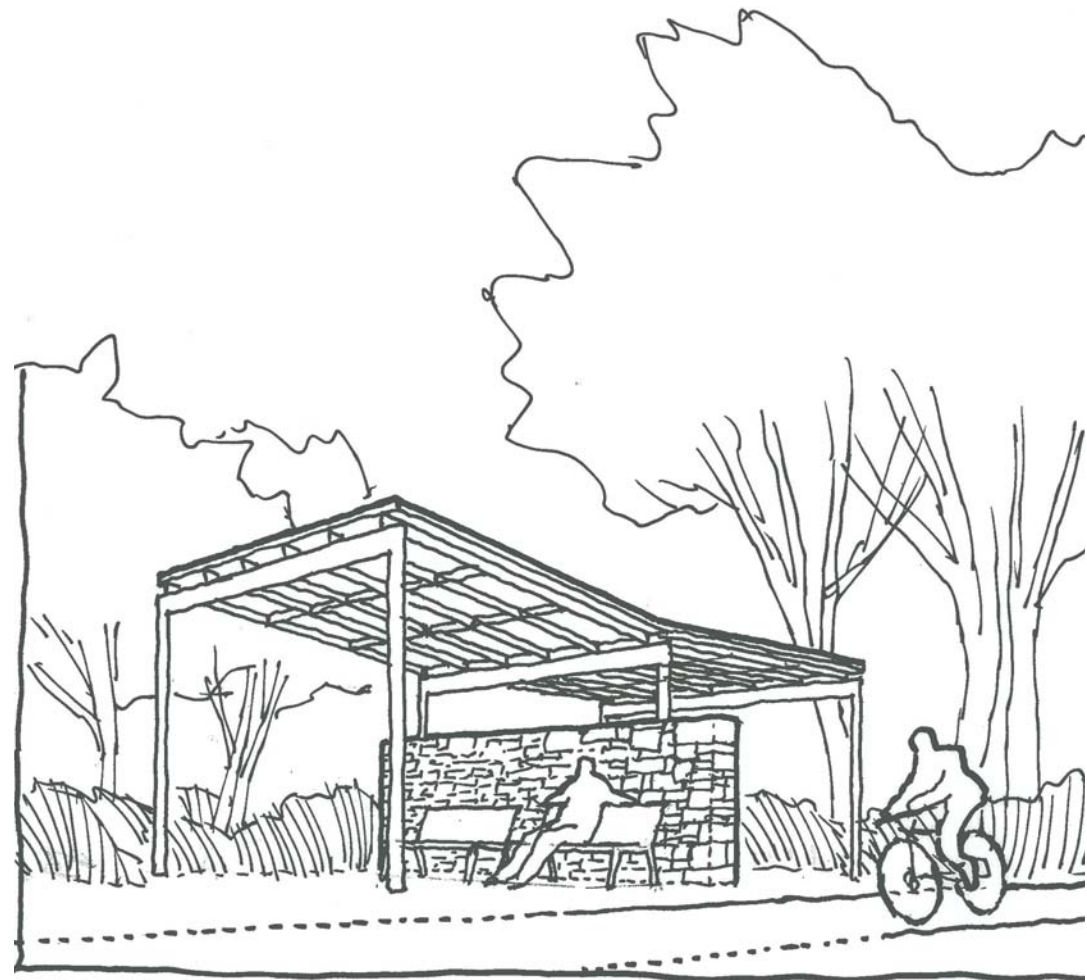
#### Architectural Zone 4:

##### Gorge and Plateau (East of Mission Trails Regional Park to City of Santee)

Influenced by the expansive views, rolling hills and grasslands of Mission Trails Regional Park, structures should be generally low and horizontal, influenced by the character of ranch architecture. Shade structures, shelters and pergolas for picnic areas, and interpretive and scenic overlooks should be composed of:

- Columns - Naturally finished metal and/or wood
- Shade Structures or Pergolas - Galvanized and/or corrugated metal on wood beams and/or wood lattice
- Roofs - Metal or wood flat roofs over wood structure
- Walls - Adobe, stone or concrete block for walls (concrete block walls should have the color and texture of adobe or faced with stone)

Other materials such as cobblestones and concrete imprinted with native grasses should be integrated as complementary materials. Note: All structures in Mission Trails Regional Park shall meet Mission Trails Regional Park Master Plan Design Guidelines.



Gorge/Plateau shade structure featuring low, horizontal wood roof with metal columns

### 4.3.3.2 Placement of Structures

Distribute structures at intervals throughout the River Corridor Area and at locations that offer views, shade or historic interpretation. Locate structures to avoid over-use and crowding in constrained or densely-populated areas. Structures should also be located near points of access to the San Diego River, such as connections to off-site paths, public sidewalks, and parking areas, in order to more easily serve larger groups of people, as well as and people with disabilities.

- A. Place structures so as not to interrupt the flow of users of the river pathway.
- B. Locate structures at views of the river and valley walls, and take advantage of interesting topographic, historic or scenic conditions.
- C. Some structures should be located near public access points, paths and parking areas.
- D. Locate structures for visibility from public streets or the river pathway.
- E. Structures shall be accessible to persons with disabilities in accordance with Americans with Disabilities Act (ADA) Guidelines and California Title 24 regulations.



Example of structure appropriate for Estuary or Lower Valley

### **4.3.3.3 Lighting of Structures**

Light color should provide true color rendering and be energy efficient. Design lights into the architecture of the structure and discourage use of decorative lights. A balance must be achieved between lighting to provide security and the absence of lighting necessary for a functional wildlife habitat. In general, structures should be under-lit rather than over-lit.

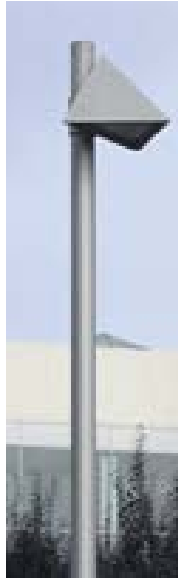
- A. Utilize shielded, full cut off, down cast lights.
- B. Where possible, as a sustainable alternative, utilize solar power.
- C. Lighting must be vandal-proof and easy to maintain.
- D. Lights on structures that are located in the MHPA shall meet the requirements of the MSCP Land Use Adjacency Guidelines.

## **4.3.4 LANDSCAPE ARCHITECTURE FOR THE RIVER CORRIDOR AREA**

### **4.3.4.1 River Pathway Lighting**

Lighting of the river pathway may be necessary in some areas for safety and security. Any lighting located within the River Corridor Area should meet or exceed the City of San Diego Park and Recreation Consultant's Guide to Park Design by providing 0.5 foot candle (fc) of sustained lumination. All lighting along the river pathway should be shielded and directed away from sensitive areas to ensure compliance with the MSCP Subarea Plan, Section 1.4.3, 'Land Use Adjacency Guidelines' and pursuant to the Municipal Code Section 142.0704.

The overall conceptual approach to illuminating the River Corridor Area should be to balance safety and security with nighttime visibility and function through light color selection and reduction of glare. The approach should minimize light pollution ("sky-glow") and light trespass (spillage), particularly into adjacent habitat and residential areas. Where lighting is appropriate, it should be treated consistently throughout the River Corridor Area, in terms of light source, fixture type, and fixture finish and color.



Examples of angular, cut-off down-cast lighting

Examples of solar powered lighting

### Color of the Light Source

Light color should provide true color rendering and be energy efficient. Reaction time and color recognition are considerably higher under white light sources, such as metal halide.

### Standards and Fixtures

A fixture palette that allows lighting to respond to adjacent conditions (urban and naturalized) should be selected for each application. Fixtures should create an unobtrusive appearance that allows the focus to remain on the river, rather than the fixture. Fixtures may be placed on standards designed for each architectural zone, but should coordinate with each other.

Recommended lighting elements are:

- A. Metal or concrete round poles of natural sand or warm grey/brown color
- B. Triangular style fixtures of natural sand or warm grey/brown color
- C. 12 foot mounting height
- D. Lights shall be directional and have shields to avoid spilling into the native habitat
- E. Solar powered lighting should be used, where possible, as a sustainable alternative

Bollard-type light fixtures can present significant problems of glare and lack of cut-off ability and are more susceptible to vandalism, and are strongly discouraged.

#### **4.3.4.2 Site Furnishings**

All site furnishings must be selected in accordance with the City of San Diego's Park and Recreation Consultants Guide to Park Design, meet accessibility guidelines and regulations, and the following guidelines. All furnishings should be durable, comfortable, attractive and securely anchored in place and should have the River Park Logo placed appropriately on the furnishing.

## Benches

- A. Locate benches at overlooks, areas of shade, under shade structures, etc.
- B. Benches should be simple in form, with or without backs, but designed to discourage long term loitering.
- C. Construct benches of concrete or stone that have a natural earth brown or tan color of the river valley.
- D. Offset benches a minimum of 2 feet from the edge of the river pathway, including its shoulders. The offset area may vary in surface materials, but should coordinate with the materials used around it.
- E. Where appropriate, low walls of concrete or stone could be provided at seat height and width in lieu of, or in addition to, benches.



Concrete bench without back



Concrete seat walls located adjacent to multi-use path



Low stone wall used as seating



Concrete bench with back



## Picnic Tables

- A. Locate picnic tables along the river pathway and place perpendicular to the river pathway to reduce vandalism.
- B. Picnic tables should be concrete and have a natural earth brown or tan color.
- C. Offset a minimum of 4 feet from the edge of the river pathway, including its shoulders. The offset area may vary in surface materials, but should coordinate with the materials used around it.

## Drinking Fountains

- A. When locating drinking fountains place within 250 feet of picnic tables or at an entrance to the river pathway from an adjacent public street.
- B. Drinking fountains should be concrete and have a natural earth brown or tan color.



Accessible (high/low) concrete drinking fountain



Example of concrete picnic table



Example of concrete picnic table

### Trash and Recycling Receptacles

- A. Receptacles should be concrete and have a natural earth brown or tan color.
- B. Locate receptacles in close proximity to picnic areas, overlooks, seating areas, path intersections and access points to the river.
- C. Locate receptacles adjacent to the river pathway to allow for maintenance access.
- D. Receptacles should contain hood covers to prevent rummaging by animals.
- E. Trash and recycling receptacles should be located side-by-side.

### Bicycle Racks

- A. Locate bicycle racks near picnic areas, shade structures, overlooks and pedestrian intersections.
- B. Bicycle racks should be galvanized metal.

#### 4.3.4.3 Signs

Three categories of signs have been identified for the River Corridor Area: Information kiosks, Interpretative and Directional. Information kiosks provide location maps and the rules and regulations of the area. Interpretive signs provide educational information about the river's history and its environment. Directional signs provide a location, direction and distance along the river pathway. All signs should be designed to withstand vandalism and damage from graffiti, knife gouging, scratching and acid etching.



Example of galvanized bicycle racks

## Information Kiosks

- A. Locate information kiosks at all river pathway entrances from a public street right-of-way.
- B. Kiosks should be consistent with City of San Diego standard design as used in regional parks and open space areas. (Contact the City of San Diego Park and Recreation Department for the current standard detail.)
- C. Kiosks should include the following information items:
  - River Park Map indicating precise location of kiosk within the park
  - Detailed local area map, depicting precise location of kiosk, location of parking areas, shade shelters, drinking fountains, interpretive and scenic overlook areas, and all other kiosk locations in either direction, with associated distances shown in miles
  - River Park rules and regulations
  - Emergency contact number
  - River Park logo
  - Any other pertinent information, such as seasonal fire warnings



Information kiosk



Example of corridor system map

## Interpretive Signs

- A. Locate interpretive signs along the river pathway at strategic locations to educate users on significant river park features.
- B. Design interpretive signs to be durable and artistically unique to convey the information.
- C. Materials for sign frames should include galvanized metal posts with durable panels that will not sun-fade and include the River Park Logo. Sign frames should be simple in design to not distract from the significant features being interpreted.
- D. Information and education should be provided on the following topics:
  - Geography and Geology
  - Cultural and Historical Resources
  - Ecology
  - Restoration
  - Native Plant and Wildlife



Examples of interpretive signs at scenic overlooks

## Directional Signs

- A. Locate directional signs at all points of access and decision, including intersections and street crossings.
- B. Use consistent graphics, symbols, and detail of information for directional signs.
- C. Directional signs should be a consistent size and mounting height.
- D. Directional signs should contain the River Park Logo.



Example of San Diego River Park bike path directional signage



Example of San Diego bike path directional signage

#### 4.3.4.4 San Diego River Park Logo

The San Diego River Park logo is consistent with the river graphic established by the San Diego River Park Foundation and is to be used with the permission of the San Diego River Park Foundation. It shall not be modified in form, but may be modified in material and size. It shall not be used for commercial purposes without written permission from the San Diego River Park Foundation. Artwork for the logo can be obtained from the City of San Diego Park and Recreation Department.

All signs in the River Corridor Area should contain the River Park Logo (refer to Image). Large signs, such as information kiosks and interpretive signs, should provide the full spelling of 'San Diego River Park'. Smaller signs, such as directional signs, may use the logo and the abbreviated spelling of the River Park as 'SDRP'.

All site furniture in the River Corridor Area should contain the River Park Logo. The River Park Logo should be stamped into concrete benches, picnic tables, drinking fountains, and trash and recycling receptacles.



San Diego River Park Logo

#### 4.3.4.5 Vandalism Prevention

All amenities within the River Corridor should be designed or selected to discourage vandalism. All building walls, site walls, concrete site furnishings, and light standards shall be treated with a non-sacrificial (products that do not wash off when maintained) anti-graffiti material. Application specifications shall be per the manufacturer. In addition, graffiti can also be prevented by planting vines and shrubs to cover walls and other areas that might be vandalized.

Various design measures can be employed to discourage vandalism from skateboarding, including the following:

- Roughen pavement surfaces in front of benches, low walls, steps and railings.
- Use pavement cut-outs instead of low planter walls for trees or provide walls with varying height differentials.
- Provide a rough shape to the edges of bench tops, low walls and planter walls for trees.
- Design benches and seating walls with height differentials, arm rests, or seat dividers on the top surface.
- Install circular picnic tables and curved benches instead of rectangular or straight tables or benches.

#### 4.3.4.6 Fences

Fences should only be used in locations to protect sensitive habitat and historic resources. When fences are required, they should be placed on the 100-year Floodway boundary or a minimum 5 feet from the river pathway or trail, where possible. In such areas, fences should preserve views, but discourage passage.

Use natural peeler log fencing for all fences within the River Corridor Area. Fencing shall follow grades along the river pathway and be a maximum of 4 feet in height. Chain link fencing is prohibited within the River Corridor Area to allow for habitat crossings.



Peeler log wood fence

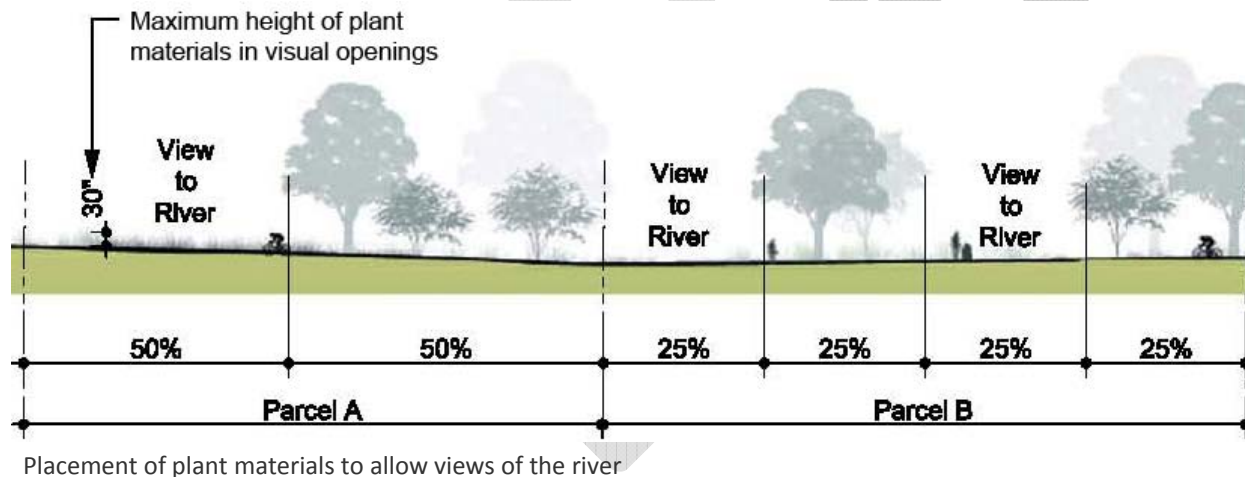
#### 4.3.4.7 Plant Material

Use native trees, shrubs, grasses and perennial plants appropriate to the specific microclimatic, soil and moisture conditions of each river reach within the River Corridor Area. Plant species should be grouped according to plant communities appropriate to the location. Remove all invasive, non-native species and replace with native plant materials.

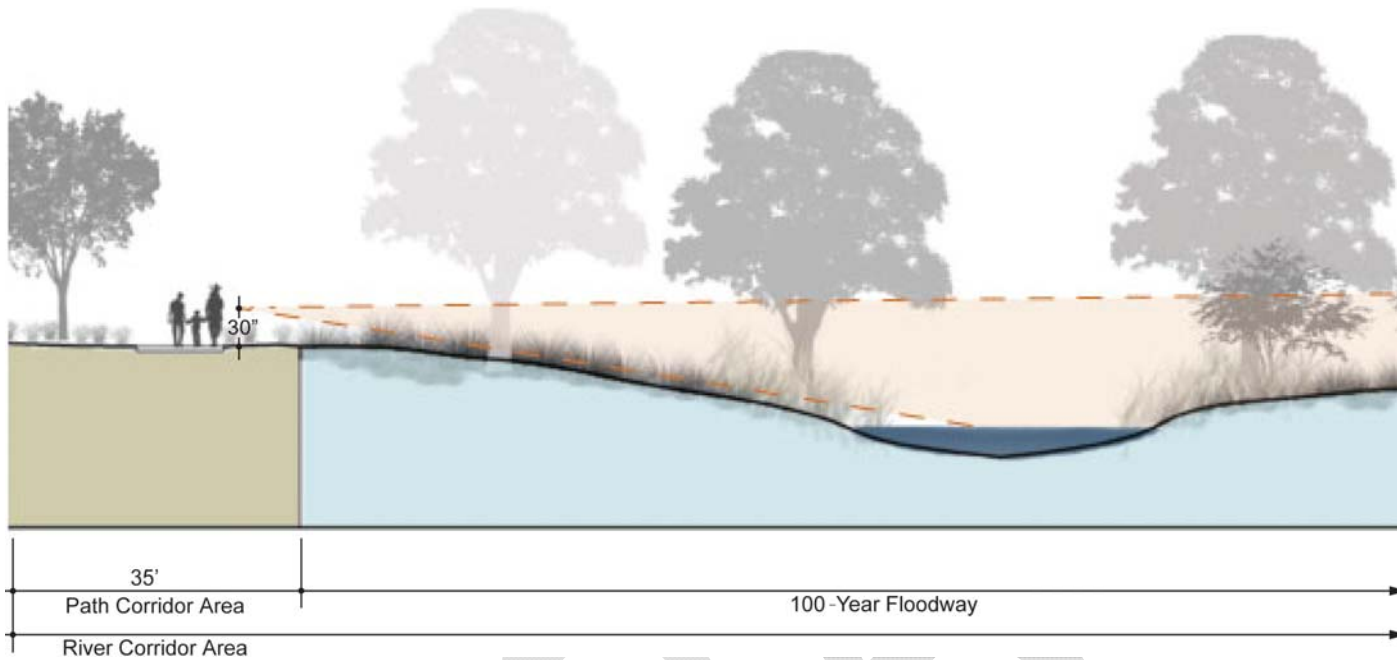
##### Plant Placement and Views

Plant placement within the River Corridor Area should preserve and enhance views of the river and the river pathway. Also, place plants to preserve and enhance views from public streets that cross the river and passive recreation areas. Plant placement should not compromise the safety and security of the river pathway users.

To enhance visibility at pedestrian levels along the river pathway, plant materials in the river corridor areas shall consist primarily of tall canopy trees and low growing shrubs, with limited use of smaller multi-stem tree species on the non-river side of the pathway. Plant material shall be selected and located so that visual openings with views to the river are provided along at least 50% of the river frontage on each parcel. Plants material within the visual opening shall be naturally low growing with a maximum mature height of 30 inches.







Section at River Corridor Area depicting views to the river

### Plant Transition and Pattern

Plant species selection, variety and pattern should establish a transition in character from the naturalistic quality of the floodway through the Path Corridor to the adjacent River Influence Area.

Within the 100-year Floodway, locate canopy trees to provide some shade to the river. Plant patterns should be naturalistic and informal.

Within the 35 foot Path Corridor, plant patterns should support views, uses, provide shade and define spaces. Visibility and safety should also be a primary concern.

Non-native turf grasses are not acceptable in the River Corridor Area except where neighborhood or community type public parks occur. Public parks may extend non-native turf areas to the non-river side of the river pathway. Drainage of these turf areas shall be contained within the public park and shall not flow over the river pathway into the river.

#### 4.3.4.8 Public Art Opportunities

Public art has a role in bringing life and identity to the River Corridor Area. The diversity of culture, history and biology in the San Diego Region and, specifically along the San Diego River, offers the opportunity to engage the public to celebrate and experience the river through artistic expression.

Integrate public art with local cultural and natural systems. Public art should interpret the river and its ecosystems and build upon and emphasize the unique circumstances along the length of the river. Also integrate public art into functional elements within the River Corridor Area, such as site furnishings, structures and signage, consistent with the criteria in these design guidelines. Design public art to be resistant to vandalism and easy to repair if it is damaged.



Examples of parks extending non-native turf to non-river side of multi-use path Denver, CO

#### **4.3.4.9 River Pathway and Trail Safety**

The river pathway and pedestrian trail development in the River Corridor Area should specifically address issues of safety and crime prevention through the following design considerations:

- A. Place removable steel bollards at strategic access points along the river pathway to prevent vehicular access and yet allow access for emergency and maintenance vehicles.
- B. Locate safety call boxes where appropriate.
- C. Install information kiosks at each entrance or street crossing showing users where they are in the river valley.
- D. Directional signs, such as trail markers, should be provided along the river pathway to direct users, especially in areas where following the trail may be difficult.
- E. Lighting should be provided at appropriate areas to provide proper surveillance of river pathway access points and picnic areas.

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## Crime Prevention through Environmental Design

Crime Prevention through Environmental Design (CPTED) is the practice of designing sites, buildings and public spaces with the goal of reducing crime, alleviating the fear of crime and improving quality of life. CPTED is based upon the concept of defensible space, developed by the architect Oscar Newman. According to this concept, all space is defended by the people who use it. If a space is defended by legitimate users, it is protected against crime; if a space is defended by illegitimate users, it cannot be used for its intended purpose. The premise of CPTED is that crime and misbehavior can be controlled by designing a space to encourage legitimate use, and discourage illegitimate use. Today, CPTED principles are employed by planners, designers and law enforcement officers to prevent crime. Designers can consider the following guiding principles to incorporate CPTED into a site design:

- A. Natural Surveillance - Encourage legitimate activity and provide visual access to spaces, in order to increase the number of people using, watching and caring about the place.
- B. Territory Reinforcement - Ensure that the transitions between private and public space are visible, so that people have an appropriate perception of how spaces are meant to be used.
- C. Access Control - Clearly communicate where people are allowed and not allowed to be to prevent illegitimate use of space.
- D. Maintenance - Ensure that development is designed in a way that reduces maintenance needs after construction. Poorly maintained spaces send a signal that the community is willing to tolerate negative activities in these spaces.
- E. Appropriate Use - Utilize design rails and decorative ledges to discourage skateboard use of seating walls. Avoid blank walls that can provide a blank surface for graffiti.

## 4.4 RIVER INFLUENCE AREA

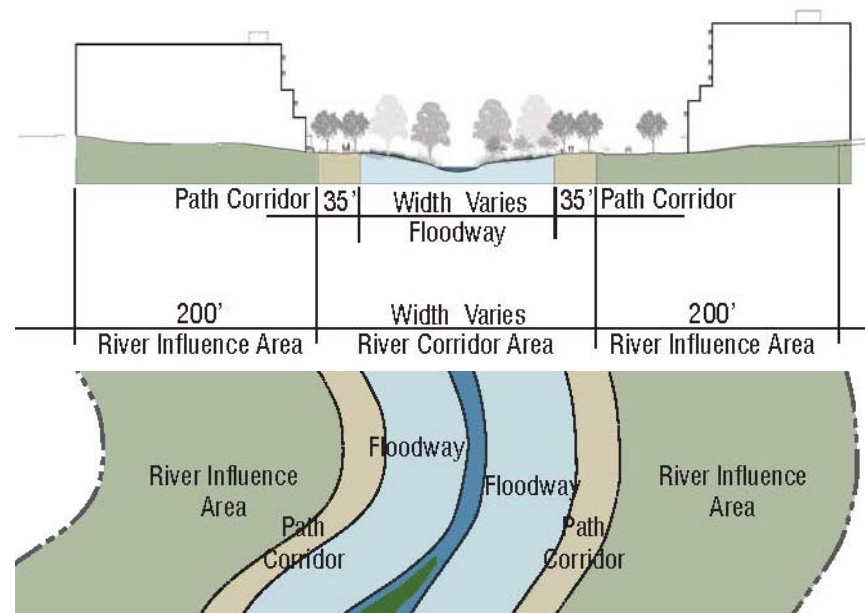
### 4.4.1 PURPOSE AND DEFINITIONS

#### 4.4.1.1 Purpose

The purpose of the River Influence Area is to create a quality backdrop to the River Corridor Area through design that; treats the river as an amenity; orientates development toward the river; encourages mixed-use development, includes active uses along the river pathway and public access to the river.

#### 4.4.1.2 Definition and Boundaries

The River Influence Area is defined as the 200' wide area abutting the River Corridor Area on both sides of the river.



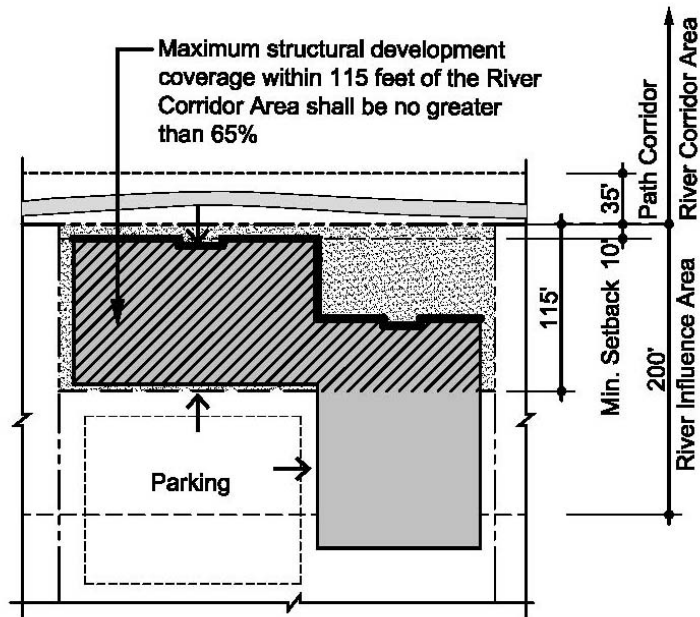
Plan and Section of River Corridor and River Influence Areas

### 4.4.2 SITE PLANNING FOR THE RIVER INFLUENCE AREA

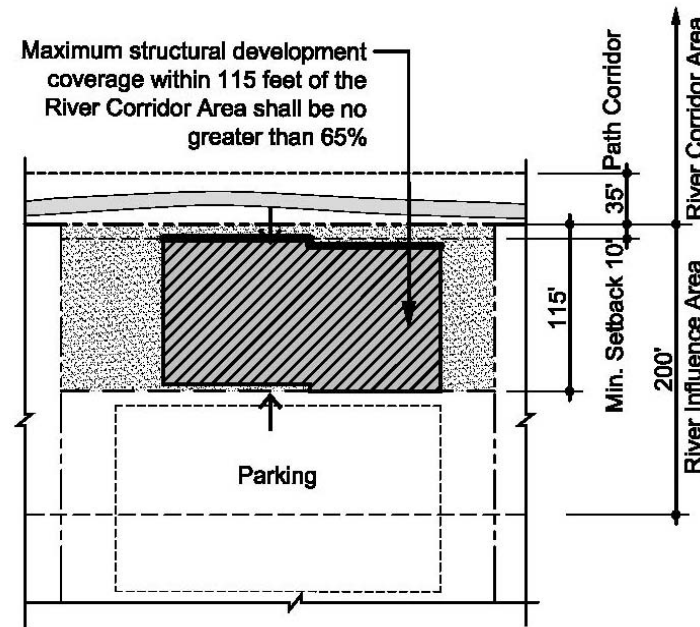
Development within the River Influence Area should be oriented to engage the river, taking advantage of the river environment as a park amenity while simultaneously providing informal oversight of the river park. In addition, development should define the edge and boundary of the River Corridor Area to reinforce and/or establish the corridor identity and image. Structures should be located and shaped in a manner that opens up views to the river from nearby districts, neighborhoods and hillsides and a structure's location and shape on the site should create a spatial transition to the river. The active uses of a structure should be focused toward the river and inactive, 'back-of-house' and service uses should be directed away from the river.

#### 4.4.2.1 Maximum Structural Development Coverage

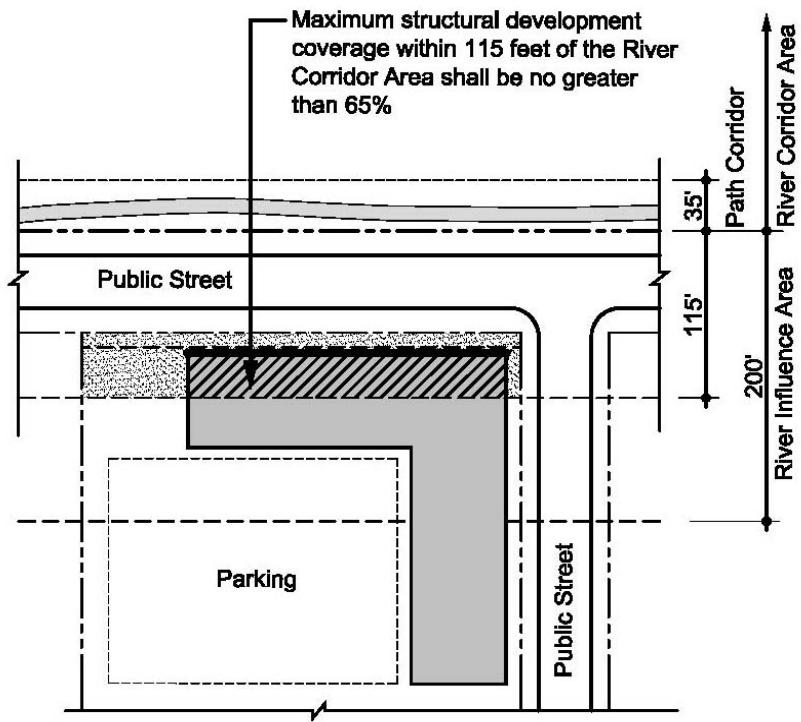
The maximum structural development coverage of a parcel within 115 feet of the River Corridor Area shall be 65%. This maximum structural development coverage is an existing requirement of the Mission Valley Planned District Ordinance and therefore only applies to the Mission Valley Planned District area; all other areas along the river are per the community plan or the underlying zone.



Maximum structural development coverage depicting property adjacent to the River Corridor with open space/or plaza adjacent to the river pathway



Maximum structural development coverage depicting property adjacent to the River Corridor with open space evenly distributed on either side of the building



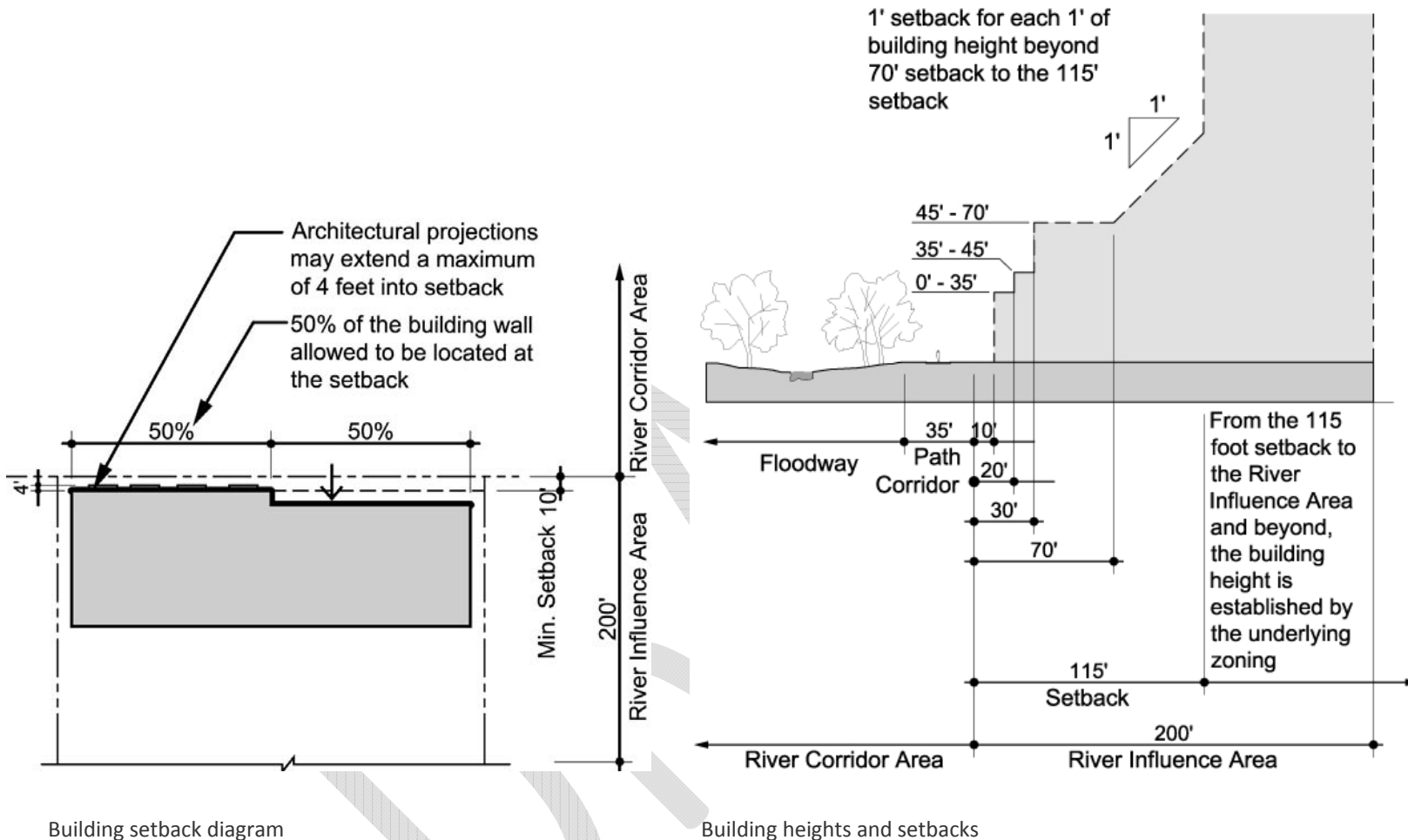
Maximum structural development coverage depicting property located at street adjacent to the River Corridor Area

#### **4.4.2.2 Building Heights and Setbacks**

Buildings on lots adjacent to the River Corridor Area shall adhere to the following setback requirements unless the base zone is more restrictive. Building heights shall be measured according to Municipal Code.

- A. A minimum 10' setback is required for buildings up to 35 feet in height. A maximum of 50% of the building wall may be located at the setback. The remaining building wall shall be per the Offsetting Planes and Façade Variation Requirements of the Municipal Code. Architectural projections such as eave, cornice, eyebrow, trellises, bay windows, fireplace, entry roof, entry arbors, balconies, and bay windows may extend a maximum of 4 feet into the 10 foot setback and shall not be closer than 6 feet to the River Corridor Area.
- B. A minimum 20 foot setback is required for buildings between 35 feet to 45 feet in height.
- C. A minimum 30 foot setback is required for buildings between 45 feet to 70 feet in height.
- D. At 70 foot setback, the maximum building height allowed shall not exceed 1 foot of setback per each 1 foot of building height (45 degrees).
- E. At a minimum 115 feet setback, building heights shall be determined by the underlying zone.
- F. Where River Influence Area and street setbacks overlap, the setback requirements of the River Influence Area shall apply.



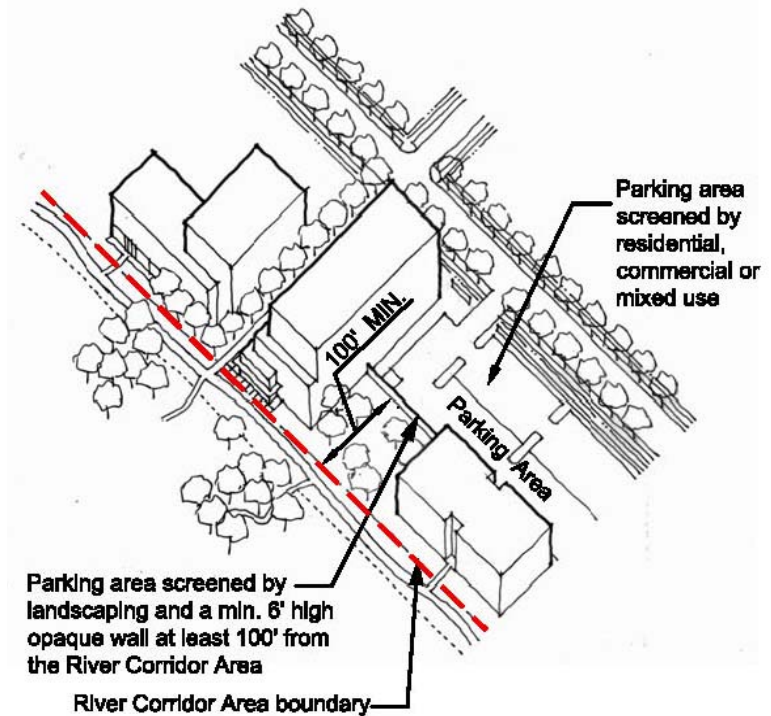


#### 4.4.2.3 Exterior Equipment Enclosures, Outdoor Storage, Loading Areas and Refuse Collection Areas

Such areas and enclosures, including utility and mechanical equipment, shall be located a minimum of 100 feet from the River Corridor Area and screened by landscaping and an opaque wall at least 6 feet high, or 1 foot higher than the item to be screened if item exceeds 6 feet in height. Opaque walls shall be designed and composed of materials of the same quality as the primary building façade.

#### 4.4.2.4 Off-Street Surface Parking

Off-street surface parking shall not be visible from the River Corridor Area. Parking areas should be screened with permitted residential commercial and/or mixed use structures. Alternatively, off-street surface parking shall be located a minimum of 100 feet from the River Corridor Area and screened by landscaping and an opaque wall at least 6 feet high, or 1 foot higher than the item to be screened if item exceeds 6 feet in height. Opaque walls shall be designed and composed of materials of the same quality as the primary building façade. No curb cuts and driveways shall be located between the building walls and the River Corridor Area except where a public street is located between the building and the River Corridor Area.



Off-street surface parking screened from River Corridor Area

#### **4.4.2.5 Parking Structures**

Façades of parking structures that face the River Corridor Area shall be developed with permitted residential, commercial and/or mixed use structures for the full height and width of the parking structure.

#### **4.4.2.6 Site and Parking Lot Lighting**

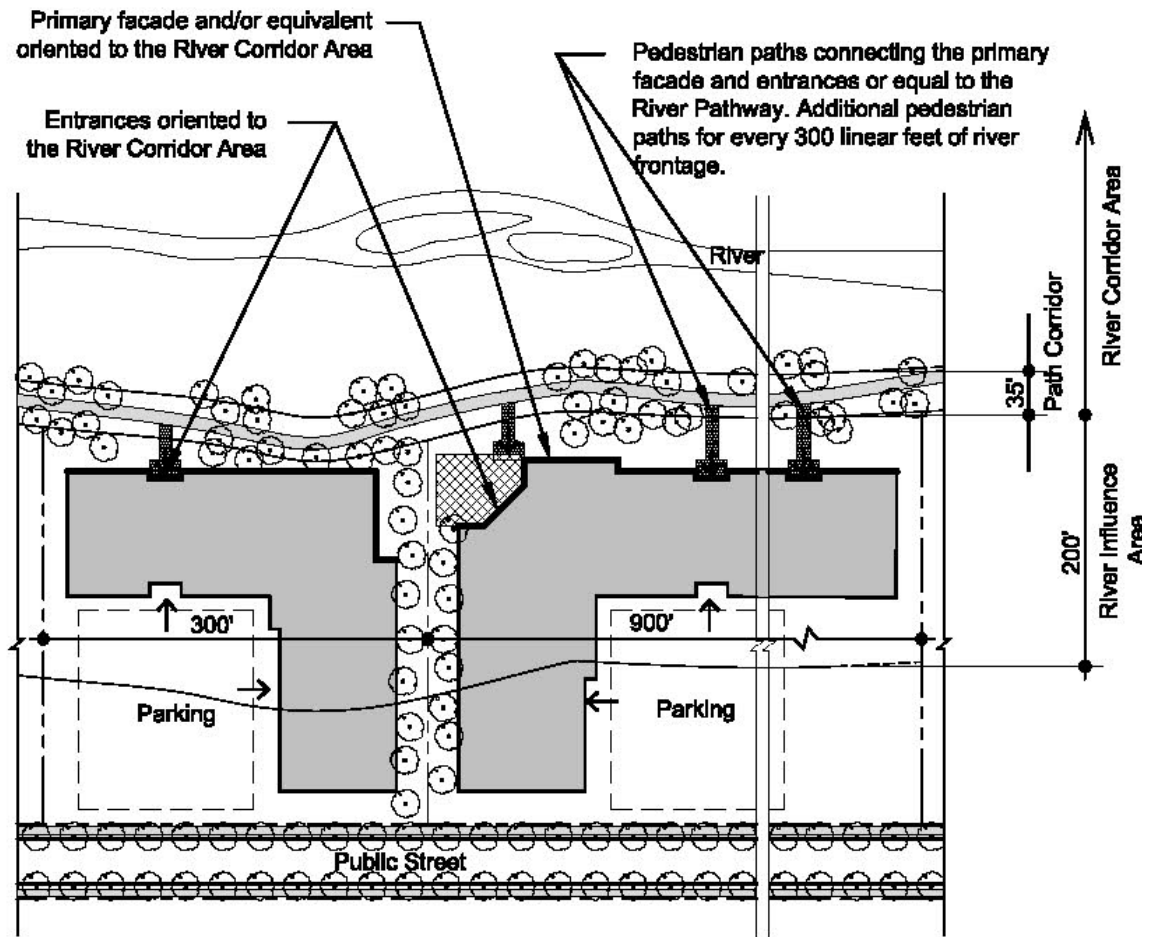
Site and parking lot lighting within 100' of the River Corridor Area shall be provided by full cut-off luminaries designed to incorporate elements to reduce glare such as translucent, obscure or refracting lenses, low wattage light sources or shielding devices. Through the use of lighting design and shielding devices internal to the luminaire, there shall be no light spillage into the River Corridor Area and lighting should be directed away from sensitive areas to ensure compliance with the MSCP/MHPA Land Use Adjacency Guidelines.

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#### 4.4.2.7 Building Façade, Entrance and Access Adjacent to the River Corridor Area

Development that abuts the River Corridor Area shall provide the following:

- A. Buildings structures shall orient a primary facade and entrance or its equal in design and materials to the River Corridor Area.
- B. A pedestrian path from the river side of the building to the river pathway shall be provided. Additional pedestrian paths shall be provided for every additional 300 linear feet of river frontage measured along the property line.
- C. The pedestrian path shall be designed utilizing the same materials as the primary entrance.

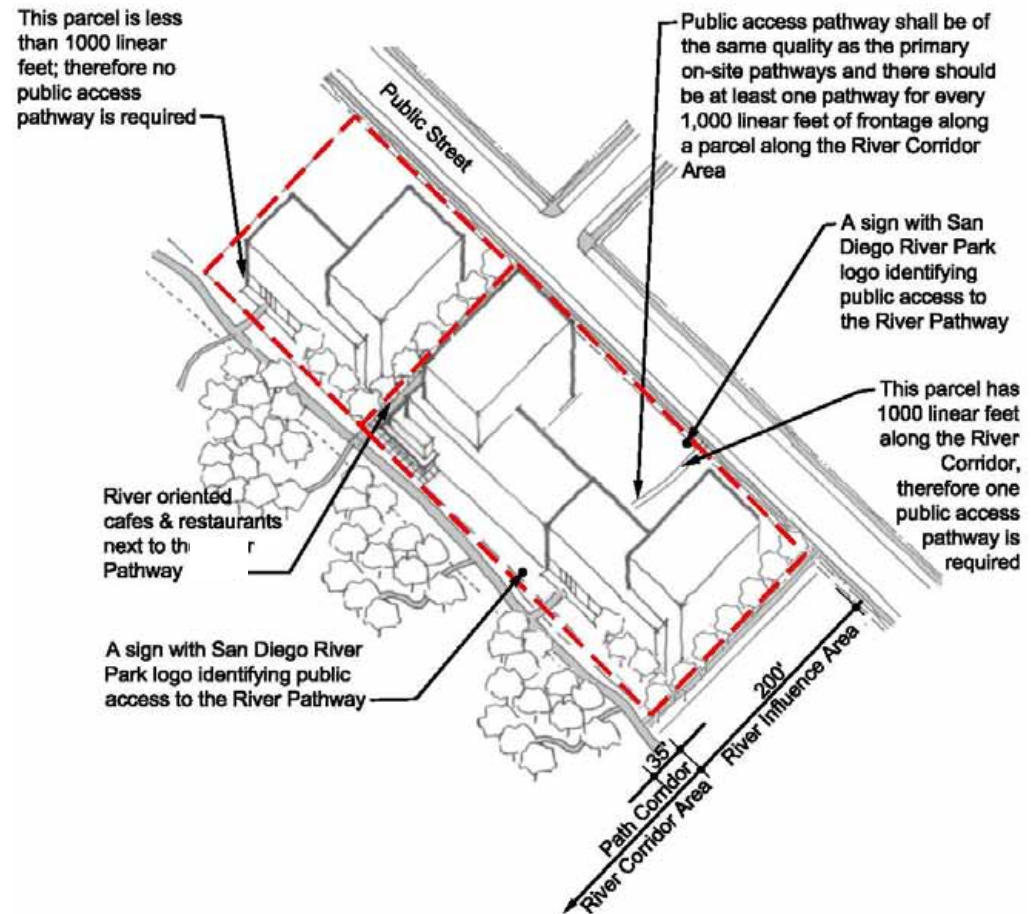


Building Façade entrance and access adjacent to the River Corridor Area

#### 4.4.2.8 Public Access Pathway Across Development

Development that abuts the River Corridor Area shall provide public pedestrian access pathways connecting the public street and the river pathway consistent with the following:

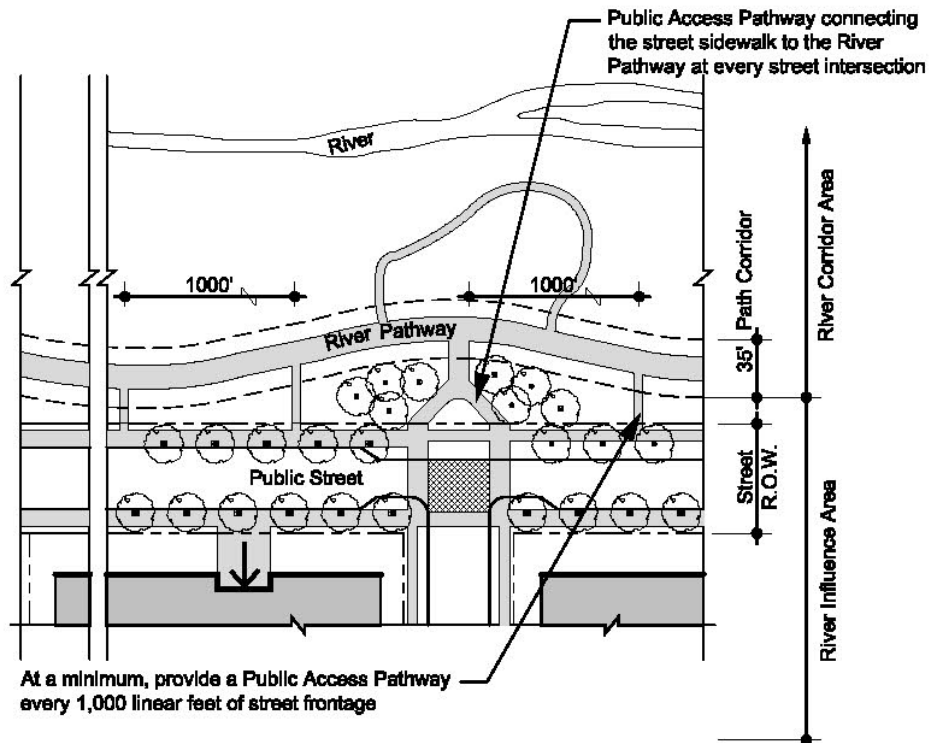
- A. At least one public pedestrian pathway for every 1,000 linear feet of frontage along the River Corridor Area per parcel.
- B. The public access pathway shall be part of the overall design of the site and a feature within the landscape design. This pathway shall be the same design and materials as the primary on-site pathways.
- C. Signage, identifying public access to the river pathway shall be located at the intersections of the public access pathway and the street right-of-way, and the public access pathway and the River Corridor Areas. The public access pathway sign shall be at a minimum made of aluminum, sized no smaller than 18 inches by 24 inches. The sign shall be mounted on a metal pole at least 4 feet above finish grade and include the San Diego River Park Logo and these words: 'Public Access Pathway to the San Diego River'. Size of letters shall meet ADA guidelines.



Public Access Pathway across Development

#### 4.4.2.9 Public Access Pathway from Streets that Abut and/or Parallel the River Corridor Area

Public access pathways shall connect the street right-of-way to the river pathway at every street intersection and, at a minimum, provide a connection every 1,000 linear feet of frontage along the River Corridor Area.



Public Access Pathway to the river from streets that abut and/or parallel the River Corridor Area

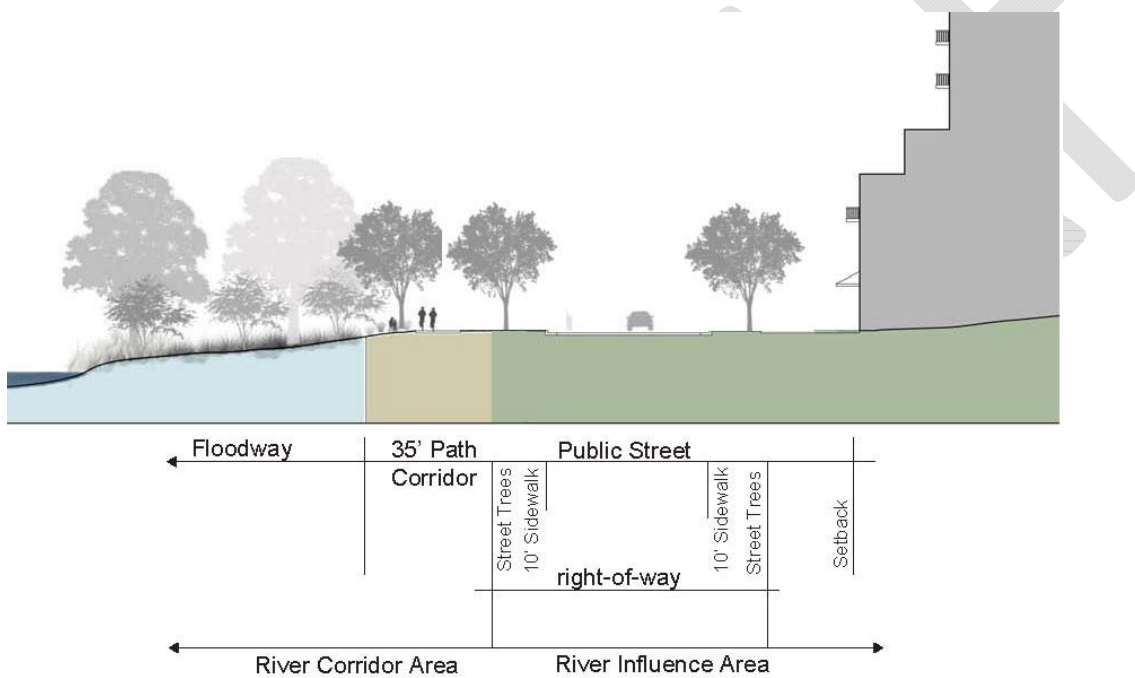


Examples of public access pathway connecting to the River Pathway across private development

#### 4.4.2.10 Streets that Abut and/or Parallel the River Corridor Area

Public streets should be located adjacent to the river wherever possible. This allows building activities and main entrances to naturally orient themselves towards the river. The street creates ample public access points and views to the River Corridor Area and eliminates the necessity for long lengths of fencing along private property.

- A. Streets shall be no wider than necessary to provide for auto, fire and police vehicle access to the River Corridor Area and adjacent development per the City’s Street Design Manual of the Land Development Manual.
- B. Curb cuts and driveways shall be minimized.
- C. The use of common and joint use driveways should be considered, where possible.
- D. Where on-street parking is allowed along the river side of the street, parking shall be provided in parking bays or clusters to allow for views of the river.



Street section parallel to the River Corridor Area

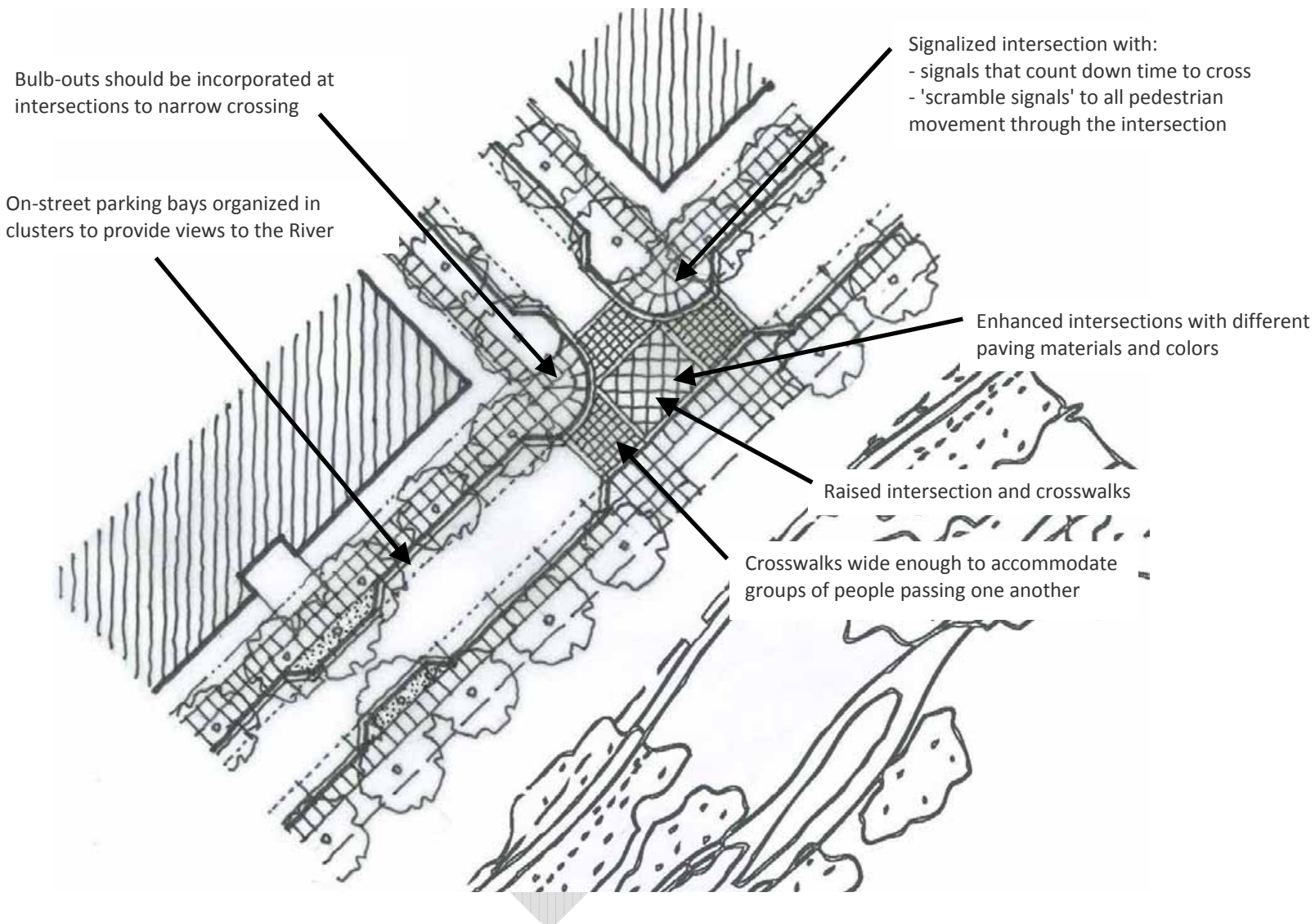
#### **4.4.2.11 Street Intersections Adjacent to the River Corridor Area**

Street intersections adjacent to the River Corridor Area should be designed in a manner to establish a clear pedestrian priority in the street. The following should be considered:

- A. Crosswalks should be of a different paving material and color than the street.
- B. Crosswalks should be wide enough to accommodate groups of people passing one another.
- C. Bulb-outs should be incorporated at intersections to narrow crossing width and to provide traffic calming.
- D. Crosswalks should have signals that count down time to cross.
- E. Intersections should be designed with 'scramble signals' to allow for all pedestrian movement through the intersection.
- F. Intersections and crosswalks should be raised above street level to match the level of the connecting public sidewalk to provide traffic calming.

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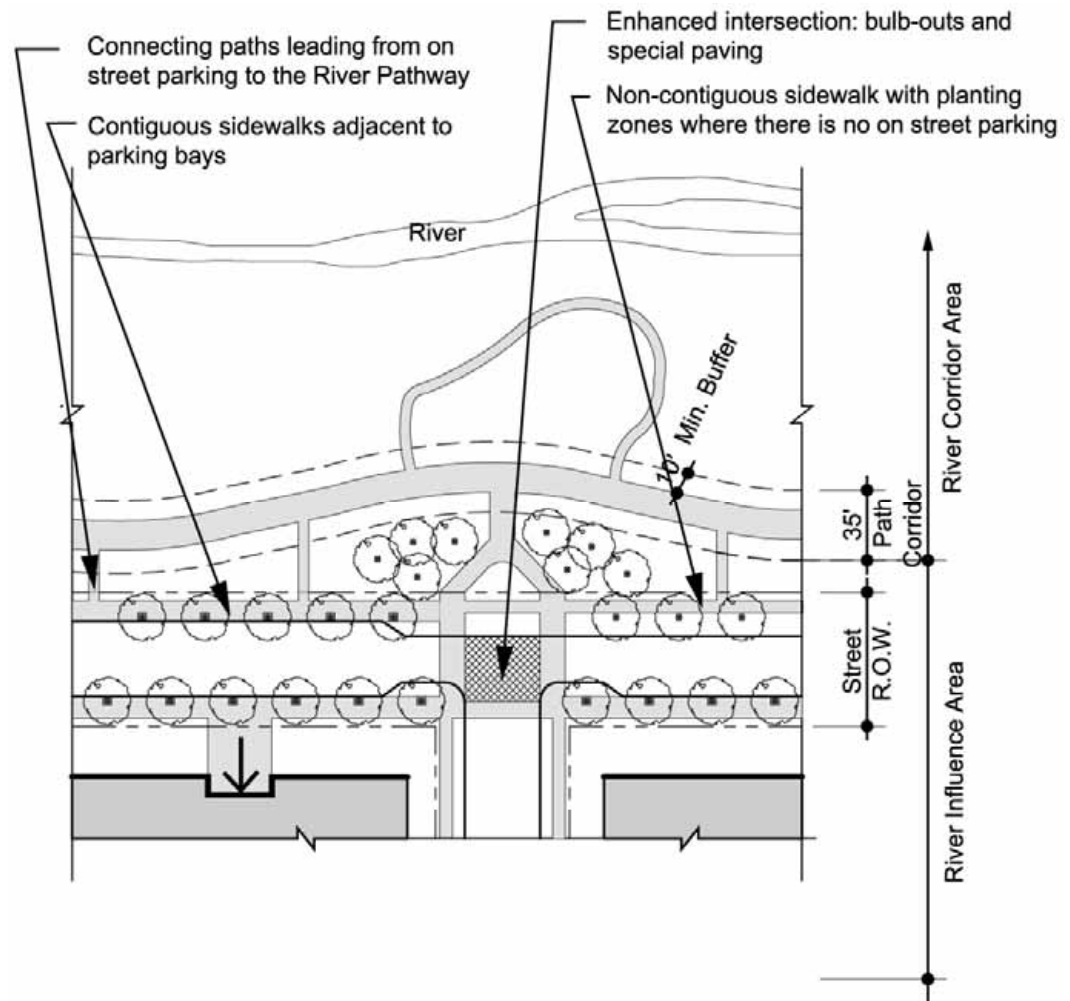




Intersections Adjacent to the River Corridor Area

**4.4.2.12 Location of Public Sidewalks Parallel to River Corridor Area**

- A. Provide non-contiguous public sidewalks where there is no on-street parking.
- B. Provide contiguous public sidewalks where there is on-street parking or parking bays to function as an access point from the vehicles to connecting paths to the river pathway.



Location of public sidewalks parallel to the River Corridor Area

### 4.4.3 ARCHITECTURE FOR THE RIVER INFLUENCE AREA

The purpose of the architectural guidelines is to reinforce the vision of the river park as a community amenity by promoting quality architectural design, detailing and building materials within the River Influence Area.

#### 4.4.3.1 Building Massing

The appearance of bulky building structures shall be minimized to produce the impression of an aggregate of parts rather than a single building mass. Above 45 feet in height, buildings shall orient the narrow side of the building façade parallel to the river and the wider side of the building perpendicular to the river. Buildings shall be designed to create visual interest by varying form and façade and avoiding repetition and monotonous, block-like visual impact. Building levels and planes should vary to create visual interest and to help define view corridors.

#### 4.4.3.2 Variety and Human Scale

Interest, variety and human scale should be exhibited within building façades that face the River Corridor Area. Such variety is achieved by changes in building or roof form, recesses or extensions of the façade form, window and curtain wall patterns, shading devices, balconies, material changes, color variation, and surface pattern and texture changes.



Examples of variety and human scales



Example of varying building form, massing and façade treatment

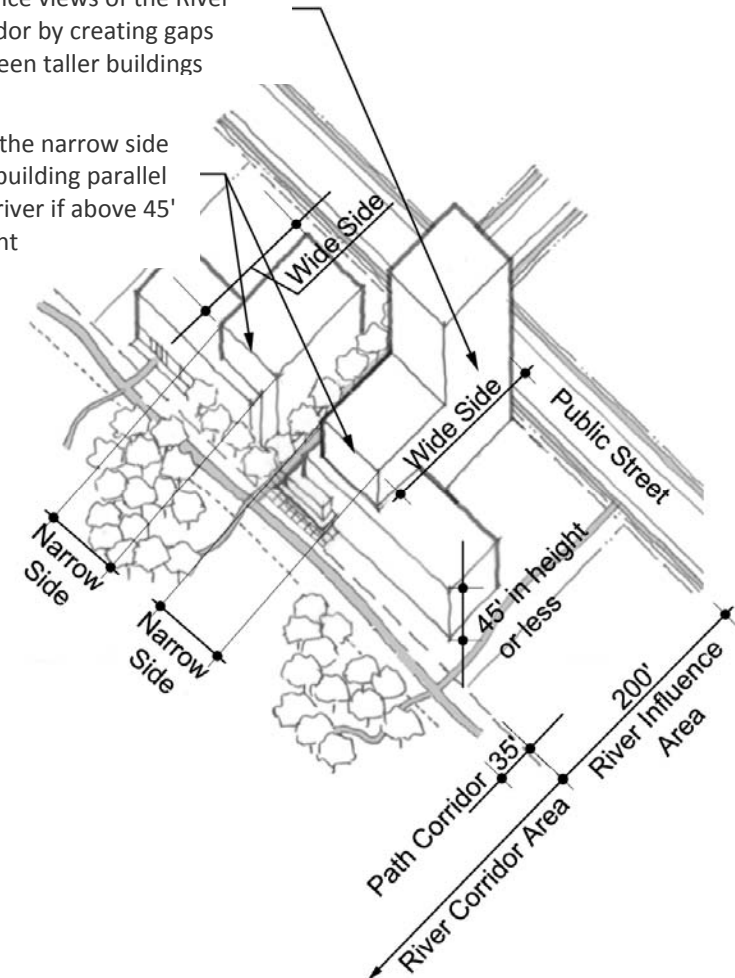
### 4.4.3.3 Quality of Materials

High quality and durable materials should be selected for all building façades that can be viewed from the River Corridor Area, face streets that lead directly to or adjoin the River Corridor Area, or face parks or open spaces that adjoin the River Corridor Area. Materials which are allowed to be used within the River Influence Area include, but are not limited to:

- A. Metal
- B. Glass
- C. Architectural precast concrete or architectural cast-in-place concrete
- D. Stone
- E. Brick
- F. Wood
- G. Hard coat cement stucco
- H. Concrete block which is stained, integrally colored or specially textured; architecturally-treated concrete block
- I. Tilt-up concrete panels which are stained, painted, specially textured or patterned
- J. Glass fiber reinforced cement panels

Orient the wider side of the building perpendicular to the river. This will preserve longer distance views of the River Corridor by creating gaps between taller buildings

Orient the narrow side of the building parallel to the river if above 45' in height



Building massing adjacent to River Corridor Area

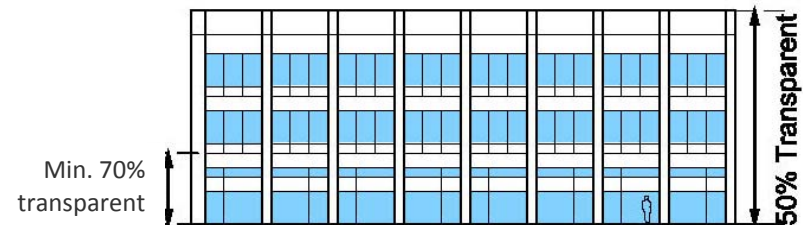
#### 4.4.3.4 Building Transparency

Building Transparency shall apply to all building façades that face the River Corridor Area or that face a street abutting and/or parallel to the River Corridor Area, as follows:

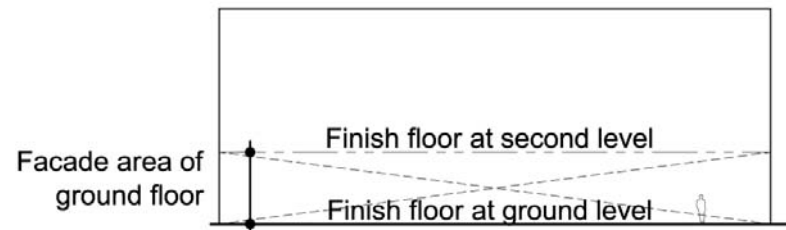
- A. Residential Zones: At least 50% of the total facade must be devoted to transparency such as: glass windows, display windows, or windows affording views into any space related to the residential use, such as retail, customer services, office, gallery, cafes, lobby space or pedestrian entrances.
- B. Commercial and Mixed Use Zones: At least 50% of the total facade must be devoted to transparency such as: glass windows, or windows affording views into retail, customer services, office, gallery, cafes, lobby space or pedestrian entrances. At the ground floor, measured from finish floor of ground floor to finish floor at second floor, at least 70% of the total façade must be devoted to transparency.
- C. Industrial Zones: At least 25% of the total façade must be devoted to transparency such as: glass windows, display windows, or windows affording views into customer services, office, gallery, cafes, lobby space or pedestrian entrances.
- D. The coefficient of transparency for glass, the Visible Light Transparency (VLT), shall be at least 65% (0.65) VLT.

**At least 70% of the ground floor facade must be transparent.**

**At least 50% of the total facade must be transparent.**



Height of ground floor facade measured from finish floor of ground floor to finish floor at second floor



Transparency diagrams for commercial and mixed use zones

#### 4.4.3.5 Building Reflectivity

All building façades that face the River Corridor Area or face a street that is parallel to the River Corridor Area shall incorporate glass and other materials with a visible light reflectivity factor (VLR) no greater than 10% (0.10 VLR).

#### 4.4.3.6 Building Lighting

Within 100 feet of the River Corridor Area, exterior building lighting shall be shielded with full cut-off, down cast lighting.

#### 4.4.3.7 Building Signs

- A. Signs shall conform to Chapter 12, Article 9, Division 8 (Sign Permit Procedures) and Chapter 14, Article 2, Division 12 (Sign Regulations).
- B. Within 100 feet of the River Corridor Area, tops of signs attached to buildings shall not exceed 15 feet in height above adjacent grade.
- C. Ground signs between the building and the River Corridor Area shall be monument signs not to exceed 5 feet in height and shall be located within a landscaped area at least equivalent to the square feet of the sign face.



Examples of monument signs not exceeding 5' in height

#### **4.4.4 LANDSCAPE ARCHITECTURE FOR THE RIVER INFLUENCE AREA**

The purpose of the Landscape Architecture Guidelines is to integrate the landscape of the River Influence Area with the landscape character and materials of the River Corridor Area. All landscape areas within the River Influence Area shall be in conformance with Land Development Code, Chapter 14, Article 2, Division 4 (Landscape Regulations).

##### **4.4.4.1 Public Art for Private Development**

Art within the River Influence Area should be designed to celebrate and enhance the river experience, as well as to complement the natural colors and textures of the river valley. The placement of public art is encouraged to be viewed not only from the River Influence Area, but also from the river pathway in the River Corridor Area. Art opportunities proposed for private property are encouraged, but will remain at the discretion of the private property owner. The City of San Diego Arts Commission can provide assistance for the selection process of artists on projects. Public art should be integrated into functional elements, such as site furnishings and signage, to engage and educate the public about the river park and its environs.

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#### 4.4.4.2 Fences and Walls

Fences and walls shall provide security and screening without visually walling-off the River Corridor Area. Chain link fencing of any type is prohibited within the River Influence Area. Within the 10' building setback from the River Corridor Area, the following fences and walls are allowed:

- A. Solid fences or walls not exceeding 3 feet in height.
- B. Fences or walls of 6 feet in height that are 75% open/transparent.
- C. A combination of a 3 feet solid fence or wall topped with a 3 feet fence or wall that is 75% open/transparent.

#### 4.4.4.3 Plant Material

Landscape material should transition from native plant materials within the River Corridor Area to non-invasive, drought tolerant plant materials in the River Influence Area. Plant material selected for areas abutting the River Corridor Area should complement the native plants through color, texture and forms. Plant materials within the River Influence Area should frame and enhance views of the River Corridor Area.



6' fence with 75% minimum transparency



3' wall, with 3' high, 75% transparent fence attached



## 5.0 IMPLEMENTATION

To implement the San Diego River Park Master Plan, both private and public landowners will need to partner and invest in the river valley. This partnership between private and public entities must remain solid and active to ensure the success and vitality of the San Diego River Park. The five principles of the master plan: 1) Restoring and maintaining a healthy river; 2) Unifying a healthy habitat; 3) Creating a connected continuum along the river pathway; 4) Interpreting the river valley history; and 5) Reorienting development toward the river to create value should serve as the guide for implementation decisions. Within the following Implementation Section, these principles are translated into an Implementing Framework; Implementation Tools; Maintenance, Management and Security; and Public Outreach and Education. The Implementing Framework gives a summary of the river reaches and how close they meet the master plan principles and what still needs to be accomplished. Implementation Tools identifies potential funding sources on Federal, State, and Local levels, development tools, and required government approvals. Of equal importance are maintenance, management, and security for the river park. These programs can be developed through permit requirements, special maintenance districts, a ranger program, donations, youth corps and/or the 'Adopt a River' program. Looking to the future, the river park master plan must also consider public outreach and education as a long term approach to sustain commitment to the river park.

## 5.1 Implementing Framework

The following Implementing Framework table briefly describes, in the year 2010, how the five principles have been implemented in the six reaches of the river, and shows where future improvements are needed from private and public landowners.

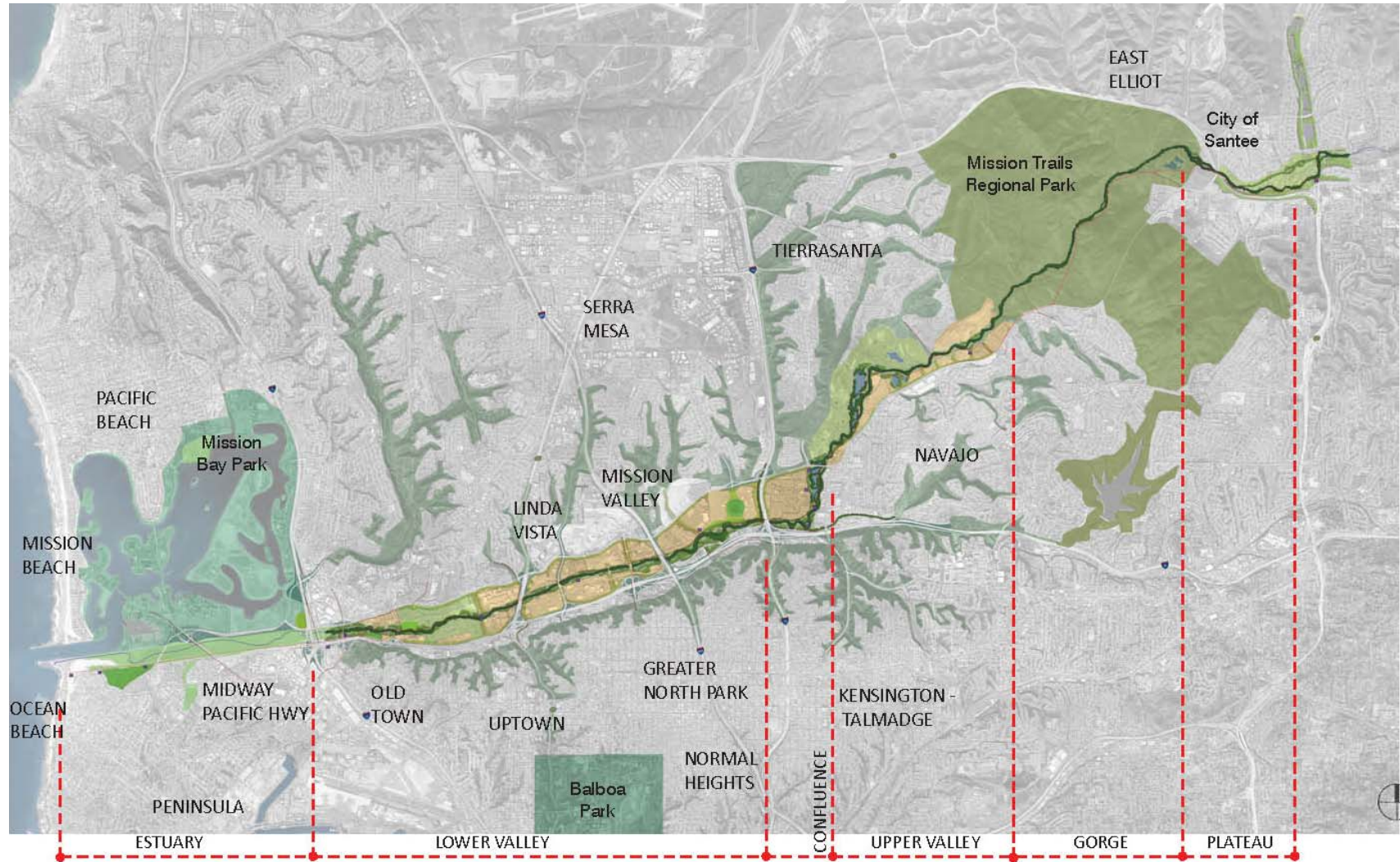


Figure 5. San Diego River Reach Implementing Framework

<b>PRINCIPLE/ RIVER REACH</b>	<b>RIVER HYDROLOGY</b>	<b>RIVER HABITAT</b>	<b>RIVER PATHWAY</b>	<b>INTERPRETIVE PROGRAM</b>	<b>ORIENTATION TO THE RIVER</b>
<b>ESTUARY (Public Ownership)</b>	Existing man-made channel to remain	On-going maintenance needed	Pathway is primarily complete	Enhance with additional signs on the river's history	No new development anticipated
<b>LOWER VALLEY (Public and Private Ownership)</b>	River channel improvements anticipated through redevelopment	Exotic and Non-native plant removal and restoration of native habitat needed	Pathway is incomplete and approximately 2.5 to 3.5 miles are needed through public and private land. Potential easements may be needed on private land	Provide signs on the river's history along the River Pathway, outlooks and key historic areas	Infill Development and redevelopment to provide new orientation to the river
<b>CONFLUENCE (Public and Private Ownership)</b>	River channel contains old mining ponds; improvements anticipated through redevelopment	Exotic and Non-native plant removal and restoration of native habitat needed	Pathway is incomplete and approximately 1.5 to 2.5 miles are needed through public and private land. Potential easements may be needed on private land	Provide signs on the river's history along the River Pathway, outlooks and key historic areas	Infill Development and redevelopment to provide new orientation to the river
<b>UPPER VALLEY (Public and Private Ownership)</b>	River channel is constrained; improvements anticipated through redevelopment	Exotic and Non-native plant removal and restoration of native habitat needed	Pathway does not exist, approximately 2.6 to 3.6 miles needed through potential easements on private land	Provide signs on the river's history along the River Pathway, outlooks and key historic areas	Infill Development and redevelopment to provide new orientation to the river
<b>GORGE (Public Ownership)</b>	Existing natural channel to remain	On-going maintenance needed	Pathway is not complete on the west and east end, approximately 1 -1.5 miles are needed on public land	Enhance with additional interpretive signs on the river's hydrology, habitat and history	No new development anticipated
<b>PLATEAU (Public and Private Ownership)</b>	River channel is constrained by Highway 52 and existing Golf Course; If Golf Course redevelops the channel could be improved	Exotic and Non-native plant removal and restoration of native habitat needed	Pathway does not exist, approximately 1.4 to 2 miles needed through public and private land. Potential easements may be needed on private land	Provide signs on the river's history along the River Pathway, outlooks and key historic areas	Infill Development and redevelopment to provide new orientation to the river

Implementing Framework Table

## 5.2 Implementation Tools

The implementation tools listed below are different means of achieving the master plan vision and five principles. Private or public projects will require the use of several tools working together depending on the type of development or redevelopment that is pursued and the area's context. Although comprehensive, the following list of tools is not complete and over the next 20 years the implementation tools could change and projects will need to respond to new funding sources, development strategies and government approvals.

### 5.2.1 FUNDING SOURCES

Funding to implement the master plan will come through public and private sources as development and redevelopment occurs. Numerous grants are available from federal, state, local and private entities to provide assistance with the implementation of the master plan. Listed below are the federal and state grant opportunities, in the year 2010, with a brief description of what type of projects they would fund. These are all subject to change over the life of the master plan, and landowners should contact the agencies for current information.

#### 5.2.2.1 Federal Funding Agencies:

(A clearinghouse for federal government grants is available at [www.grants.gov](http://www.grants.gov)):

##### **National Park Service**

There are 25 National Park Service federal grants, government grants and loans. Of these, the River Park: River, Trails and Conservation Assistance (15.921) would assist in the implementation of the River Park. This grant provides for projects that implement the natural resource conservation and outdoor recreation mission of the National Park Service. Eligible Applicants: Public Agencies and Non-profit organizations.

##### **US Fish & Wildlife Service**

Provides grants for projects that: 1) promote conservation of wetlands and associated habitats for migratory birds and other wildlife, 2) for projects that restore natural resources and establish or expand wildlife habitat and, 3) to help conserve birds. Eligible Applicants: Public Agencies and Non-profit organizations.

##### **National Endowment for the Arts**

The National Endowment for the Arts (NEA) is dedicated to supporting excellence in the arts, both new and established; bringing the arts to all Americans; and providing leadership in arts education. In 2010, the NEA put forth nine grant categories. These grants provide for board topics such as: Access to Artistic Excellence, Literature Fellowships, Arts on Radio, Learning in Arts for Children and Art Partnerships. Several of these

grants could provide funds for an art interpretive signage program or public art within the river valley. Eligible Applicants: Public Agencies and Non-profit organizations.

### **5.2.2.2 State Funding Agencies:**

(A clearinghouse for state government grants is available at [www.getgrants.ca.gov](http://www.getgrants.ca.gov)):

#### **State Coastal Conservancy**

Provides grants for projects that provide public access to coastal areas, protect and enhance coastal resources and agricultural lands, restore urban waterfronts, and acquire land to protect coastal watersheds and other natural resources. Eligible Applicants: Public Agencies and Non-profit organizations.

#### **State Water Resources Control Board**

Provides grants for projects that prevent or reduce storm water contamination of rivers, lakes and streams. Preference is given to projects that: 1) support sustained long-term water quality improvement, or, 2) are consistent with an applicable Integrated Regional Water Management Plan. Eligible Applicants: Public Agencies.

#### **State Department of Water Resources**

Provides grants for projects that help meet the State's water needs, including water supply projects, water quality projects, groundwater projects, removal of invasive non-native species, trash and debris clearing accompanied with re-vegetation, removal of culverts to stabilize river channels, management of storm water runoff to reduce flood damage, and habitat projects that are beneficial to the State's long term water needs. Eligible Applicants: Local Public Agencies and other organizations included in an Integrated Regional Water Management Plan.

#### **State Department of Parks and Recreation**

Provides grants to protect fish, wildlife, and native plant resources, to acquire or develop wildlife corridors and trails, and to provide for natural interpretation programs and other programs which bring urban residents into park and wildlife areas. Grants are also available for the acquisition and development of new parks and rehabilitation or expansion of overused parks and to provide new recreational opportunities to park-poor low income communities. The Recreational Trails Program Grant may be used for maintenance and restoration of existing trails, purchase and lease of trail construction and maintenance equipment, construction of new trails and acquisition of easements or property for

trails. The Land and Water Conservation Fund allocate money to acquire new land for recreational purposes, including bike paths and support facilities such as bike racks. Eligible Applicants: Public Agencies.

**State Natural Resources Agency**

Provides grants for multi-objective river parkway projects such as, providing compatible recreational opportunities, protect, improve or restore river habitats, provide open space for flood management, convert existing developed riverfront land into a river parkway or provide interpretive enhancement and conservation activities. Eligible Applicants: Public Agencies, State Agencies, and Non-profit organizations.

**State Conservancy for the San Diego River**

Provides funding for the planning and construction of pathways and trails, removal of exotic species and habitat re-vegetation, improve water quality, acquisition of land for new parks or open space and interpretation programs. Eligible Applicants: Public Agencies and Non-profit.

**State Wildlife Conservation Board**

Provides grants for the restoration and protection of wildlife areas, projects that provide public access to facilities for wildlife viewing and other wildlife oriented purposes, and protection of habitat through conservation easements or acquisition. Eligible Applicants: Public Agencies and Non-profit organizations.

**CAL FIRE**

Provides grants for urban forestry, tree planting projects, and up to two years of initial maintenance. Preference will be given to projects that provide the greatest air quality benefits and/or energy conservation benefits. Funding is also available for innovative projects that improve the environment in urban areas through establishment and management of urban vegetation. Eligible Applicants: Public Agencies and Non-profit organizations.

**Caltrans**

Provides grants for projects that mitigate the risks and damages to the environment associated with the construction of new, or modification of existing transportation facilities. Projects that improve air quality through urban forestry, acquisition and restoration projects that protect or enhance watershed, wetlands, or wildlife areas and acquisition or development projects for roadside recreation. Eligible Applicants: Public Agencies, State Agencies, Federal Agencies and Non-profit organizations.

### 5.2.2.3 Local Funding Agencies

#### San Diego Association of Governments (SANDAG)

SANDAG is made up of 18 cities and county governments and serve as the forum for regional decision-making. SANDAG builds consensus, develops strategic plans, obtains and allocates resources, plans, engineers, and builds public transportation, and provides information on a board range of topics pertinent to the region's quality of life. SANDAG administers TransNet funding for planning and construction of transportation projects. A percentage of the funding is set aside for bicycle transportation projects and will fund habitat-related environmental mitigation activities required to implement projects identified in the Regional Transportation Plan. In addition, SANDAG has created an Integrated Regional Infrastructure Strategy (IRIS) that identifies four regional infrastructure areas that are significantly underfunded and lack dedicated funding streams: habitat conservation, shoreline preservation, water quality enhancement and public transit operations and maintenance. SANDAG has embarked on a regional dialogue to examine quality of life funding priorities and potential funding mechanisms through the SANDAG Quality of Life Ad Hoc Steering Committee for these four regional infrastructure areas. Projects along the river that focus on habitat conservation, water quality enhancement or public transit could all apply for these quality of life funds.

#### City of San Diego Development Impact Fees

Development Impact Fees (DIF) provides funding for public facilities. These fees are collected at the time of building permit issuance for private development to fund public infrastructure, such as transportation, parks, libraries and fire stations. DIF could be used to implement some of the San Diego River Park amenities that are identified in the appropriate community plan and associated public facility financing plan to satisfy population-based park and transportation requirements.

#### Development Costs as of 2010

##### **Multi-Use Paths and Trails**

Based on similar developments, a Multi-Use/Class I Bike Path (10' wide) may cost approximately \$4.75 to \$8.00 per square foot or \$250,800 to \$422,400 per mile to construct (in 2010 dollars), resulting in total costs of \$3.2 to \$5.5 million for the approximately 13.1 miles of river pathway to be built.

Decomposed granite (D.G.) pedestrian trails (5' wide) may cost \$1.75 to \$3.00 per square foot or \$46,200 to \$79,200 per mile to construct (in 2010 dollars), or \$693,000 to \$1.9 million for an anticipated 15 miles of trails to be added to the river park area. NOTE: These pathway and trail construction costs do not include design, permits, mitigation, or land costs.

##### **Restoration**

Based on similar developments, the overall restoration costs may range from \$60,000 to \$120,000 per acre in 2010 dollars, plus additional funds for security, if necessary.

##### **Land**

Based on 2009 limited land sales data of developable properties, properties within or adjacent the river park area sold for approximately \$2.2 to \$3.3 million dollars an acre. These numbers are to be used as a guide and actual values for individual properties would be accessed at time of sale.

### **City of San Diego Commission for Arts and Culture**

The Commission for Arts and Culture serves in an advisory capacity to the City Council on promoting, encouraging and increasing support for the region's artistic and cultural assets, integrating arts and culture into community life and showcasing San Diego as an international tourist destination. The Commission advises on the policies and processes whereby artworks are included in Capital Improvements Program projects and Redevelopment Agency Projects and ensure that artists are involved as early as possible in the pre-design and or design phase. For public projects, Council Policy 900-11 outlines a process for including public art in selected Capital Improvement Program (CIP) projects. The Public Art Program is to be funded by two percent of the budget for all eligible CIP projects over \$250,000. Artists are to be involved in the early stages of the project design so that they may become an integral part of the design process. For private projects, the City Council has amended the Municipal Code (Chapter 2, Article 6, Division 7) to require certain private developers to set aside one percent of their project budgets for art and cultural enhancement. The ordinance applies to eligible private commercial and industrial developments with a total building permit valuation equal to or in excess of \$5 million dollars. This requirement may be satisfied by the financing of cultural and artistic facilities and/or on-site art work. Private developers also have the option to pay a one half percent in-lieu fee. In-lieu fees are used for artistic enrichment of the City's public spaces. Through these public and private projects the opportunity for public art can be provided along the river.

### **Redevelopment Tax Increment**

Redevelopment tax increment financing can provide funding for public facilities in certain areas of the City. Two redevelopment areas contain areas of the San Diego River Master Plan: a portion of Mission Valley (located between Interstate 5 and Morena Boulevard); and the Grantville area of the Navajo Community. Use of redevelopment funds must be approved by the Redevelopment Agency, with a recommendation from the respective Project Area Committees, and must be consistent with the Redevelopment Plans and Five-Year Implementation Plans. The purpose of redevelopment is to eliminate blight. Only some elements of the San Diego River Master Plan, most likely park, trail, and circulation infrastructure associated with development in the redevelopment project areas, would be candidate uses.

### **Special Districts**

Utilizing public financing mechanisms, private development may fund land acquisition and improvements through Community Facility Districts (CFDs), Benefit Assessment Districts, and Property-based Business Improvement Districts. CFDs are districts with special taxes secured by property that can be used for capital improvements and maintenance, as adopted by property owners within the district. Benefit Assessment Districts can also be formed by property owners for improvements and maintenance, but are based on more strictly determined benefit nexus formulas than CFDs. Property-based Improvement Districts are similar to Benefit Assessment Districts, but are governed by a private non-profit corporation made up of a majority of the property/business owners.



### **Development Agreements**

Private development can also fund land acquisition and improvements through Development Agreements. These types of agreements are contracts between the City and a developer or property owner that ensures development rights in accordance with specified and predictable regulations in exchange for extraordinary public benefits.

#### **5.2.2.4 Private Funding (Private Foundations, Philanthropic Organizations and Individuals)**

A number of private foundations, philanthropic organizations, and individuals have made contributions to fund improvements or maintain a special area by donating funds to a privately run Foundation or to a public entity. The San Diego River foundation, a 501(c)(3) public benefit nonprofit organization, is a community-based organization dedicated to engaging people in caring for the San Diego River and celebrating the creation of the river park with community places, trails, open spaces and other public areas. Private funding can go directly to the Foundation to assist in their volunteer projects, land acquisitions and maintenance programs. Private funding could also be provided to the City of San Diego in a special fund for the San Diego River that would offset maintenance costs or support a Ranger Program.

#### **5.2.2.5 The Nature Conservancy**

The Nature Conservancy is a leading conservation organization working around the world to protect ecologically important lands and waters for nature and people. The Nature Conservancy's focus in San Diego County extends from the coastal sage uplands to the coniferous forests to the desert in the far eastern county. The Nature Conservancy is acquiring key properties in San Diego County to add to an emerging countywide system of interconnected nature preserves. This multi-jurisdictional effort is driven by a coalition of private conservation organizations, local landowners, and members of the public, and government agencies. The Conservancy alone has saved over 15,000 acres in San Diego County since 1985 and assisted other organizations to protect thousands of additional acres. Recently, the Conservancy joined the San Dieguito River Park Joint Powers Authority and the City of Escondido in a successful collaboration to secure the acquisition of the 232 acres of the Bernardo Mountain property. In the future, the Conservancy could partner with the City of San Diego and the River Coalition to acquire land, assist in biological inventories of the river valley or hold workshops on wetland conservation efforts.

#### **5.2.2.6 Trust for Public Land**

The Trust for Public Land (TPL) helps communities take action on parks and land conservation by providing objective advice based on extensive experience, the latest technology and analytical frameworks, and a proven approach to realizing parks and conservation goals. TPL's primary services are: Conservation Vision, Funding, Research and Education, Transactions, Park Design and Development and the Conservation Campaign. Since 1984, TPL has been working in San Diego County protecting more than 31,000 acres. TPL's goal for San Diego is to preserve

distinctive landscapes that define San Diego's history, culture, and economy to ensure that it remains a place people want to live, work and play. As of 2010, TPL is working in three distinct areas of San Diego; North County Buena Vista Creek, East County Rutherford Ranch and Volcan Mountain, and South County Otay Mountain and the San Diego National Wildlife Refuge. In addition, TPL has partnered with the San Diego River State Conservancy to acquire land in the eastern San Diego river area within the County of San Diego's jurisdiction.

### **5.2.3 DEVELOPMENT TOOLS**

Through public and private infill development or redevelopment, the master plan's five principles will be implemented through different tools, including but not limited to: capital improvement programs, discretionary development permit conditions, land acquisitions, and transfer of development rights.

#### **5.2.3.1 Capital Improvement Program**

A Capital Improvement Program (CIP) is a short range plan which identifies projects, schedules and funding options for public landowners. CIP funds are used exclusively for the acquisition, design and construction of permanent improvements which can be capitalized after completion. Typically repair or maintenance expenditures cannot be made from CIP funds sources. Typical projects can include construction of streets/bridges over the river, sewer and water infrastructure, storm water devices, public park amenities and habitat creation. CIP project programming scoping should incorporate the principles and recommendations of the master plan. This can occur through the public agency making a decision to include this in the CIP or it can be added to the project as a permit condition.

#### **5.2.3.2 Discretionary Development Permits**

Discretionary development permits require environmental review for potential impacts, a public hearing and approval from a decision making authority. Within the river valley, most land development will include some type of discretionary permit due to environmentally sensitive lands, planned district ordinances, community planned implementation overlay zones, or their location within the coastal zone. In some cases, the discretionary permit will be a Planned Development Permit (PDP) to allow for specialized zoning and design guidelines for larger land developments. The PDP can also require the development to group a particular development's residential or multi-use structures on a portion of the subject property, reserving some of the site as protected open space or park land and transferring densities internally within the site. Through this process, the development can be approved as part of the permit to provide for the required open space or population-based park needs of the residents and transportation requirements (for the bikeway), with possible density incentives. It is during the review and processing of these discretionary permits that public and private development would incorporate the principles of the master plan into the overall design

and permit conditions. In addition, any state or federal resource agency permits required for project approval will be determined at this time and the permit conditions will be developed with the appropriate agency.

### **5.2.3.3 Project Level Mitigation**

Project level mitigation permit requirements are another vehicle to implement the master plan during the time of discretionary development permits. All discretionary development projects are subject to California Environmental Quality Act (CEQA) and through the initial study process, project impacts will be determined and project specific environmental mitigation measures will be identified. Typical environmental mitigation measures could include: 1) water quality best management practices for construction and for post construction, 2) wetland restoration, and enhancement, and in some cases creation and, 3) noise attenuation.

Transportation and climate change mitigation permit requirements can be required during the time of project level discretionary development permits. Transportation mitigation could include enhancements to the pedestrian and bicycle circulation system, such as the River Pathway, to provide alternative modes that may reduce automobile traffic and air quality impacts. The City is preparing a Climate Mitigation and Adaptation Plan that will include an inventory of greenhouse gas emissions (GHG), recommend actions to reduce emissions, and identify strategies to adapt to a changing climate. SANDAG is preparing an update to the Regional Transportation Plan that will include a Sustainable Communities Strategy to reduce GHG emissions resulting from vehicle miles traveled (VMT). As climate change mitigation measures are identified through these and other plans, opportunities may arise for application of these measures in a manner that benefits implementation of the San Diego River Park Master Plan. For example, the planting of native trees and re-establishment of wetlands in the river corridor area may help mitigate climate change impacts through carbon sequestration, and creating key pedestrian and bicycle linkages through the river park pathway may help reduce automobile trips and CO2 emissions.

### **5.2.3.4 Land Acquisition (Fee Title Purchase, Dedications, Donations or Easements)**

Another tool to implement the master plan is for the City to acquire land in the river valley through fee title or easement purchases, dedications and donations. Fee title purchase assumes the City would purchase land at fair market value and this would also include real estate transactional costs associated with the acquisition. Fee title purchase is the most expensive land acquisition method, but would be valuable in some locations of the river that are adjacent to existing City-owned land.

Approximately two-thirds of the river and floodway is privately-owned, including the river itself. Typically, this same area is also mapped, per the City's Multiple Species Conservation Program (MSCP), as Multi-Habitat Planning Area (MHPA). As a part of this MSCP's management plan,

private landowners can dedicate or donate the land, most of which is not developable, to the City to add to the MHPA acreage. If the land is dedicated as open space, operations and maintenance of the land could be part of a Maintenance Assessment District. If the land is donated the City would maintain the land as part of the preserved area.

One of the highest priorities for the San Diego River Park Master Plan is to construct the river pathway from Ocean Beach Park to the City of Santee. The river pathway will be provided on both public and private land. Most of the City-owned land contains the river pathway from Ocean Beach Park to Sefton Field in the Mission Valley Community, and through Mission Trails Regional Park in the Navajo Community. On private land, the river pathway will be built as part of new development or redevelopment. A 'Public Access Easement' will be required for the river pathway and will be part of permit conditions. The easement does not transfer ownership of the river pathway to the City of San Diego and the landowner would be responsible for improvements and maintenance of the easement. The easement area, through the easement language, could also be maintained through a Community Facilities District or a Property/Business Improvement District, similar to the Martin Luther Promenade in downtown San Diego.

Reliable land acquisition costs cannot be determined since they rely on specific area circumstances, such as property ownership; the development potential, if any, of land or easements acquired; entitlement values; and market values at the time of acquisition. For example, private land that is developable and needed for the river park will cost more than land that is not developable because of existing local, state and federal regulations. The cost of acquiring easements or fee-interest ownership of land for the river park that is developable can be reduced if the development rights and associated value are transferrable to other portions of the property, or to other properties, outside the river park where development is encouraged. Some private land can be acquired through dedication in exchange for development rights.

### **Permits for Protected Resources**

#### **Wetlands**

The San Diego River is within a large mapped urban floodplain, as such, any alteration to it is subject to a federal permit under Section 404 of the Federal Clean Water Act. The permit is under US Army Corps of Engineers (ACOE) jurisdiction. This applies to any project which affects floodplains and wetlands or other related habitat.

#### **Cultural Resources**

Before a Section 404 permit is issued, the Army Corps of Engineers will consult with the California State Historic Preservation Officer for project conformance with Section 106 of the National Historic Preservation Act, in relation to preservation of cultural resources.

#### **Water Quality**

Projects affecting drainage and water quality are also required to obtain a Section 401 Water Quality Certification under the federal Clean Water Act. This permit is obtained through the Regional Water Quality Control Board. This certification also requires a copy of any agreement with the California Department of Fish and Game under Section 1600 Streambed Alteration Agreement of the California Endangered Species Act Consultation (this permit is not only about water quality, but also fish and wildlife protection).

### 5.2.3.5 Transfer of Development Rights

Transfer of Development Rights (TDR) Programs allows landowners to sell or transfer the building/development rights from a particular piece of property to another property within a community plan area. This typically occurs when a landowner wants to preserve a resource, but still get economic value by selling or transferring entitlements to another property. TDR Programs make such preservation more equitable and politically palatable by compensating landowners who transfer the right to develop their property. Property owners along the San Diego River could use this tool to sell and transfer development rights to preserve land and resources in addition to what is required by regulations, such as for parks, open space, and historic sites.

## 5.2.4 GOVERNMENT APPROVALS

### 5.2.4.1 Federal and State Agency Permits and Agreements

In most cases, all projects within the river valley will require development permits and environmental review by the City of San Diego. The City's review and permit conditions would be based on meeting the vision, principles, recommendations and design guidelines of the master plan. The City would be the lead environmental review agency for almost any project proposed within the City's jurisdiction. Federal and state agencies would be notified during the public review process of all proposed projects affecting natural resources and which may require additional federal or state permits. These agencies could include: U. S. Fish and Wildlife Service (USFWS), US Army Corps of Engineers (ACOE), Federal Emergency Management Agency (FEMA), Regional Water Quality Control Board (RWQCB), California Coastal Commission (CCC), and California Department of Fish and Game (CDFG). The permits that may be required and what they entail is listed in Section 6.0 Regulatory Framework and summarized in the adjacent text box.

#### Permits for Protected Resources

##### **Endangered Species**

If a federal endangered species is affected by a project, a biological assessment will be required to determine whether or not the US Fish and Wildlife Service require a formal federal Endangered Species Act, Section 7.

##### **Flood Management**

All projects located in the floodplain must comply with the Federal Emergency Management Agency (FEMA) regulations to reduce risk of flooding along the San Diego River. The City is a participant in the National Flood Insurance Program (NFIP) administered by FEMA. The City ensures that projects within the floodplain comply with FEMA regulations and requirements. All projects that propose a change to the existing FEMA mapped floodway or floodplain must meet this requirement by applying through the City and then submitting a Conditional Letter of Map Revision (CLOMR) or a Conditional Letter of Map Revision-Based on Fill (CLOMR-F) to FEMA.

##### **California Coastal Zone**

The western end of the San Diego River, from Ocean Beach to the Santa Fe Railroad tracks, is within the California Coastal Zone. Any project within this area must comply with the California Coastal Act. The California Coastal Act includes specific policies related to public access and recreation, low cost visitor-oriented accommodations, and terrestrial and marine habitat protection. Projects within the Coastal Zone are subject to a Coastal Development Permit and must address applicable impacts.

### 5.2.4.2 Local Zoning Permits and Programs

The City Development Services, Park and Recreation, Engineering and Capital Projects and the City Planning & Community Investment Departments are responsible for the implementation of the San Diego River Park Master Plan through permit review. The Development Services Department will review all proposed public and private projects under City jurisdiction to determine conformance with the San Diego River Park Master Plan, City zoning codes, and the California Environmental Quality Act (CEQA). The Park and Recreation Department will review proposed public and private projects, including re-vegetation plans, and mitigation and monitoring plans to ensure that they meet the requirements and objectives of the master plan and the natural resource management plan. The City Planning & Community Investment Department will review all proposed public and private projects to determine if projects are consistent with the San Diego River Park Master Plan's Design Guidelines, Community Plans and the City's General Plan. The permits that may be required and what they entail are listed in Section 6.0 Regulatory Framework.

## 5.3 Maintenance, Management and Security

In order for the San Diego River Park Master Plan to be successful, the river's long term maintenance, management and security must be a high priority. Maintenance activities include: silt removal and dredging where needed, wetland maintenance, removal of exotic and invasive plant materials, trash removal, and maintenance of the river pathway and its amenities and security. Currently, all land owned by the City is maintained through general or enterprise funds. The river areas within Mission Bay Park, Mission Valley Preserve and Mission Trails Regional Park are maintained by the Park and Recreation Department. Privately-owned river parcels are to be maintained by the property owner. Due to the amount of exotic plant species and the water quality of the river, it is apparent

### Annual Maintenance Costs at Build-out (2010 dollars)

**Water Areas** \$1,310/acre  
Includes removal of litter, some invasive species, associated permits and inspections.

**Native Landscape/  
Slope Areas** \$1,810 acre  
Includes removal of litter and invasive species, maintenance of native plants, repair irrigation and inspections.

**Native Landscape/  
Pathway Areas** \$16,840/acre  
Includes removal of litter and invasive species; maintenance of native plants; repair irrigation; maintenance of pathways, benches, picnic areas, kiosk signs, curbs and stairs; and inspections.

### **Approximate Maintenance Costs for the San Diego River Park**

130 acres water at \$1,310/ac  
= \$170,300/year

197 acres of native areas at \$1,810/ac  
= \$356,570/year

125 acres of native area/pathway at \$16,840  
= \$2,105,000/year

Adding 20% for additional costs such as security and specialized security lighting, the annual maintenance costs for the river park could be over \$3,158,000 per year at build-out. This acreage does not include the local regional parks, State and Federal land along the river.

that the river needs maintenance. Funding for maintenance is necessary for all proposed programs. Listed below are different maintenance, management and security tools and programs that could be used to implement the master plan.

### **5.3.1 MAINTENANCE, MANAGEMENT AND SECURITY TOOLS**

Tools to provide maintenance and security could include city funds, development permit conditions for maintenance, the creation of special assessment districts, volunteer efforts from the San Diego River Foundation and private donations. These tools could be used in certain areas of the river or provided in a combination when the river park is completed.

#### **5.3.1.1 City Funds**

The City's General and Enterprise Funds provide for the some of the maintenance, management and security of City-owned properties along the river valley. The following departments own land in or adjacent to the river: the Park and Recreation Department, Real Estate Assets, Water, Environmental Services and Streets Division. The amount of General Fund money allocated to each department is determined through the City budget process and approved by the City Council each year.

#### **5.3.1.2 Development Permits**

Land development permits for new projects or redevelopment of existing projects adjacent to the river could require the river, the river habitat, and the river pathway to be maintained at a certain level as part of the permit conditions. The required maintenance time period could be a set period of time or for the life of the project. The City Council has approved the assessment of permit fees for maintenance of habitat and open space areas. Two types of fees may be considered: A one-time fee option or a one-time fee deposit option. A one-time fee option could be paid at the project approval stage and the fee could be based on a certain time period of maintenance, such as 2-5

#### **Steps to Establish Special Assessment Districts**

##### **Maintenance Assessment District (MADs)**

A developer or interested community representatives/property owners initiate a request to the City to form a district. The City hires an Assessment Engineer to prepare an assessment report and create the assessment methodology. The report proposes formation, describes improvements, specifies boundaries, sets a hearing date to hold a public hearing, and authorizes the City Clerk to mail the ballots. The City mails the hearing notice and a ballot to each assessable property owner, as listed in the most recent certified County Property Tax Roll, a minimum of 45 calendar days prior to the hearing date. The City Clerk's Office receives the ballots and presents district balloting results to the City Council hearing. The City Council receives the ballot results and takes action to either approve the district, Assessment Engineer's Report and the assessment Levy or abandon the district based on the ballot results (simple majority of returned ballots). The earliest a failed ballot can be re-balloted is one year. If approved, City staff prepares the annual enrollment and delivers it to the County Assessor to be included on Property Tax statements to property owners beginning with the December property tax bill after the August 10th enrollment.

years. This fee would be collected by the City and may be used by the City's Park and Recreation Department Open Space Division, a private maintenance company or a non-profit organization that specializes in maintenance to provide basic semi-annual trash abatement and weed removal. This option would be appropriate for residential development along the river where maintenance by individual owners would be difficult to assure. A one-time fee deposit option could be paid at the project approval stage and could be for an amount projected to finance a wider maintenance program along the river, such as an endowment. This fee would be collected by the City, deposited into an interest-bearing account and may be used by the City's Park and Recreation Department Open Space Division, a private maintenance company or a non-profit organization that specializes in maintenance to provide a certain level of maintenance. This option could provide a comprehensive maintenance program for larger areas of the river.

### **5.3.1.3 Special Assessment Districts**

Based on the experience of other river park corridors and open space greenbelts, implementation of the San Diego River Park Master Plan should create value for adjacent properties. Premiums are attributable to proximity to open space views and access to public pathways/trails. Security concerns could potentially offset some of the premiums. According to the economic analysis conducted for this master plan, including a review of case studies around the country, and analysis of local premiums, properties adjacent to the river area are anticipated to sell for a 5% to 15% premium due to their proximity to the River and anticipated improvements. Some of this enhanced value can be recaptured to help fund Special Assessment Districts such as: 1) Maintenance Assessment Districts, 2) Community Facility Districts and/or 3) Property-based Business Improvement Districts.

By coordinating the funding and maintenance protocols overall, there would be economies-of-scale achieved that should reduce the costs to each property owner and enable them to maintain their land at a higher standard. Existing MADs or private funding mechanisms can choose to merge into the broader district if it makes economic sense to do so.

**Maintenance Assessment Districts (MADs)** are established through the City as a means of providing property owners with the opportunity to assess themselves to pay for enhanced improvements, maintenance, services, and activities, known as Special Benefits. MADs are authorized by the State of California in the Landscape and Lighting Act of 1972 and through the California Constitution (Article XIID) and by the City of San Diego through provisions of the San Diego Maintenance Assessment District Ordinance. Provided that a MAD meets these governing provisions of the State and local law, a MAD may: 1) maintain a variety of improvements within public rights-of-way and other publicly-owned land; 2) provide a variety of enhanced maintenance services; and, 3) be used on a more limited basis to fund acquisition of parkland or open space, for park and recreation improvements and maintenance, and for construction and installation of public improvements. MAD formation is often



initiated by a developer during the development of a new community, or by property owners within an already-developed community who desire Special Benefits. The formation process requires close coordination with the Park and Recreation Department, Open Space Division staff for residential or mixed-use MADs, or City Planning & Community Investment, Economic Development Division staff for commercial districts to be managed by a non-profit organization pursuant to San Diego Municipal Code Sections 65.0201 et seq. The formation process requires the initiating party to pay for the preparation of an Assessment Engineer's Report, the cost of balloting, administrative costs, and other incidental expenses. In developing communities, this cost may be funded by a developer or other private contribution. However, because this cost may be prohibitive for property owners in some already-developed areas, the San Diego City Council has created a MAD Formation Fund to assist in financing these start-up costs (see City Council Policy 100-21).

Within the Mission Valley community, a MAD for the First San Diego River Improvement Project was established in 1987 to provide maintenance for the San Diego River between State Highway 163 and Qualcomm Way. The MAD funds maintenance of the earthen flood control channel, eight river islands inside the channel zone, and an approximately 20-foot-wide buffer zone running along and adjacent to the channel embankments. MAD activities include revegetation, wildlife monitoring and reporting, native plant and landscape maintenance, restoration of the embankment erosion, and trash removal. This type of MAD could be used as an example for future large subdivisions. The risk of a MAD is that it can be dissolved with a vote of the property owners, which could leave the river without maintenance funds.

**Community Facilities Districts (CFDs)** are typically formed to provide funding for public infrastructure in connection with new development, but may also be formed to finance improvements pertaining to developed properties. Subject to voter approval within a district special taxes may be levied upon properties within a district to pay for facilities,

### Steps to Establish Special Assessment Districts

#### **Community Facilities District (CFDs)**

A Developer or an established community can initiate the formation of a CFD. For developer initiated districts, an application may be obtained and filed with the City's Department of Finance. The Department of Finance will consider the public benefits offered by the proposed project in context to the CFD policies. If initiated by a community, the City's Debt policy requires the affected property owners (75%) to petition the City for the CFD. A comprehensive project review and feasibility analysis of the proposed project, which would ultimately provide for the payment of the special taxes or assessments in connection with bond financing, is performed by an independent financial consultant. If recommended by the Chief Finance Officer, and pursuant to the filing of an appropriate petition and application, the completion of a Feasibility Study that concludes the project is feasible, the City will form the district and, if a financing is contemplated, issue bonds.

and, in certain cases, services. Special taxes may also be levied to repay bonds issued to finance public improvements. The properties within the district can be discontinuous.

CFDs can be initiated by a developer, established community or by the City legislative body. The City expects that private developers should have primary responsibility for providing public infrastructure required in connection with new development. With the City's Debt Policy as a guideline, the City will continue to consider requests for CFDs formation and debt issuance to finance such public infrastructure when the requests address an extraordinary public need or benefit.

CFD financing is guided by the Mello-Roos Community Facilities Act of 1982. This Act was enacted by the State to help growing areas finance certain essential public facilities that typically accompany major development projects. The Act permits a public agency to create a defined area within its jurisdiction and, by a 2/3 majority vote, levy a special tax within the district to pay directly for public improvements or services, or pay debt service on bonds issued to finance the improvements. If there are 12 or more registered voters residing within the district, the vote will be by the registered voters, with each voter having one vote. If there are fewer than 12 registered voters residing within the district, the vote will be by the landowners within the district, with each landowner having one vote for each acre, or portion of an acre, owned within the district. CFDs are not fiscal obligations of the City, and are limited obligations of the CFD, payable solely from special taxes levied upon property within the district. The special taxes are calculated and levied pursuant to a Rate and Method of Apportionment, or tax formula. Under the Mello-Roos Act, the formula must be reasonable. The financed public facilities must ultimately be owned and operated by a public entity, such as the City, and may include, among other things, parks, roadways, water infrastructure improvements that have a useful life of five years or more. In accordance with Section 53313 of the California Government Code, CFDs may also provide funds for certain public services, including police and fire services and recreation program services so long as they are in addition to, and do not supplant, services already provided within the district.

### **Steps to Establish Special Assessment Districts**

#### **Property/Business Improvement Districts (PBIDs)**

Typically, a PBID is initiated by local property and/or business owners petitioning the City to establish a PBID on their behalf. Once the City Council has approved a resolution of intention, a ballot is sent to all affected property and/or businesses owners. After the City Council conducts two public hearings it may approve the PBID establishment by ordinance, provide written protests are not received from property and/or business owners who will represent 50% or more of the total assessments to be collected.

**Property/Business Improvement Districts (PBIDs)** In California, PBIDs are formed pursuant to the Property and Business Improvement District Law of 1994 (PBID law). A PBID is a mechanism for property and/or business owner collaboration. The PBID law allows for the creation of an assessment district to raise funds within a specific geographic area. Before the District is formed, parcel owners paying over 50% of the total assessment must sign a petition in support of the District. The PBID law provides a multi-year life for Districts. Renewal of a District requires a petition process and Proposition 218 ballot protest process. The law states that the PBID is to be governed by a private non-profit corporation made up of a majority of the property and/or business owners. All funds collected are returned to the private non-profit corporation, which is responsible for managing the district and delivering district services. A Management District Plan spells out at a minimum the services to be provided and necessary improvements, establishes the boundaries, the budget, and the term of the district. PBIDs have a defined life, which initially cannot exceed five years pursuant to the PBID law. Property owner support is required for renewal and the formation process must be followed. The specific number of years in which assessments will be levied in a new district shall not exceed five years. Upon renewal, a district shall have a term not to exceed 10 years.

PBIDs can provide essential services that include but not limited to, the following: (a) Parking facilities, (b) Benches, booths, kiosks, display cases, pedestrian shelters, and signs, (c) Trash receptacles and public restrooms, (d) Lighting and heating facilities, (e) Decorations, (f) Parks, (g) Fountains, (h) Planting areas, (i) Closing, opening, widening, or narrowing of existing streets, (j) Facilities or equipment, or both, to enhance security of persons and property within the area, (k) Ramps, sidewalks, plazas, and pedestrian malls, (l) Rehabilitation or removal of existing structures, and (m) Economic development in addition to those provided by local government.

In addition, the PBID can fund the following activities: (a) Promotion of public events which benefit businesses or real property in the district, (b) Furnishing of music in any public place within the district, (c) Promotion of tourism within the district, (d) Marketing and economic development, including retail retention and recruitment, (e) Security, sanitation, graffiti removal, street and sidewalk cleaning, and other municipal services supplemental to those normally provided by the municipality, and (f) Activities which benefit businesses and real property located in the district. The Downtown P/BID, which was formed in 2000 and renewed in 2005, is made up of properties within the majority boundaries of downtown San Diego. This P/BID district raises funds for the following services: Cleaning of sidewalks, Graffiti removal, maintains landscape areas, Public safety programs, Enhanced lighting, Public information, and Program management. The downtown P/BID is in its second year of renewal and has found to be very successful in the downtown area. A P/BID could be formed by commercial property owners including income-properties, such as apartments, to provide enhanced security.

#### **5.3.1.4 The San Diego River Foundation**

The San Diego River Foundation is a community-based grassroots non-profit organization which was founded in 2001. As a 501(c)(3) public benefit organization, the foundation relies upon donations and support from the community for its general operations and programs. The foundation's vision for the river is a greenbelt from the mountains to the ocean along the 52-mile long San Diego River. The foundation promotes stewardship of the river and education on the river's natural systems. Through their efforts, the River Coalition was created, representing 70 organizations that meet and implement the foundation's vision. The River Coalition provides maintenance of the river through its large volunteer network organization. In 2007, they provided over 10,000 volunteer hours of service. Service included removal of over 1,000,000 pounds of trash and debris from the river and surrounding habitat, creation of the San Diego River Garden in Mission Valley, and creation of the River Watch Program that monitors the health of the river on a monthly basis. In 2009, the River Coalition increased their volunteer efforts to 17,000 hours and a large part of this was to promote maintenance and management of the river.

#### **5.3.1.5 Private Donations**

Corporations and individuals donors could provide donations to an endowment fund for the maintenance of the River Corridor Area. Donations could be collected by the City, who could then maintain the area directly or retain a private contractor to provide the maintenance.

## **5.3.2 MAINTENANCE, MANAGEMENT AND SECURITY PROGRAMS**

The following maintenance, management and security programs could all be funded from the tools listed above and provided all along the river area to ensure consistent management of the river park. These programs could be facilitated by the City, the San Diego River Foundation or through other non-profit organizations.

### **5.3.2.1 Ranger Program**

Once the river pathway is completed, the City could establish a Ranger Program for the San Diego River Park. This program could provide educational programs for schools and other groups, lead hikes through the river valley, oversee maintenance, restoration and preservation programs, enhance security, and provide a point of contact for issues along the river.

### **5.3.2.2 Conservation Corps or Neighborhood Youth Corps Program**

A Conservation Corps or Neighborhood Youth Corps could be established to draw upon the communities' broad range of volunteer talents. The City's Volunteer Service Coordinator would assist schools and youth groups throughout the neighborhoods along the river to work with the City in maintaining and overseeing their community resource. Under this program, youth groups would work under the supervision of the City or school staff to learn about biology, hydrology and urban communities, participating in multiple aspects of river maintenance.

### **5.3.2.3 Adopt the River Program**

A variation of the Youth Corps Program could be an "Adopt the River Program" offered to local schools or to other recognized groups. This type of maintenance program could be facilitated by the City or a non-profit organization to provide training and education on the maintenance of a river habitat. Schools could tie this into a biology curriculum that would allow students to study and undertake laboratory work on different segments of the river. Other recognized groups that want to provide a civic service, much like "Adopt a Highway Program", could provide maintenance under the supervision of the City or a non-profit organization.

## **5.4 Public Outreach and Education**

Another important means of implementing the San Diego River Park Master Plan is through public outreach. This involves outreach to the community at large to generate support for the overall efforts related to both improvements and maintenance. In the development of this master plan, public participation from adjacent communities has been overwhelming. This amount of support needs to continue through public announcements and education brochures, river events and support from the San Diego River Foundation and Coalition.

### **5.4.1 OUTREACH BROCHURE**

The River Foundation should prepare an outreach brochure for community groups, decision makers, businesses, non-profit organizations, government leaders and others on the unique beauty, the habitat/cultural significance, and the recreation possibilities of the river. The brochure should attract support and generate interest in the implementation of the master plan. It could also be designed as a graphic art piece to be exhibited as a marketing tool in businesses and offices along the river. Other related outreach could include a newsletter, a San Diego River Pathway Map and/or creation of a Webpage that offers upcoming events and recreation activities.

### **5.4.2 RIVER EVENTS AND SUPPORT FROM SAN DIEGO RIVER FOUNDATION**

The San Diego River Foundation is dedicated to making the river a truly treasured regional asset that is valued by all members of our community and visitors. To promote the river, the Foundation organizes several annual events such as clean-up days, tree planting on Arbor Day, re-vegetation of natives in the fall and other activities. The foundation maintains a web site called 'Volunteer Events Calendar' that lists current events and dates for activities along the river. It is through these public events that the foundation offers education on the river's importance to the region and how the river can be restored.

## 6.0 REGULATORY FRAMEWORK

### 6.1 APPLICABLE CITYWIDE PLANNING POLICY DOCUMENTS

The San Diego River Park Master Plan is the policy document upon which all land use decisions along the river are based. The master plan provides general and reach-specific recommendations for the entire planning area and design guidelines for development within two corridors directly adjacent to the river. In addition to the master plan recommendations and design guidelines are other applicable citywide planning policy documents that also play a role in the use and development of the river. These documents include the City's General Plan, Community Plans, Park Master Plans, the City's Multiple Species Conservation Program Subarea Plan, the San Diego Watershed Urban Runoff Management Plan, the Bicycle Master Plan Update and the San Diego Pedestrian Master Plan. The community planning areas within and adjacent to the River Park are shown on Figure 6. With such a complex planning and jurisdictional structure, it is important to understand how these documents work together and support the San Diego River Park Master Plan. This Regulatory Framework Section provides a brief description of each of these policy documents, their implementing ordinances, and their relationship to the Master Plan.



Exploring the San Diego River

### **6.1.1 GENERAL PLAN**

The City of San Diego's General Plan was updated in 2008. The plan sets out a long-range vision and policy framework for how the City should plan for projected growth and development, provide public services, and maintain the qualities that define San Diego over the next 20 to 30 years. The General Plan calls for new growth to be targeted into mixed use centers, and for important open spaces to be preserved for the environmental, urban form, and recreational benefits they offer. One of the General Plan's guiding principles is to achieve "an open space network formed by parks, canyons, river valleys, habitats, beaches, and ocean." The General Plan specifically addresses river parks with a policy to "encourage the planning and coordination of river parks to provide public recreational opportunities, protect natural resources, and enhance community character (Policy RE-F.6)." The General Plan also calls for "watershed awareness and water quality education programs" (Policy CD-E.1.c), "for City participation in the development and implementation of Watershed Management Plans" (CE.D.3), and to "use open space and landscape to define and link communities" (Policy UD-A.2). The San Diego River Park Master Plan will help implement these and many other General Plan policies.

### **6.1.2 COMMUNITY PLANS**

Community plans represent a vital component of the City's General Plan because they contain more detailed land use designations and site-specific policy recommendations than is practical at the citywide General Plan level. . The community-specific detail found in the community plans is also used in the discretionary review process for both public and private development projects. Overall, the General Plan and community plans are intended to be used as a means to maintain or improve quality of life, and to respect the essential character of San Diego's communities. Of the 16 community plans, in or adjacent to the river valley, four are directly influenced by the river and the Master Plan:

- Mission Valley
- Navajo
- Tierrasanta
- East Elliot

These community planning areas, through their land use policy documents, can directly influence the relationship between physical development and the river. This relationship determines the character and health of the river. While the San Diego River Park Master Plan does not include specific design guidelines for the unique conditions of each community, it does include design guidelines for the areas directly adjacent to the river.



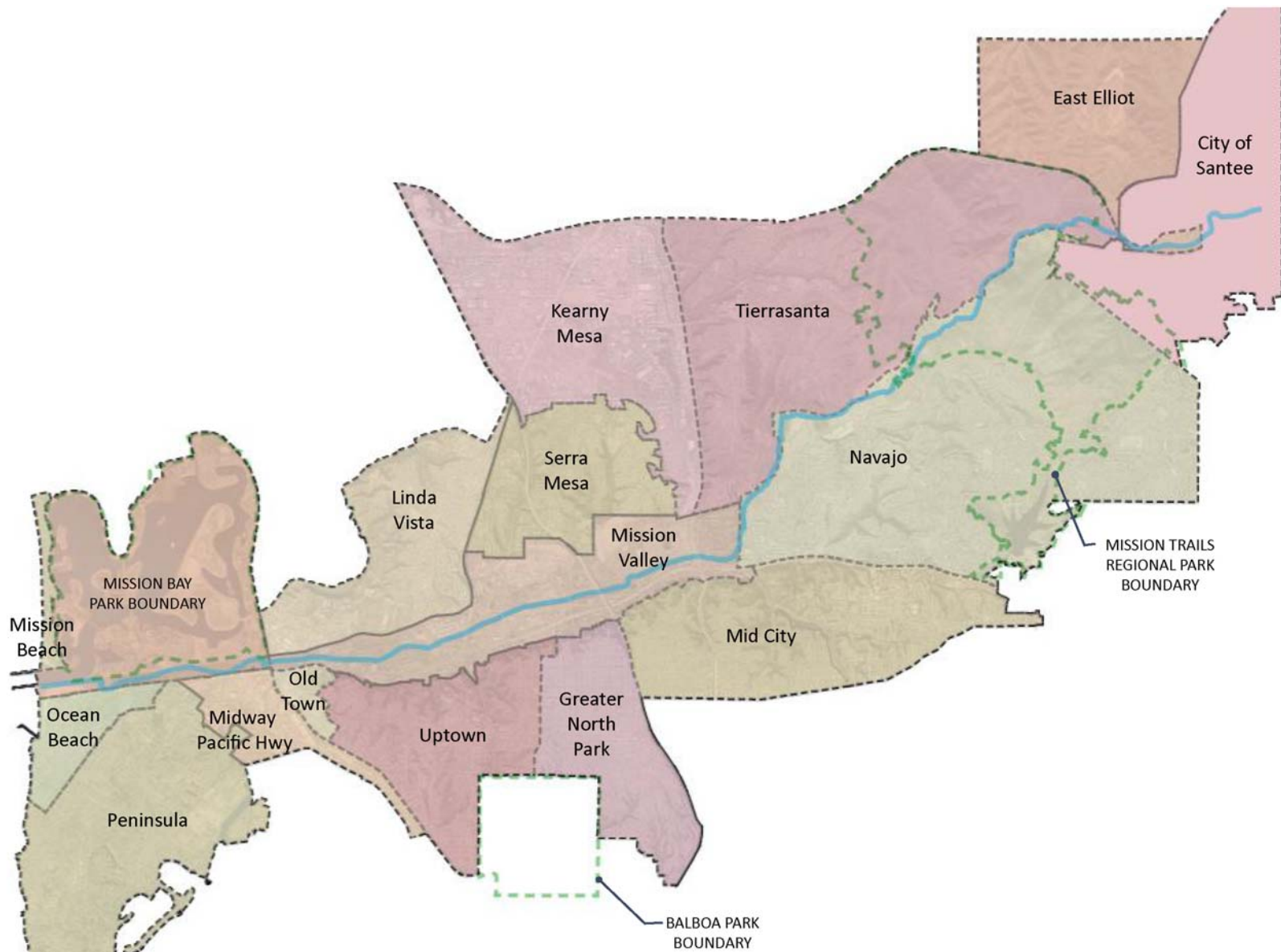


Figure 6. Community Planning Areas

### **6.1.2.1 Mission Valley Community Plan and Specific Plans**

The Mission Valley Community Plan identifies the San Diego River Floodway, as well as the surrounding canyon and hillside landscapes, as major assets in the creation of an open space system available to all San Diegans. The Mission Valley Community Plan seeks to take advantage of the opportunities presented by the unique physical environment of the valley in creating a 'quality regional urban center, while recognizing and respecting environmental constraints and traffic needs, and encouraging the valley's development as a community.'

While the plan recognizes the potential to establish a unique environment in the City of San Diego, it also notes several conditions which must be considered in future planning efforts. Foremost among these issues is flooding, a significant problem for the surrounding communities. Impacts of development along the river and throughout the watershed must be carefully considered. While the river can provide a significant scenic amenity, development must in turn protect that resource by paying careful attention to the sensitive habitat and species of the river corridor. All development in Mission Valley is regulated by the Mission Valley Planned District Ordinance. The Mission Valley Planned District Ordinance regulates development with the intent to, "implement the Mission Valley Community Plan through the use of overlay districts regulating development intensity community wide and providing additional development criteria for projects in the San Diego River and Hillside sub-districts..." The River Sub-district of the Mission Valley PDO establishes a River Corridor Area and River Influence Area, and to identifies allowed uses and development regulations to implement the Master Plan. Public and private projects within the PDO River Sub-district are required to undergo a discretionary review process and apply for a Mission Valley Development Permit.

The Mission Valley Community Plan was adopted by City Council in 1985 and amended at various times over subsequent years. A community plan update is anticipated to begin in 2011.

Within the Mission Valley Community Planning Area, the river also intersects four Specific Plan Areas, from west to east: Levi-Cushman, Atlas, First San Diego River Improvement Project (FSDRIP), and Mission City. The San Diego River Park Master Plan planning effort must continue to coordinate with these planning efforts as they move toward implementation.

More information regarding the Mission Valley Community Plan may be found at:

<http://www.sannet.gov/planning/profiles/missionvalley/shtml>

### **Levi-Cushman Specific Plan**

The Levi-Cushman Specific Plan was adopted in 1987 and proposes mixed-use development on approximately 200 acres of land in the western portion of Mission Valley on a site currently occupied by the Riverwalk Golf Course. Of the total 135 acres of land to be developed, 77 acres lie north of the San Diego River and are planned for mixed uses, such as residential, offices, community uses, retail stores and hotel rooms. Approximately 53 acres planned for development on the south side of the San Diego River will be office and hotel uses. A new 12 acre island is planned between the north and south sides of the river with a bridge connection. A river buffer and public path is planned for both sides of the river.

### **Atlas Specific Plan**

The Atlas Specific Plan was approved in 1988 and is a planning document covering seven sites in western Mission Valley. Three of the seven sites are located adjacent to the San Diego River and the remaining four sites are located south of Interstate 8. The three sites adjacent to the river are known as Hanalei Hotel, Hanalei Tower and Town and Country Hotel and Convention Center. The specific plan includes detailed urban design and river improvement elements which provide for both flood protection and the replacement of wetland habitat.

### **First San Diego River Improvement Project Specific Plan (FSDRIP)**

FSDRIP is a specific plan located in Mission Valley, which encompasses the area between Qualcomm Way and State Highway 163. It is a mitigation site for a 100-year flood control project that was funded through an agreement with the property owners who benefited from the flood control.



Mission Valley is disconnected from side canyons by pavement and development

In the 1970's, winter flooding limited the potential for the land owners in the area to develop their properties, prompting the idea to channelize the San Diego River to move flood waters rapidly through the valley. After approval of the project, the property owners entered into an agreement with the City of San Diego that assured them that development of their property could proceed. In exchange, the property owners agreed to fund the necessary flood control improvements and its continued maintenance.

Under the Federal Clean Water Act, the U.S. Army Corps of Engineers replanted and preserved 26.8 acres of riparian woodland, 9.7 acres of freshwater marsh, and 8.7 acres of open water within FSDRIP. As a requirement of FSDRIP, a Natural Resources Management Plan (NRMP) was prepared that addresses four areas of use within the FSDRIP boundary: natural habitat, flood control, utility corridor, and public uses. The purpose of the NRMP was to establish 100-year goals, and remedial measures to re-vegetate disturbed natural habitats. The plan also delineates acceptable public and recreational uses within the area.

FSDRIP was adopted by the City Council in 1982, amended several times and improvements were completed in 1988. In 1995, the California Department of Fish and Game and the U.S. Army Corps of Engineers agreed that vegetation efforts had progressed well and FSDRIP could be considered successful. The most recent amendment to FSDRIP Design was made in 1999 and is referred to as Rio Vista West Design Guidelines and Development Standards.



The San Diego River flows slowly through FSDRIP



Existing pathway through FSDRIP extends from near State Highway 163 to Qualcomm Way

## Mission City Specific Plan

The Mission City Specific Plan was adopted in 1998 and covers approximately 225 acres located on the north side of the San Diego River just west of Qualcomm Stadium. This Specific Plan amends the Northside Specific Plan approved for the project site in 1984. The plan proposes mix land uses including retail commercial, office, and residential. The portion of the San Diego River which abuts Mission City's southern border is not planned for flood control improvements; instead the floodway is designated for conservation due to the quality of existing wetland habitats. A 50' wide channel occurs in this area and carries storm waters from Interstate 15 westward.

### 6.1.2.2 Navajo Community Plan

The Navajo Community Plan was adopted by City Council in 1982, and amended in 2002. A plan amendment is in progress for the Grantville Redevelopment Area Master Plan and is expected to be completed in 2011. The primary goal of the Navajo Community Plan is to 'retain the residential character of the area' while providing basic services which enhance the day-to-day lives of its residents, such as police and fire protection and open space amenities. The plan recognizes the delicate balance between the community and the San Diego River environment. Much of the community's storm water runoff finds its way to the river, and the occasional flooding of the river impacts future land use planning in the floodplain. Development adjacent to the San Diego River within the Navajo Community is regulated by the Community Plan Implementation Overlay Zone for the River Sub-district within the Community Plan. The Community Plan Implementation Overlay Zone provides supplemental development regulations that are



Navajo Canyon in Navajo Community Area

tailored to specific sites within community plan areas of the city. The Navajo Community Plan has a CPIOZ Type A and B as shown on Diagram 132-14E (Map No. C-779). The map of the Overlay Zone includes the San Diego River Sub-district, Type B to implement the master plan. Public and private projects within the Navajo CPIOZ River Sub-district, Type B are required to undergo a discretionary review process and apply for a Site Development Permit.

### **6.1.2.3 Tierrasanta Community Plan**

The Tierrasanta Community Plan was adopted by City Council in 1981 and amended in 1991. The Plan generally describes a low density residential community. The presence of commercial areas is designated only where necessary to support the residential community, and the presence of industrial activity is limited to a small, isolated site. The plan seeks to capitalize on the open spaces of the canyon lands interspersed throughout the community, as well as the expansive open space resource of the nearby Mission Trails Regional Park.

The San Diego River runs along the majority of the Tierrasanta Community Plan's southern planning boundary. Flood control and recreation along the river are discussed in the community plan. The Plan also identifies a need to regulate existing sand and gravel extraction operations in order to avoid any negative impact on the river, its habitat or recreational activities. Development adjacent to the river within the Tierrasanta Community is regulated by the Mission Trails Design District Ordinance and Design Manual. Within the Design Manual, Sub area 3, are development regulations that will implement the master plan, once amended.



Elanus Canyon in Tierrasanta

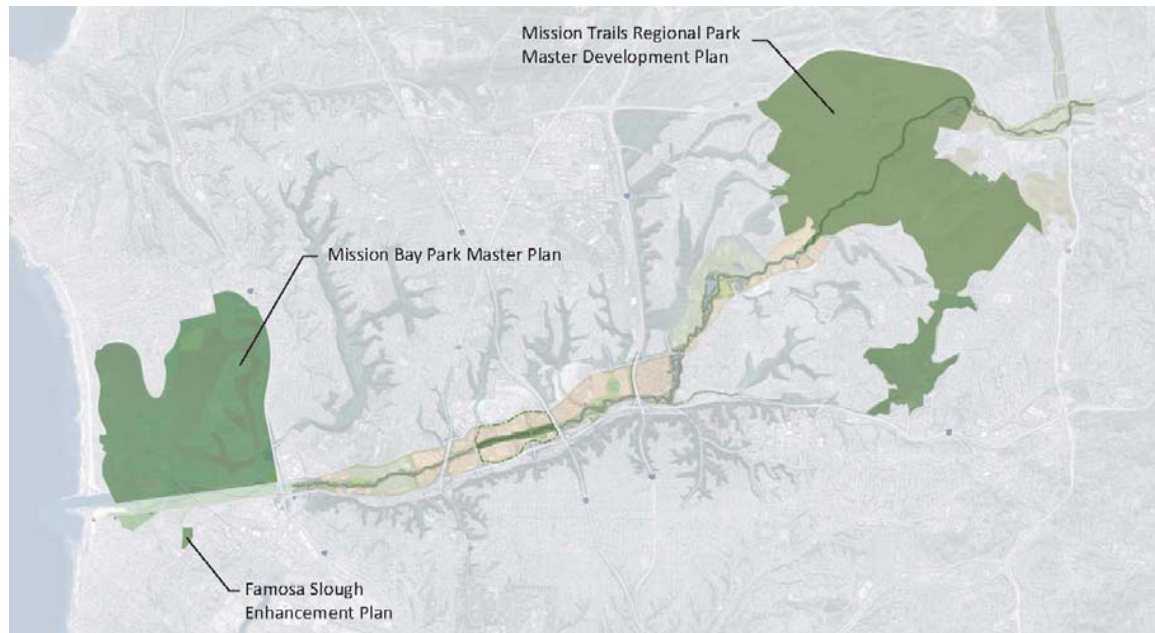
#### 6.1.2.4 East Elliott Community Plan

The East Elliott Community Plan was adopted by City Council in 1971 and amended in 2002. The San Diego River crosses the municipal boundary of the City of San Diego at the southeastern corner of the East Elliott Community Plan. East Elliott is dominated by native vegetation and includes sage scrub, chaparral, native grassland and oak and sycamore woodland and is one of the largest and biologically most important remaining open spaces in San Diego. Due to the natural resources and rugged topography which makes urban development virtually infeasible in this planning area, a majority of East Elliott is designated for long-term open space use. The East Elliott Community is mostly within the boundaries of the MHPA with nearly 80% of the area in the Community Plan Area designated as Open Space, including areas on both sides of the San Diego River. Development adjacent to the San Diego River within the East Elliott Community is regulated by the Mission Trails Design District Ordinance and Design Manual. Within the Design Manual, Subarea 3, are development regulations that will implement the San Diego River Park Master Plan, once amended.

#### 6.1.3 PARK MASTER PLANS

The San Diego River Park planning area intersects two resource-based park planning areas, Mission Bay Park and Mission Trails Regional Park, and abuts the north edge of the Famosa Slough Open Space. Each of these areas has its own policy document:

- Mission Bay Park Master Plan
- Famosa Slough Enhancement Plan
- Mission Trails Regional Park Master Development Plan



### 6.1.3.1 Mission Bay Park Master Plan

The Mission Bay Master Plan was adopted by City Council in 1994 and amended in 2002. Once part of the estuarine delta of the San Diego River, Mission Bay (historically known as False Bay) was a vast tidal marsh coursed by the braided river until the 1852 construction of the Derby Dike on the south side of the river channel prevented flow into San Diego Bay. In the 1940's dredging was initiated to turn Mission Bay into an aquatic park and tourist attraction to diversify the city's economy. Today the San Diego River Estuary lies within the boundary of Mission Bay Park and serves an important role in the provision of wildlife habitat within the park. The fundamental goal of the Mission Bay Master Plan was to identify new demands on the park in response to the regional population growth and evolving recreational activities. The plan acknowledges the many demands and activities within its bounds with a notion of "parks within a park", identifying regional-oriented recreation, commercial-oriented recreation, neighborhood-oriented recreation and habitat-oriented recreation as the key components and purpose of the Park. The plan addresses the river minimally, identifying it as a habitat-oriented recreation area adjacent to a "rustic" perimeter of coastal vegetation as an edge along the river dike. The current plan indicates that the land use between the river and the bay east of SeaWorld is to be developed as regional park land, coastal landscape, and overflow parking.



Passive Recreation at Mission Bay Park



Mission Bay Park provides a diversity of land and water-based recreational activities



### 6.1.3.2 Famosa Slough Enhancement Plan

The Famosa Slough Enhancement Plan was adopted by City Council in 1992. Originally part of the San Diego River/False Bay (Mission Bay) estuary, the tidal influence on Famosa Slough has been restricted by flood control structures. Today, Interstate 8 remains a barrier between Famosa Slough and the San Diego River, cutting off hydrologic, biologic and pedestrian connection between the two. The original flood gates have been replaced and remain open most of the time. The Friends of Famosa Slough operate the gates monthly to ensure proper operation and are responsible for closing them in the event of a flood. This change in the waterway's function has resulted in salinity levels and inundation frequencies that have varied over the years. Urban runoff has also impacted the slough, creating several habitats, including some that are non-native and invasive.

The Enhancement Plan recommends a series of actions primarily intended to improve the biology and hydrology of the slough, as well as provide an opportunity for education and limited human access. Implementation of the Enhancement Plan is not complete, but has been successful thus far.



Famosa Slough Open Space

### **6.1.3.3 Mission Trails Regional Park Master Development Plan**

Mission Trails Regional Park is an important partner in the San Diego River Park Master planning process in that it will link the river valley's existing and future parklands.

The Mission Trails Regional Park Master Development Plan defines four major elements of the park's mission:

- The park has a multi-purpose role serving recreational, educational and cultural needs of the region.
- The park is made up of five unique areas (West Fortuna Mountain, East Fortuna Mountain, Mission Gorge, Cowles Mountain and Lake Murray).
- The park should have an outward, regional orientation rather than a closed, inward orientation, and trail linkages are a key component of this outward focus.
- The park should respond to environmental issues and build upon unique site opportunities (river, vegetation, sense of enclosure) while also acknowledging site constraints.

The Mission Trails Regional Park Master Development Plan also identifies several planning and design goals that parallel the intent of the San Diego River Park Master Plan. These goals include trail linkages from Mission Bay Park to the Cleveland National Forest, and to an inter-regional park loop. Also aligning with San Diego River Park goals, the Master Development Plan stresses management and enhancement of native wildlife habitats and water flow, the need to cluster recreational uses in appropriate locations, and the Park's role in serving a diversity of needs. Native plant communities in the Mission Gorge should be managed by removing invasive species and selectively replanting native tree species, such as California Sycamore, Cottonwood, and Coast Live Oak, to supplement the existing forest.

The Master Development Plan identifies Mission Gorge in particular, offering opportunities for remote picnicking and exploring the rich riparian habitats, as “possibly the most valuable resource” of the Park.

The Master Plan for Lake Murray, Cowles and Fortuna Mountain Regional Park was adopted by San Diego City Council and San Diego County Board Supervisors in 1977. The park was renamed Mission Trails Regional Park in 1979 and a second Master Development Plan was adopted in 1985 by the San Diego City Council and the San Diego County Board of Supervisors. A master plan update is slated to begin in 2010.

The Mission Trails Design District provides supplemental development regulations for property surrounding Mission Trails Regional Park. The intent of these regulations is, “to ensure that development along the edges of Mission Trails Regional Park enhances the park’s natural qualities and promote the aesthetic and functional quality of park/urbanization relationships...” All development is to comply with the Mission Trails Design District Guidelines. There are three sub-areas in the Mission Trails Design District Guidelines that overlay areas of Navajo, Tierrasanta and East Elliot Communities. Subarea 3 establishes a River Corridor Area and River Influence Area, and to identifies allowed uses and development regulations to implement the Master Plan. Public and private projects within the Subarea 3 of the Mission Trails Design District Design Guidelines are required to undergo a discretionary review process and apply for a Site Development Permit.



The Gorge in Mission Trails Regional Park

#### **6.1.4 DRAFT SAN DIEGO RIVER NATURAL RESOURCE MANAGEMENT PLAN**

The goal of the draft San Diego River Natural Resource Management Plan (NRMP) is to have a plan that will facilitate the development of sound management practices that are consistent with the San Diego River Park Master Plan, the MSCP Subarea Plan and the Regulations for Sensitive Lands. This Natural Resource Management Plan ‘recognizes the value of natural and recreational resources along the San Diego River and provides for protection, enhancement, and management of these resources.’ The plan also assists the city by clearly defining the ‘expectations for natural resource protection’ and to facilitate the permitting process at the federal, state, and local level. The plan area consists of the river’s riparian corridor from Interstate 5 to Mission Trails Regional Park, excluding the First San Diego River Improvement Project (FSDRIP) and the Riverwalk Golf Course property.

#### **6.1.5 MULTIPLE SPECIES CONSERVATION PROGRAM SUBAREA PLAN**

The Multiple Species Conservation Program Subarea Plan was adopted by City Council in 1997. The Multiple Species Conservation Program (MSCP) Subarea Plan has been prepared pursuant to the general outline developed by the United States Fish and Wildlife Service and the California Department of Fish and Game (herein referred to as the “wildlife agencies”) to meet the requirements of the California Natural Communities Conservation Planning Act of 1992. The MSCP is a comprehensive habitat conservation planning program that addresses multiple species habitat needs and the preservation of native vegetation communities in the San Diego region. This Subarea Plan forms the basis for the Implementing Agreement which is the contract between the City and the wildlife resource agencies that ensures implementation of the plan and thereby allows the city to issue Federal Incidental take permits at the local level. The MSCP’s core, hard-line biological preserve system has been developed by the City in cooperation with the wildlife resource agencies, property owners, and environmental groups and is referred to as the Multi-Habitat Preserve Area (MHPA). The MHPA delineates core biological resource areas and corridors targeted for conservation. Within the MHPA, limited development may occur and all development must meet the MSCP Land Use Considerations and the Framework Management Plan guidelines. The MSCP is implemented by the City through the Environmentally Sensitive Lands Regulations and the City’s Biological Guidelines of the City’s Municipal Code and Land Development Code.

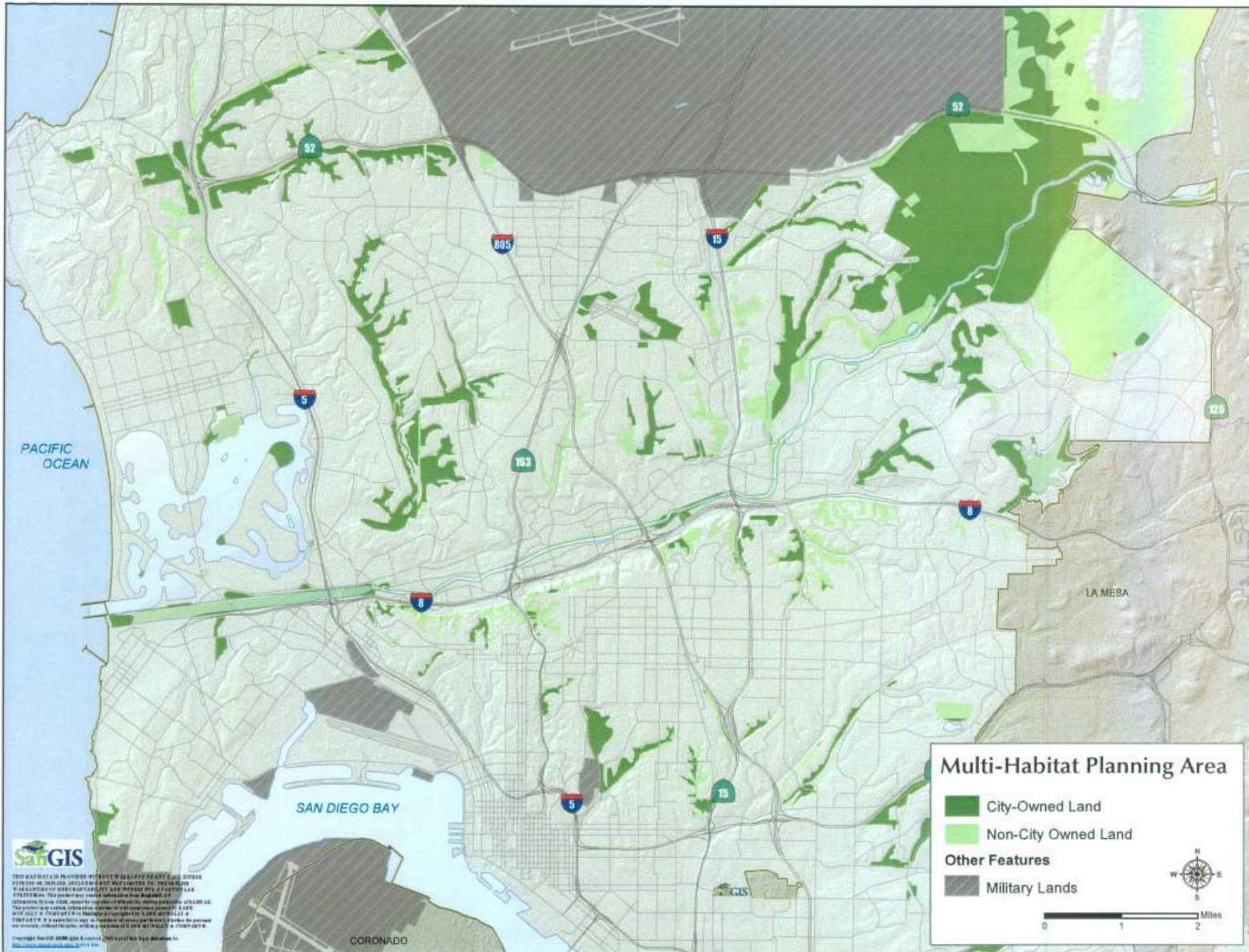


Figure 7. Multiple Species Conservation Program (MSCP) Subarea Plan Map

### **6.1.6 SAN DIEGO RIVER WATERSHED URBAN RUNOFF MANAGEMENT PLAN**

The San Diego River Watershed Urban Runoff Management Plan (WURMP) is required by the San Diego Regional Water Quality Control Board, which issues the National Pollutant Discharge Elimination System (NPDES) Municipal Storm Water Permit (Municipal Permit) to the municipalities in the San Diego Region (“Copermittees”) to control waste discharges in urban runoff from the Municipal Separate Storm Sewer Systems (MS4). For more information refer to section 2.6.5 below. The Municipal Permit requires the Copermittees in the San Diego River watershed management area (WMA), consisting of the City of San Diego, City of El Cajon, (Lead Watershed Permittee), City of La Mesa, City of Santee and the County of San Diego, to work collaboratively at the watershed level to develop and implement the San Diego River WURMP. The Storm Water Department is the lead for the City of San Diego’s effort in this program.

The program’s goal is to positively affect the San Diego River Watershed water resources while balancing economic, social, and environmental constraints. The following four objectives addresses the Program’s goal: 1) Develop and expand methods to assess and improve water quality within the watershed; 2) Integrate watershed principles into land use planning; 3) Enhance public understanding of water pollution sources; and 4) Encourage and develop stakeholder participation. The program’s collective watershed strategy includes activity planning, monitoring, priority assessment, selection, implementation and assessing effectiveness. The San Diego River WURMP is reviewed annually to identify modifications and improvements.

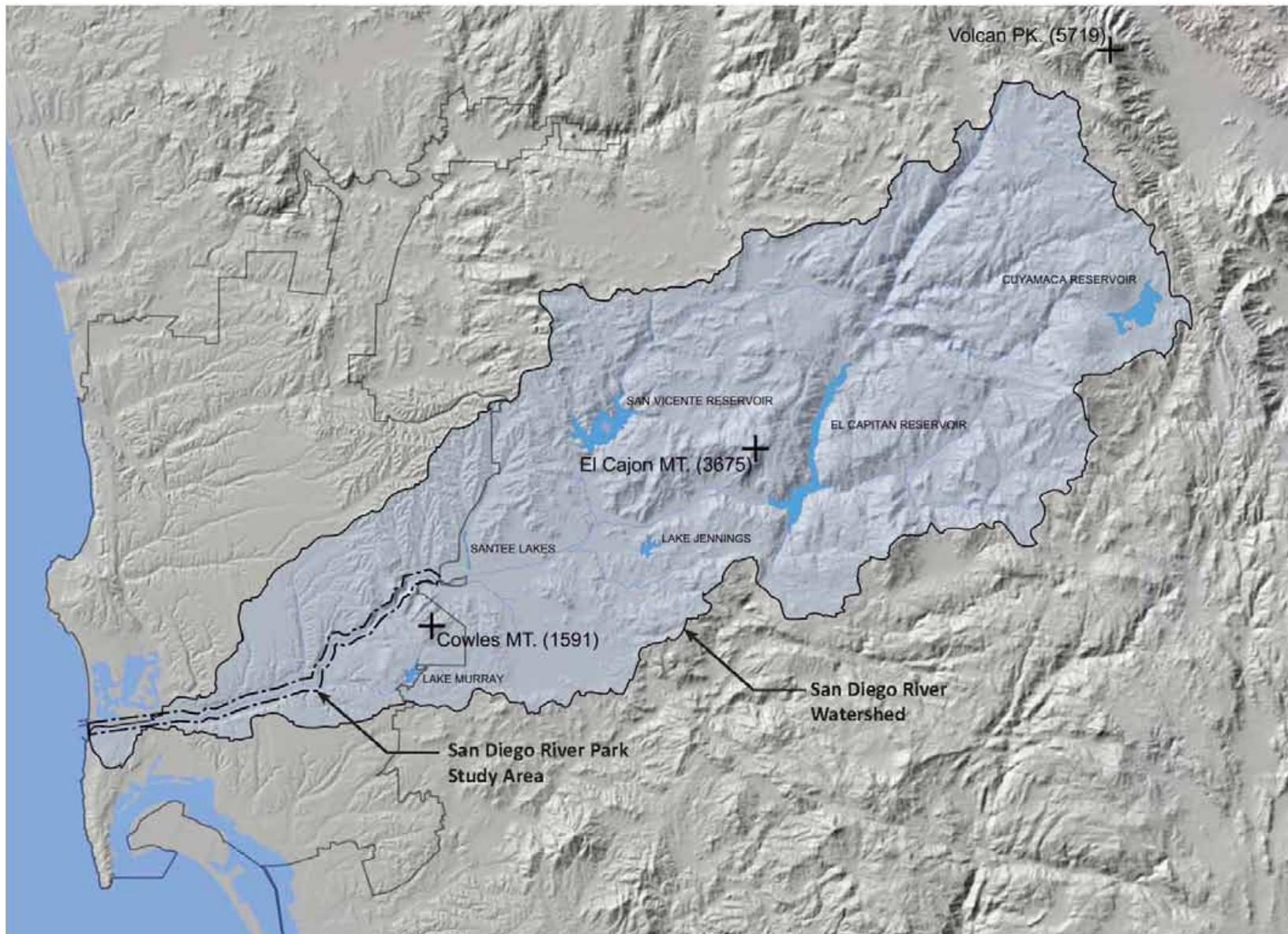


Figure 8. San Diego River Watershed

### **6.1.7 BICYCLE MASTER PLAN UPDATE**

The first Bicycle Master Plan was adopted by City Council on May 28, 2002. The Bicycle Master Plan Update is in progress and is scheduled to be adopted in 2010. The City of San Diego Bicycle Master Plan was created to promote a more bicycle friendly city, and thereby contribute to an elevated quality of life for all San Diegans.

The Bicycle Master Plan cites two primary goals:

- Implement a reliable alternative form of transportation (bicycle) to ease the city's growing traffic congestion.
- Increase the city's quality of life by promoting cycling as a recreational activity.

Safety is a primary concern for current and would-be cyclists. Making a safe and easily accessible bicycle infrastructure is a priority for this planning effort. This infrastructure should meet the needs of both the daily commuters and the casual recreational users.

The Bicycle Master Plan incorporates the San Diego River bicycle corridor. It identifies connections between the river corridor's fragmented collection of Class I bikeways and the city's bicycle network. The Bicycle Master Plan also describes peripheral connections perpendicular to the river that link the surrounding communities with the main multi-use river pathway.

### **6.1.8 SAN DIEGO PEDESTRIAN MASTER PLAN**

The City of San Diego is developing a Pedestrian Master Plan to improve mobility and neighborhood quality through the enhancement of the pedestrian environment. The Pedestrian Master Plan includes a comprehensive analysis of each community's existing pedestrian conditions and needs with an emphasis on community input.

The Pedestrian Master Plan cites four primary goals:

- **Safety:** Create a safe pedestrian network free of barriers and tripping hazards that has sufficient street crossings, buffer pedestrians from vehicles and has facilities wide enough to accommodate peak pedestrian use.
- **Accessibility:** Make facilities accessible to pedestrians of all abilities and meet all local, state and federal requirements.
- **Connectivity:** Develop a complete pedestrian network that provides direct and convenient connections for neighborhoods, employment centers, transit stations, public places and community destinations.
- **Walkability:** Create pedestrian facilities that offer amenities to encourage usage and to enhance the pedestrian experience.



## **6.2 APPLICABLE AGENCY JURISDICTION AND PERMITS**

In addition to the City of San Diego citywide policy documents, there are a number of local, state, and federal agencies that also have direct or indirect involvement with land planning, resource protection and permit approvals for the San Diego River area. Depending on the type of project proposed in the river valley area, these agencies will need to be consulted and in some cases permits will be required. This section provides a brief description of each of these agencies and what they govern.

### **6.2.1 UNITED STATES ARMY CORPS OF ENGINEERS (ACOE)**

The ACOE and the United States Environmental Protection Agency (EPA) have established policy and procedures to undertake enforcement of the permit requirements of the Clean Water Act (CWA), Section 404. Under the CWA, it is unlawful to discharge dredge or fill material into waters of the United States without first receiving authorization (usually a permit) from the ACOE, unless the discharge is covered under an exemption. The term “waters of the United States” defines the extent of geographic jurisdiction as waters or rivers, lakes, streams, tidal water, and most wetlands. A discharge of dredged or fill material involves the physical placement of soil, sand, gravel, dredged material or other such materials into the waters of the United States. Some activities resulting from implementation of the master plan may require individual or nationwide permits. The ACOE would need to be consulted for a determination on an individual project’s need for a permit at the time of a project proposal.

### **6.2.2 UNITED STATES FISH AND WILDLIFE SERVICE (USFWS)**

The USFWS is the principal Federal agency that provides information to the public on the extent and status of the nation’s wetlands. For this reason the USFWS acts in an advisory role with projects requiring an ACOE and/or City of San Diego permit. The USFWS also serves other permitting agencies in an advisory capacity. Of particular importance to the USFWS is the status of plants and animals on the List of Endangered and Threatened Species, which are protected under the federal Endangered Species Act of 1973. The USFWS is also concerned with protecting bird species covered by the Federal Migratory Bird Treaty Act of 1916, as amended in 1994. The USFWS has signed an Implementing Agreement with the City of San Diego for the MSCP Subarea Plan and therefore the USFWS has a participating role in the planning/permit process for the MHPA areas of the master plan.

### **6.2.3 CALIFORNIA COASTAL COMMISSION (CCC)**

The CCC was established by voter initiative in 1972 (Proposition 20) and later made permanent by the legislature through adoption of the California Coastal Act of 1976. The CCC in partnership with coastal cities and counties plans and regulates the use of land and water in the coastal zone. Development activities, which are broadly defined by the Coastal Act include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of the land or public access to coastal waters, and generally require a coastal permit from either the Coastal Commission or the local government. Within the master plan area, the CCC jurisdiction extends from the Pacific Ocean to the railroad tracks located east of Interstate 5. The CCC has given permit authority to the City of San Diego and all development within the coastal zone of the master plan is subject to a City of San Diego Coastal Development Permit.

### **6.2.4 CALIFORNIA DEPARTMENT OF FISH AND GAME (CDFG)**

The CDFG is a department within the government of California, falling under its parent California Natural Resources Agency. The CDFG manages and protects the state's diverse fish, wildlife, plant resources, and native habitats. To meet this responsibility, the Fish and Game Code (Section 1602) requires an entity to notify CDFG of any proposed activity that may substantially modify a river, stream or lake. Modification could include: substantially diverting or obstructing the natural flow of any river, stream or lake; substantially changing or using any material from the bed, channel, or bank of, any river, stream, or lake; or deposit or disposal of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. If the CDFG determines that the activity may substantially adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be required. The Agreement will include reasonable conditions necessary to protect those resources and must comply with the California Environmental Quality Act. The CDFG has also signed an Implementing Agreement with the City of San Diego for the MSCP Subarea Plan and therefore the CDFG has a participating role in the planning/permit process for the MHPA areas of the master plan.

### **6.2.5 REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)**

The San Diego RWQCB, which is one of the nine RWQCB in the State of California, administers National Pollutant Discharge Elimination System (NPDES) permits in the San Diego Region. A NPDES permit would be required for any future activity disturbing one or more acres of ground within the master plan area. In California, the RWQCB is also responsible for administering Section 104 of the Federal Clean Water Act, which requires that an applicant for a federal license or permit provide a certificate that any discharges from the facility will comply with the Clean Water Act, including water quality standard requirements. Some activities resulting from implementation of the master plan may require

NEPDES permits and the RWQCB would need to be consulted for a determination on an individual project's need for a permit at the time of a project proposal.

### **6.2.6 SURFACE MINING AND RECLAMATION ACT OF 1975 (SMARA)**

SMARA, which was enacted in 1975 and amended several times, is intended to provide protection and subsequent beneficial use of mined lands. SMARA allows for continued use of surface mining operation and aims to assure that mine lands are reclaimed to a usable condition that is readily adaptable for alternative land uses. Particular emphasis for re-use of mined lands is given to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment. In accordance with SMARA, a report including details of the mining operation and its reclamation plan must be filed with the State Geologist and local lead agency each year. SMARA would apply to areas adjacent to and within the master plan area where resource extraction activities are ongoing or planned in the future.

### **6.2.7 CITY OF SAN DIEGO MUNICIPAL CODE AND LAND DEVELOPMENT CODE**

The entire master plan area lies within the jurisdiction of the City of San Diego and is subject to the City's Municipal Code and Land Development Code. Within the City's Municipal Code, Section 43.0104, Environmental Health Quality Controls 'San Diego River –Bathing Prohibited', it is unlawful for any person or persons to swim wade or bathe in the waters of the San Diego River within the limits of the city of San Diego. The Land Development Code provides development regulations for all zones and land uses. Within the San Diego River Park area the land is subject to:

- Mission Valley Planned District Ordinance (Chapter 15, Article 14, Division 1-4)
- Community Plan Implementation Overlay Zone (Chapter 13, Article 2 Division 14)
- Mission Trails Design District (Chapter 13, Article 2, Division 12)
- Environmentally Sensitive Lands Regulation (Chapter 14, Article 3, Division 1)

The Mission Valley Planned District Ordinance regulates development with the intent to, "implement the Mission Valley Community Plan through the use of overlay districts regulating development intensity community wide and providing additional development criteria for projects in the San Diego River and Hillside sub-districts..." The River Sub-district of the Mission Valley PDO establishes a River Corridor Area and River Influence Area, and to identifies allowed uses and development regulations to implement the master plan. Public and private projects within the PDO River Sub-district are required to undergo a discretionary review process and apply for a Mission Valley Development Permit.

The Community Plan Implementation Overlay Zone provides supplemental development regulations that are tailored to specific sites within community plan areas of the city. The Navajo Community Plan has a CPIOZ Type A and B as shown on Diagram 132-14E (Map No. C-779). The map of the Overlay Zone includes the San Diego River Sub-district, Type B to implement the master plan. Public and private projects within the Navajo CPIOZ River Sub-district, Type B are required to undergo a discretionary review process and apply for a Site Development Permit.

The Mission Trails Design District provides supplemental development regulations for property surrounding Mission Trails Regional Park. The intent of these regulations is, "to ensure that development along the edges of Mission Trails Regional Park enhances the park's natural qualities and promote the aesthetic and functional quality of park/urbanization relationships..." All development is to comply with the Mission Trails Design District Guidelines. There are three sub-areas in the Mission Trails Design District Guidelines that overlay areas of Navajo, Tierrasanta and East Elliot Communities. Subarea 3 establishes a River Corridor Area and River Influence Area, and identifies allowed uses and development regulations to implement the master plan. Public and private projects within the Subarea 3 of the Mission Trails Design District Design Guidelines are required to undergo a discretionary review process and apply for a Site Development Permit.

The Environmentally Sensitive Lands ordinance (ESL) regulates development with the intent to, "protect, preserve and, where damaged restore, the environmentally sensitive lands of San Diego and the viability of the species supported by those lands". The ESL regulations implement the MSCP Subarea Plan and provide regulations on impacts to wetlands. It should be noted that a wetland buffer is required for all wetlands as appropriate to protect the functions and values of the wetland and that the wetland buffer maybe larger or smaller than the MHPA boundary and the San Diego River Park area.

All projects located in the floodplain must comply with the City's and the Federal Emergency Management Agency (FEMA) regulations to reduce risk of flooding along the San Diego River. The City is a participant in the National Flood Insurance Program (NFIP) administered by FEMA. This program provides subsidized flood insurance for all property owners when their properties are constructed in compliance with the floodplain regulations. The City's ordinance institutes adequate flood control measures for prevention and reduction of property damage from flooding. The City meets this requirement via the Land Development Code Environmentally Sensitive Lands (ESL) regulations for development in the floodplain. The City ensures that projects within the floodplain comply with FEMA regulations and requirements. All projects that propose a change to the existing FEMA mapped floodway or floodplain must meet this requirement by applying through the City and then submitting a Conditional Letter of Map Revision (CLOMR) or a Conditional Letter of Map Revision-Based on Fill (CLOMR-F) to FEMA. If the project is approved by FEMA, the City will issue a grading permit. After completion of construction, the applicant is required to finalize the map amendment process by submitting a Letter of Map Amendment (LOMA) or a Letter of Map Revision-Based on Fill (LOMR-F) to FEMA for final review and approval.

All proposed projects within or adjacent to the river would need to consult with the city for a determination on what types of permits are required and the process for approval. Project proposals are submitted to the Development Services Department of the city for processing and this department serves as a liaison between the city, city departments, the public, and resource agencies. Projects that propose impacts to wetlands shall confer with the US Army Corps of Engineers, U.S. Fish and Wildlife Service and California Department of Fish and Game before any public hearing for the development proposal. The project applicant shall solicit input from the Resource Agencies on impact avoidance, minimization, mitigation and buffer requirements. Grading and construction permits shall not be issued for any project that impacts wetlands or 'Listed' non-covered species habitat until all necessary federal and state permits have been obtained.

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# APPENDIX A – MASTER PLANNING AND PUBLIC OUTREACH EFFORT

## RIVER PARK ORIGINS

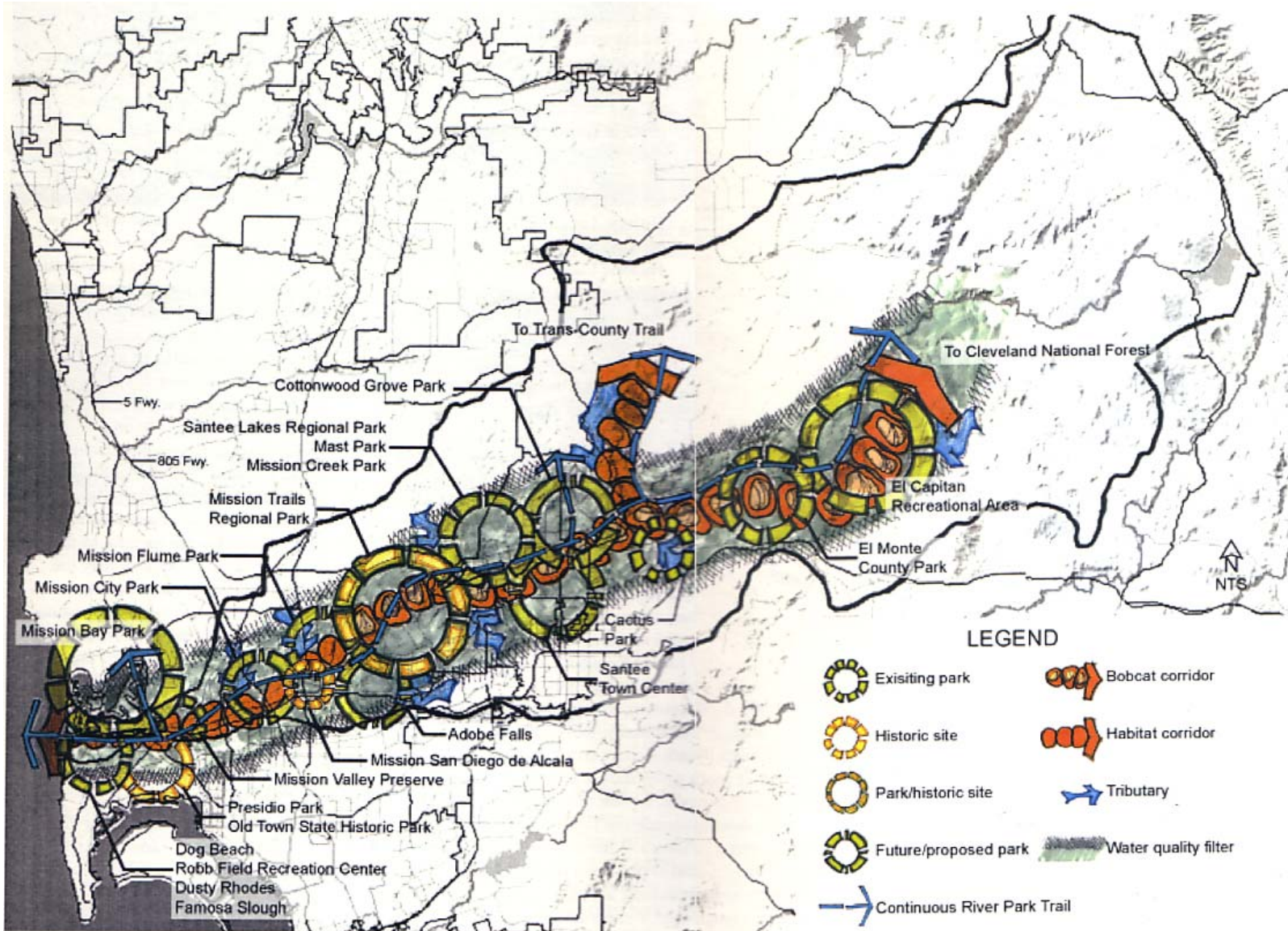
In 2001, City of San Diego Mayor Dick Murphy invited federal, state, county, City of San Diego and City of Santee elected officials to form the San Diego River Park Alliance. The alliance provided support on political issues relating to the creation of the San Diego River Park, and envisioned a San Diego 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](http://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

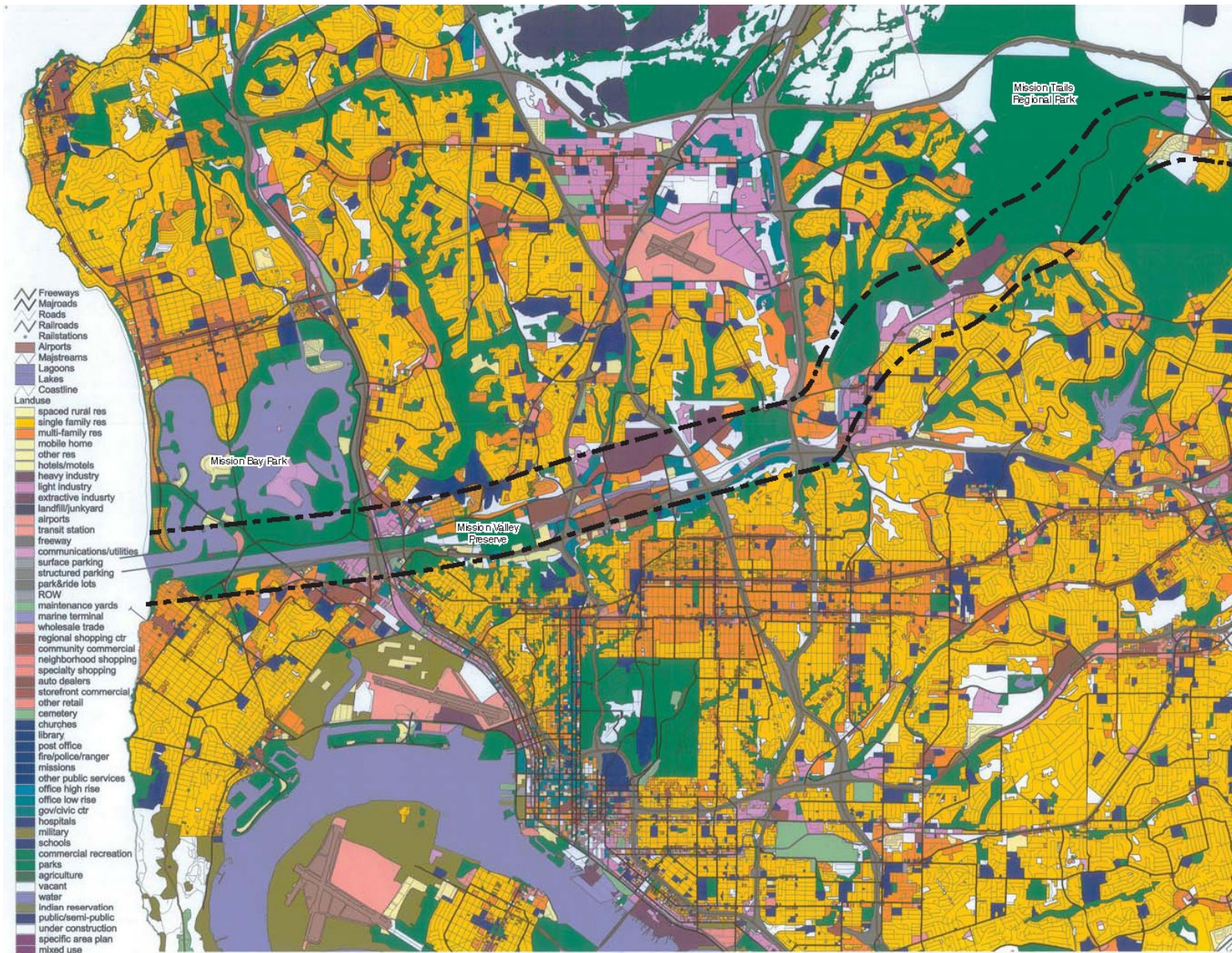
Constrained by private development, utility rights-of-way and industrial uses, the San Diego River has been impacted by channelization, levees and dams, resulting in intermittent flooding of the private development that have been constructed within the floodplain. The study area land use includes significant 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

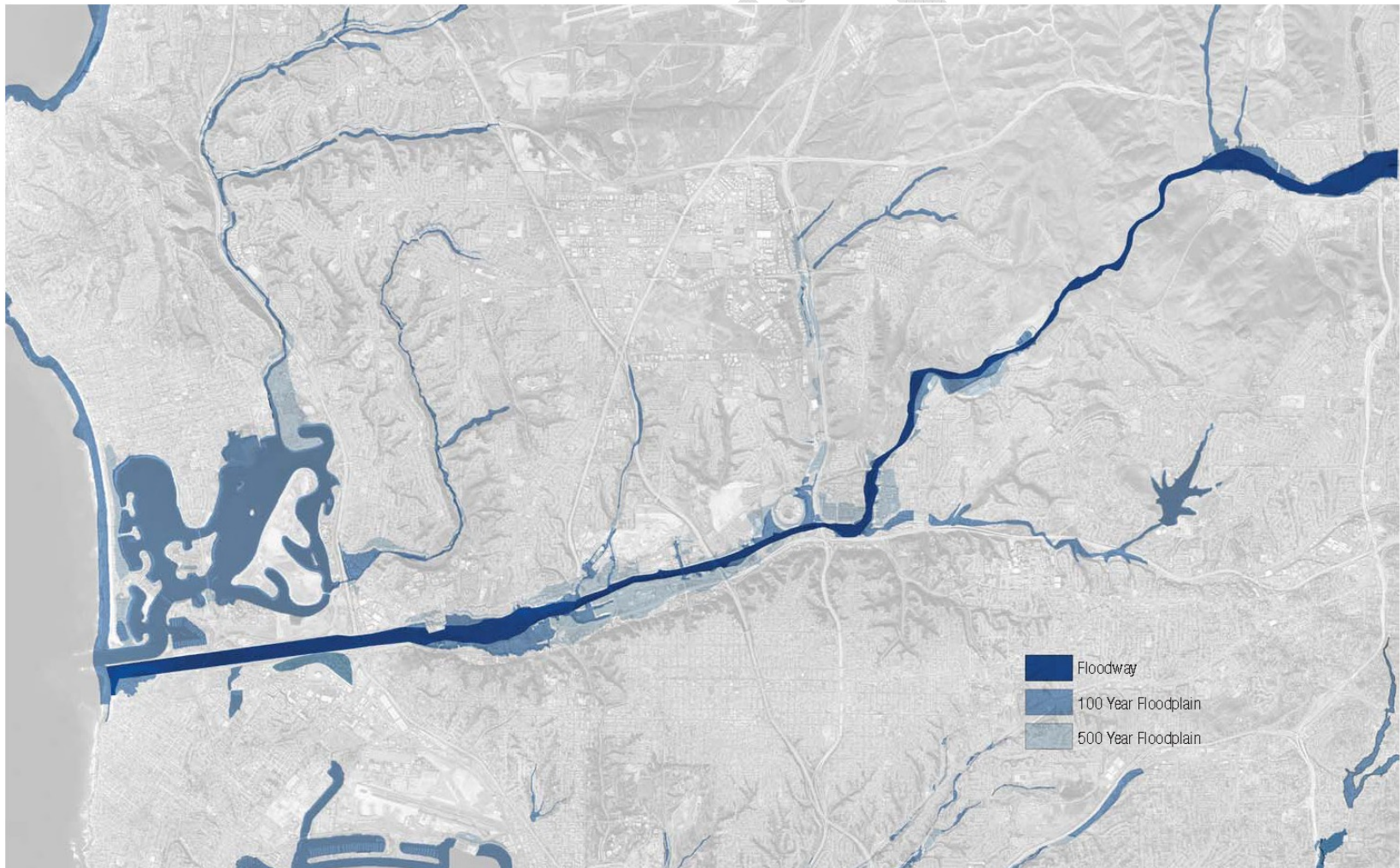
Significant segments of the study area include publicly owned land, including Mission trails Regional Park, Qualcomm Stadium, mission Valley Preserve, Southern Wildlife Refuge and Mission Bay Park. Significant land area is also publicly held roadway rights-of-way, or in ownership by transportation entities, 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

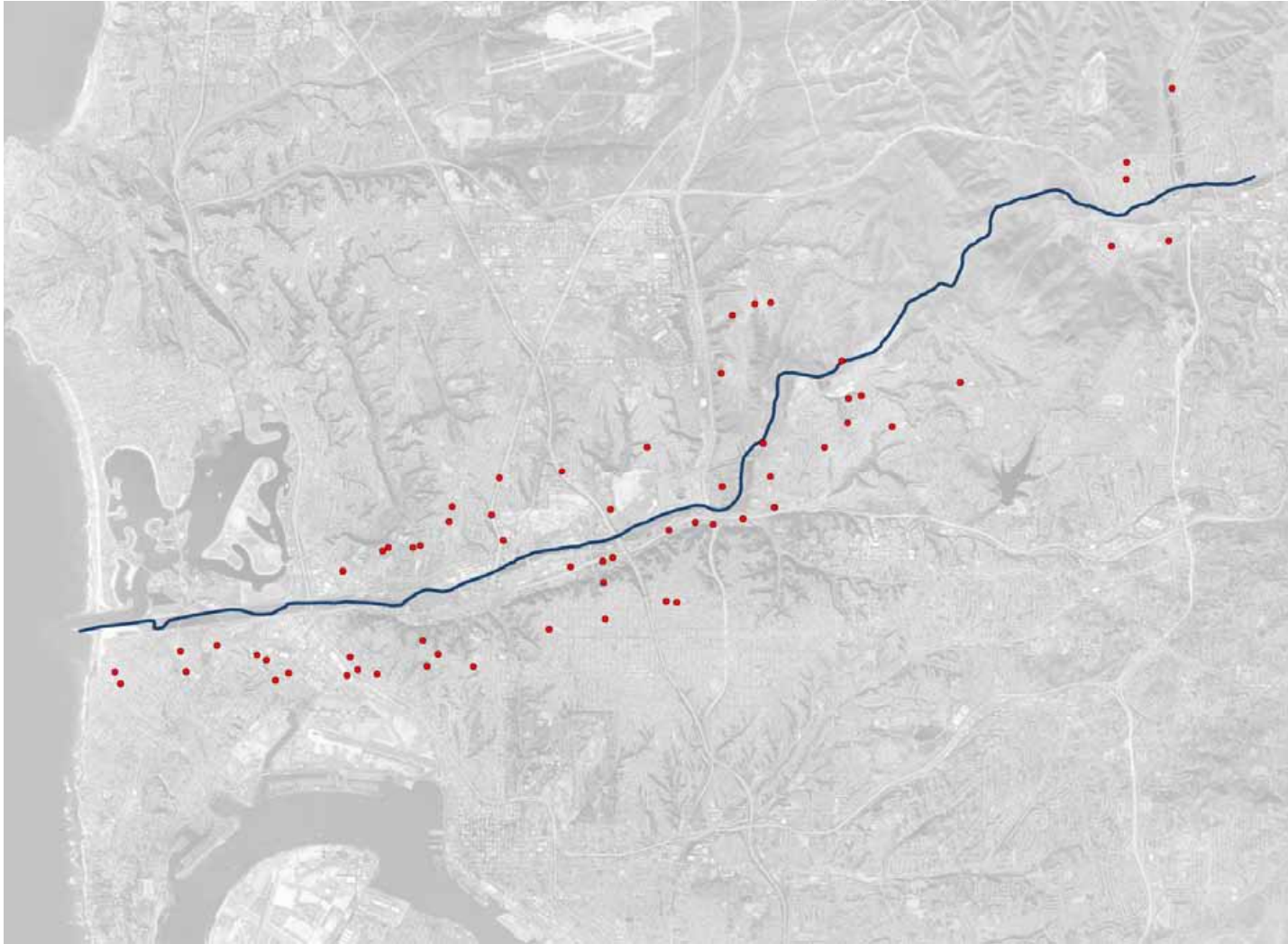
Historically the floodplain included the entire valley floor, the whole Mission Valley floor, the entire Mission Bay and what is now Ocean Beach, extending to San Diego Bay. The remarkably narrow floodway today is the result of numerous manipulations of both stream flow and the channel.



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).

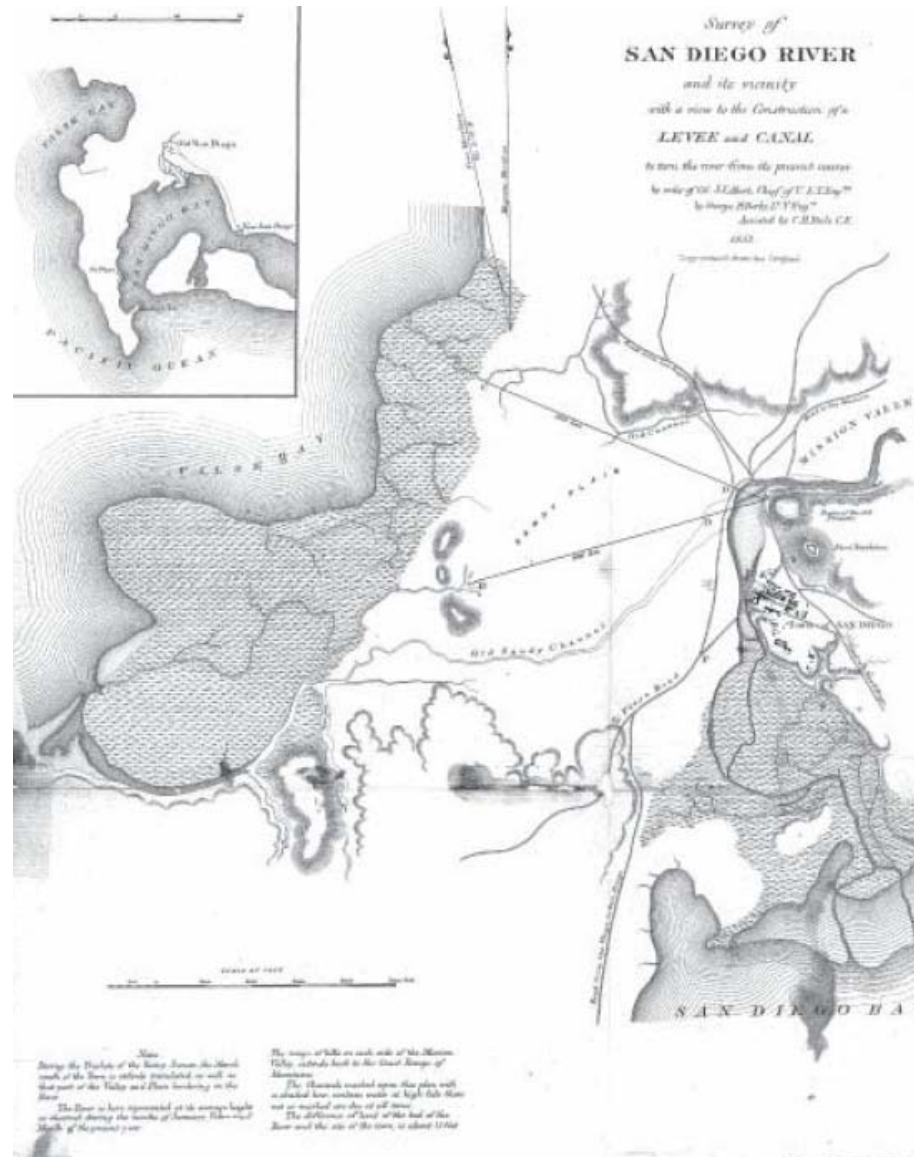


1916 Flood at Old Town San Diego Source: San Diego Historical Society



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

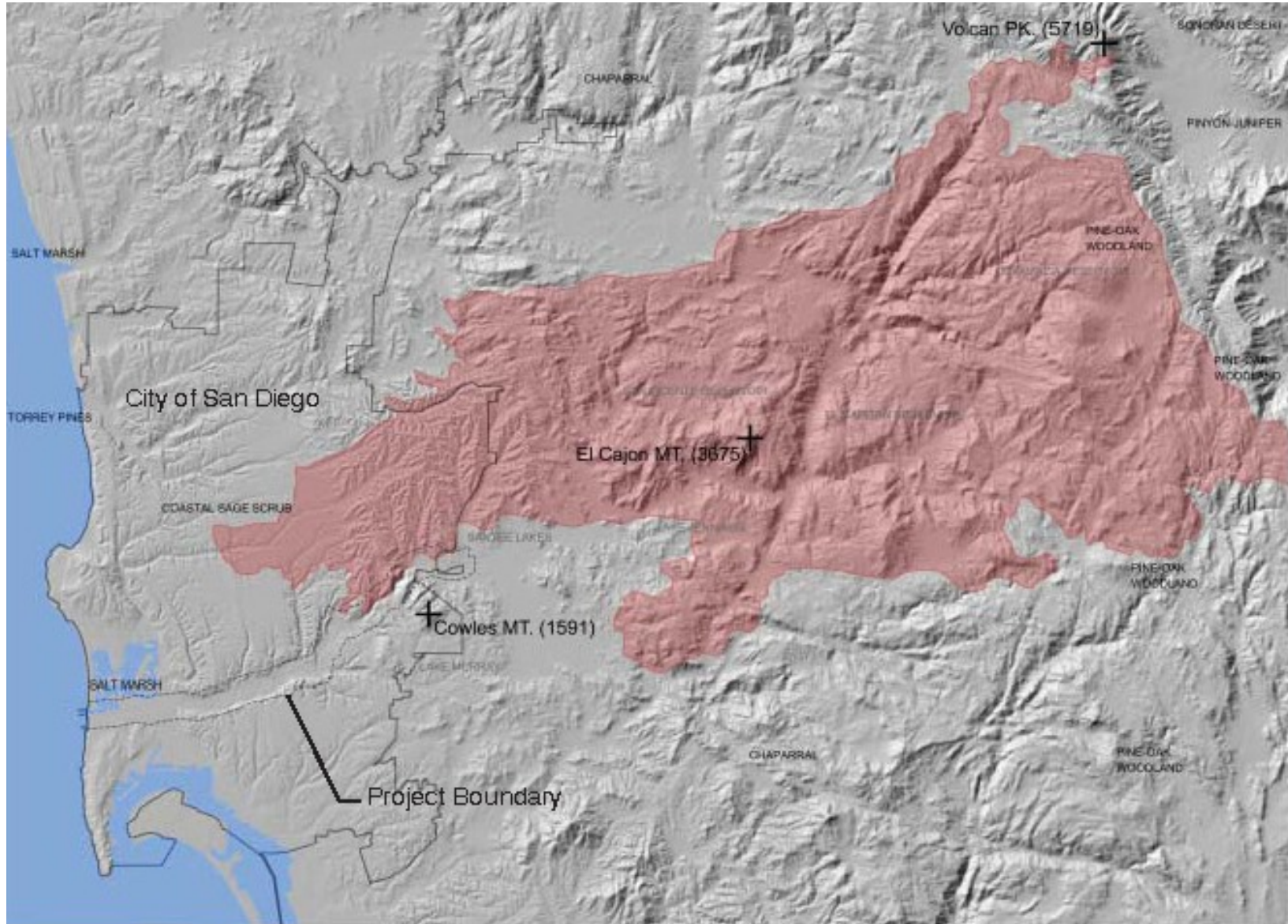
## **FLOOD DISTURBANCE**

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.





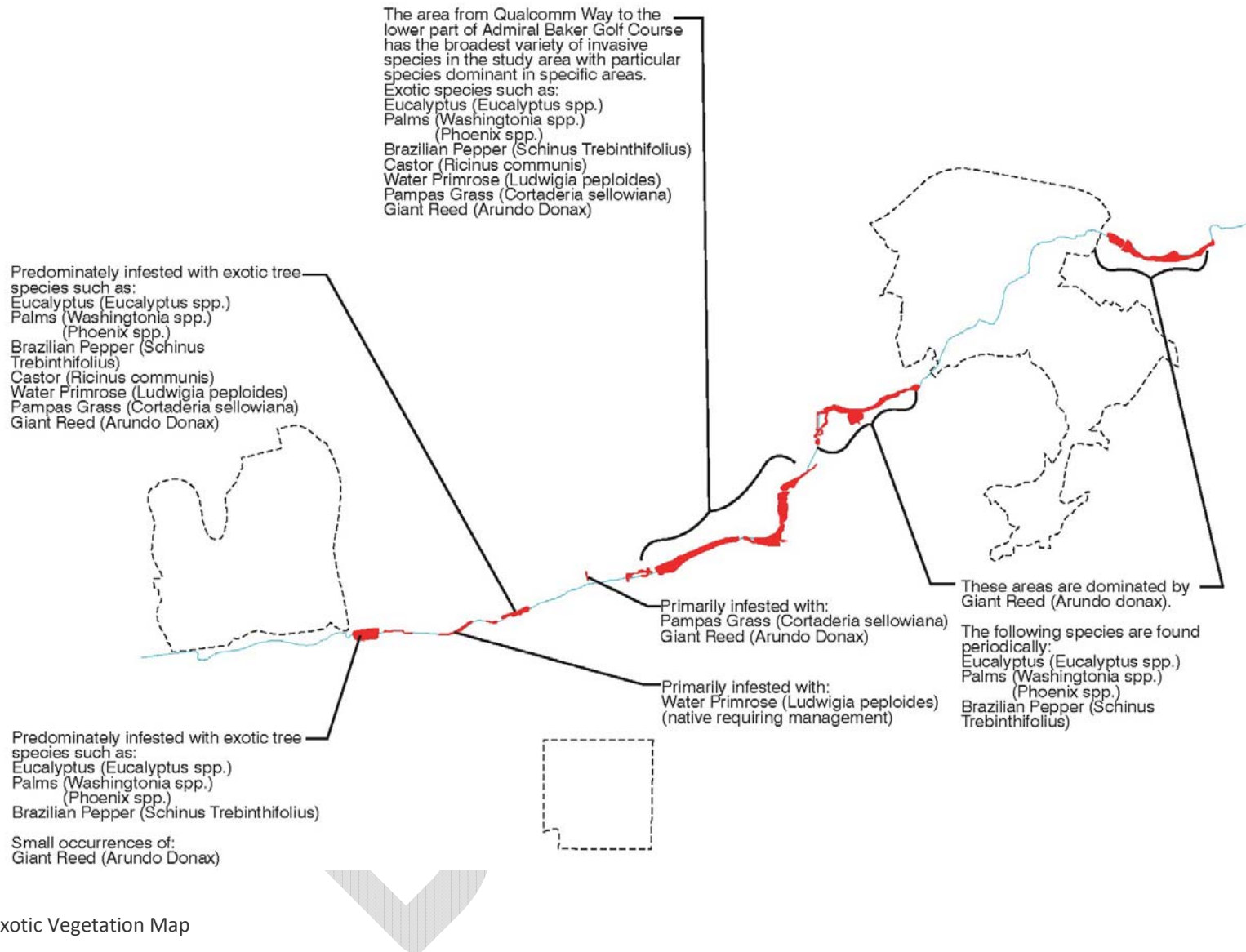
Cedar Fire Disturbance Area

## 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.

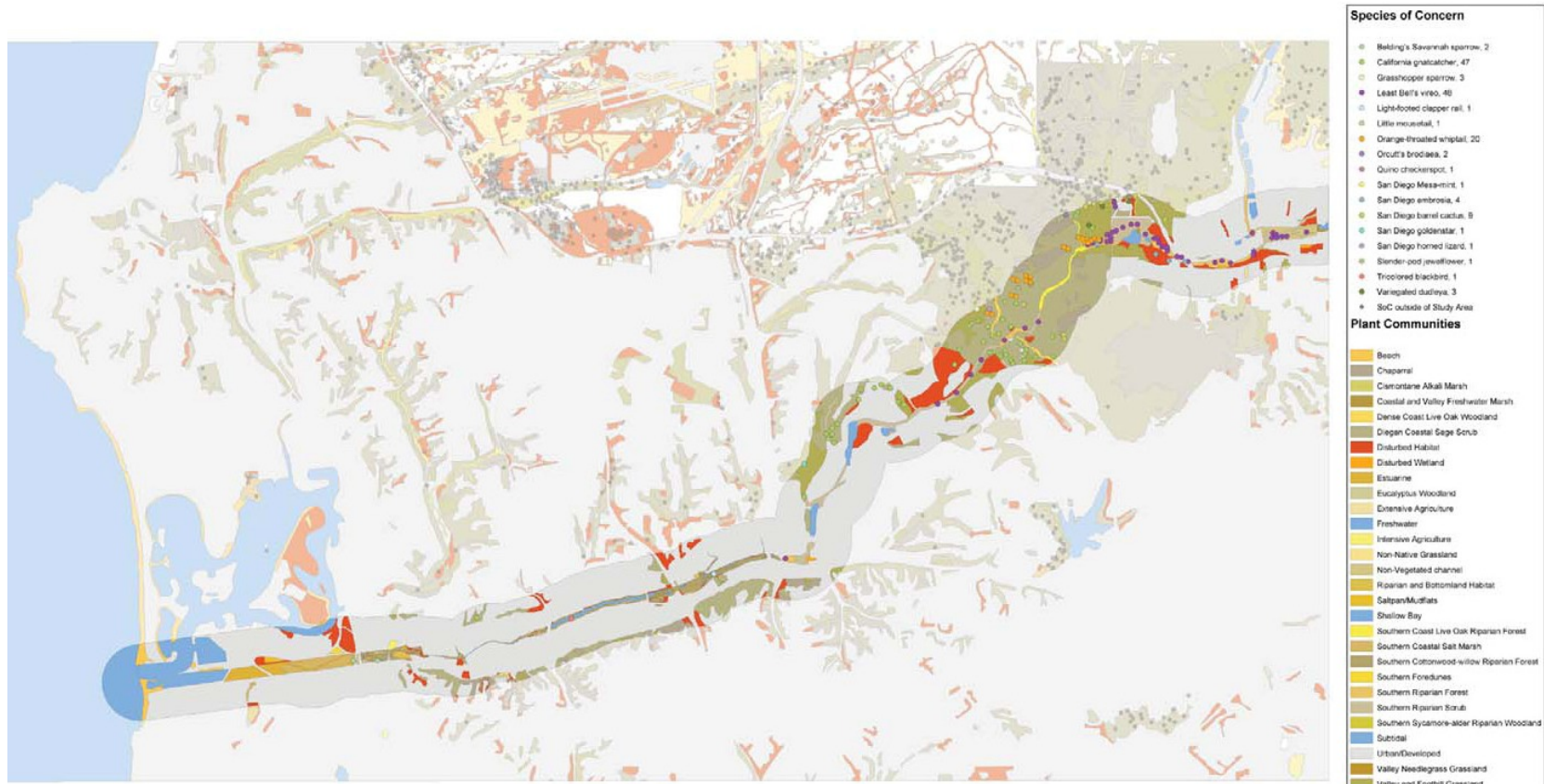
Development encroaches on the river for much of its length, with the only significant area of contiguous quality habitat being Mission Trails Regional Park. Below MTRP, the only areas that still support native plant communities and continue to function as habitat are lands that were historically unbuildable, 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 aphyllia*) 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 mouseltail	<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

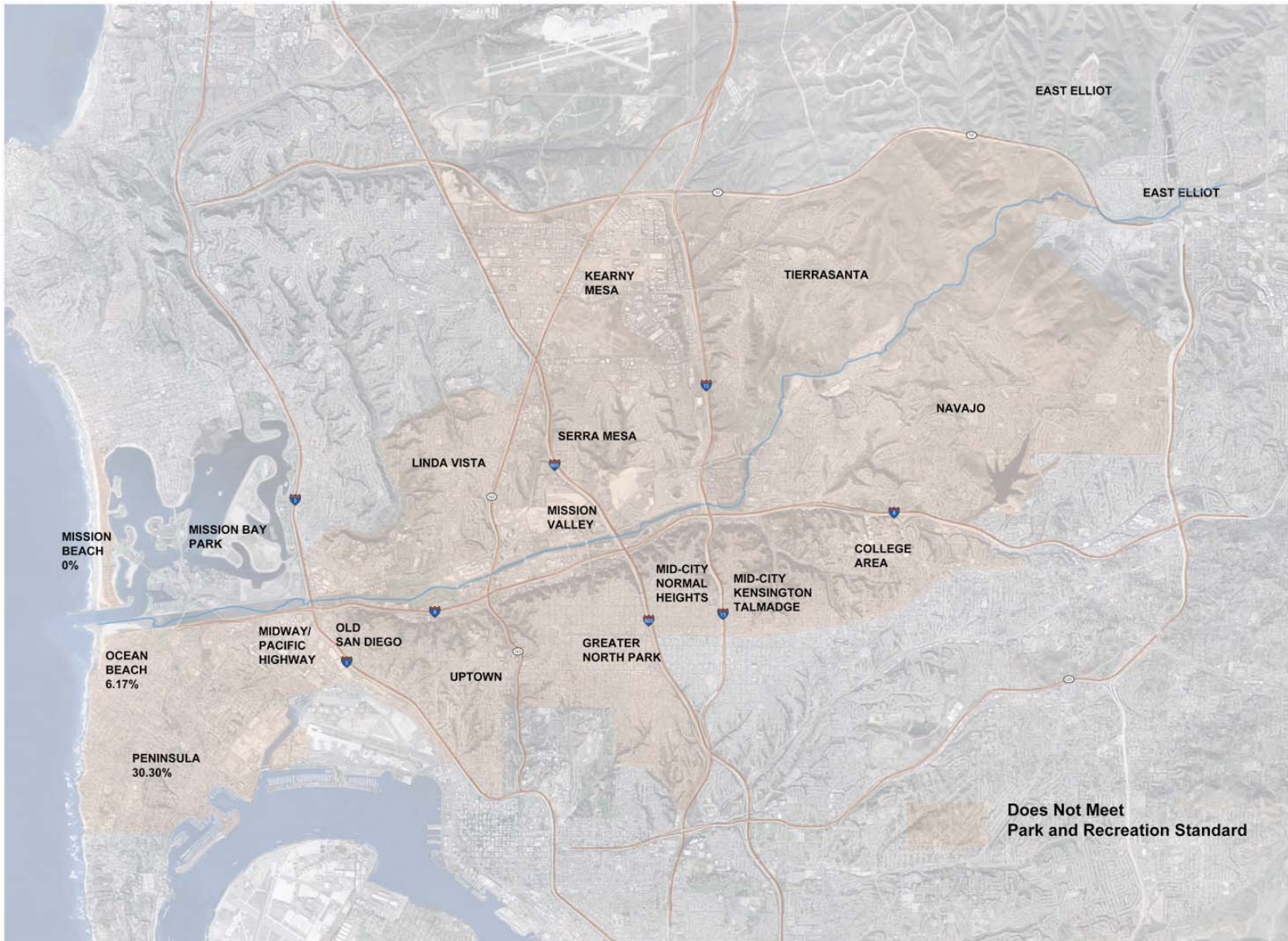
### Recreation Introduction

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.

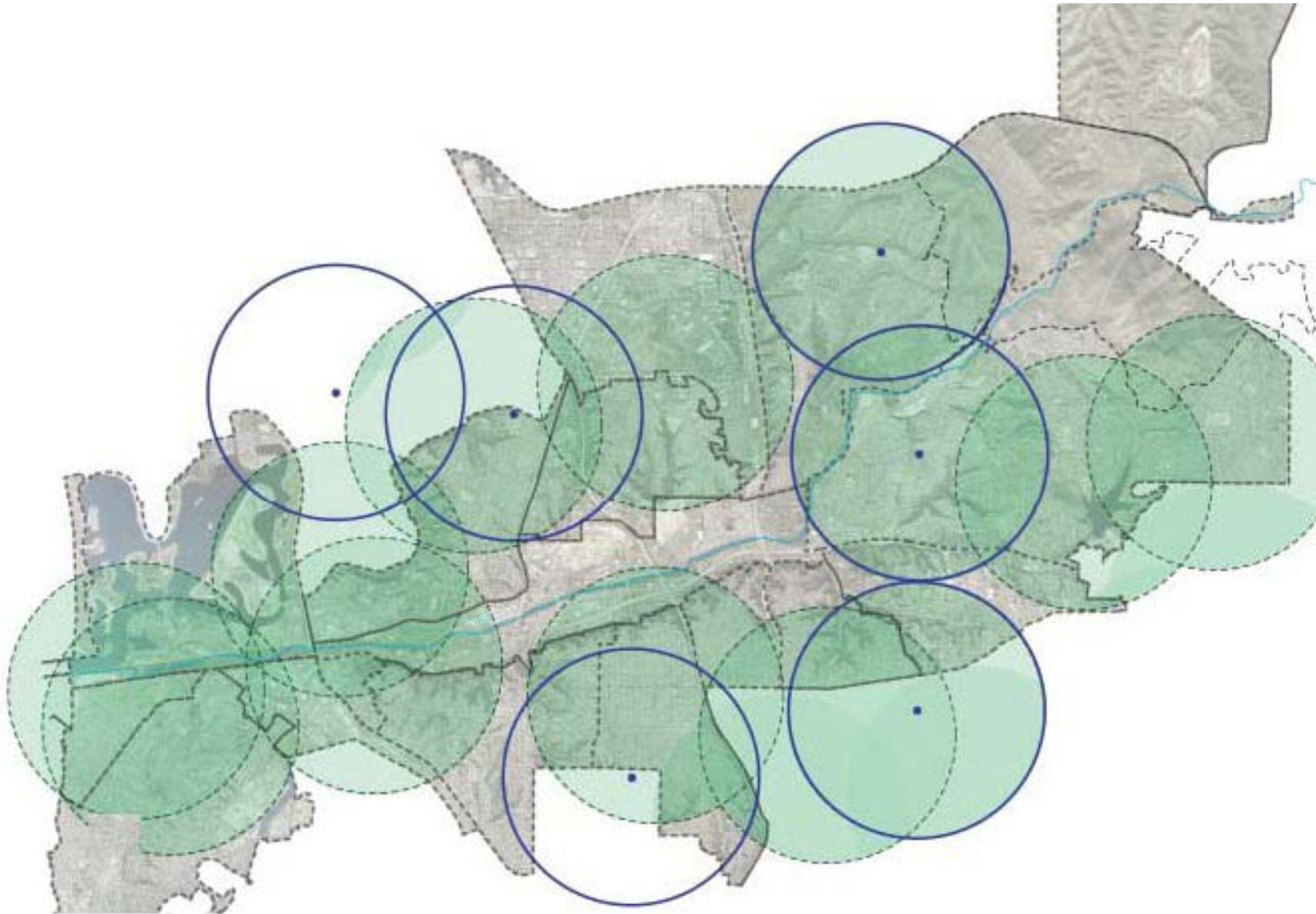
### **Analysis of Recreation within Community Plan Areas**

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.

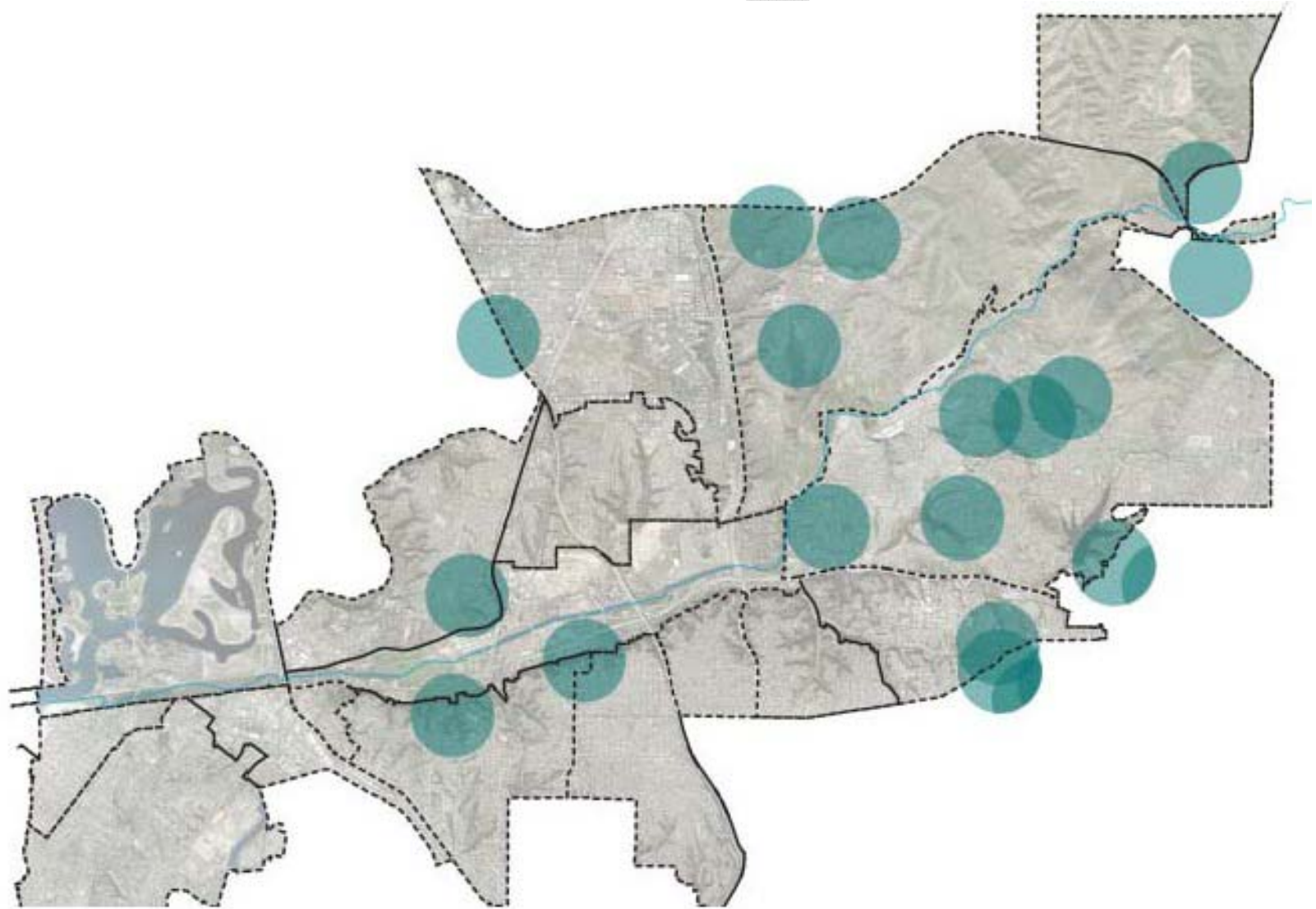
Using 2.8 acres of population-based parks per 1000 residents and the most recent population figures and SANDAG projections, the Park and Recreation Department determines the population-based park acreage goal for each community. Using these calculations, the Park and Recreation Department has determined 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

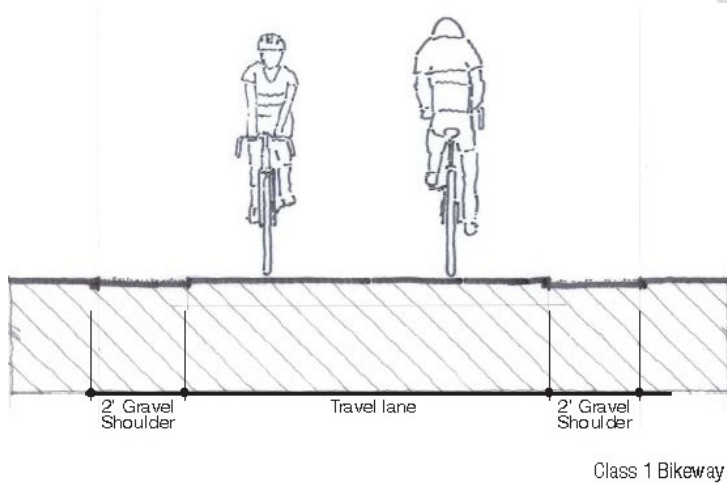
- Sea World
- Old Town State Historic Park
- Presidio Park
- Serra Museum
- San Diego Mission and School
- Mission Valley Library
- Mission Bay Concessions
- Hotels, resorts
- Sports Arena
- Qualcomm Stadium
- Fashion Valley Mall/Cinemas
- Mission Valley Mall/Cinemas
- USD facilities
- Restaurants and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

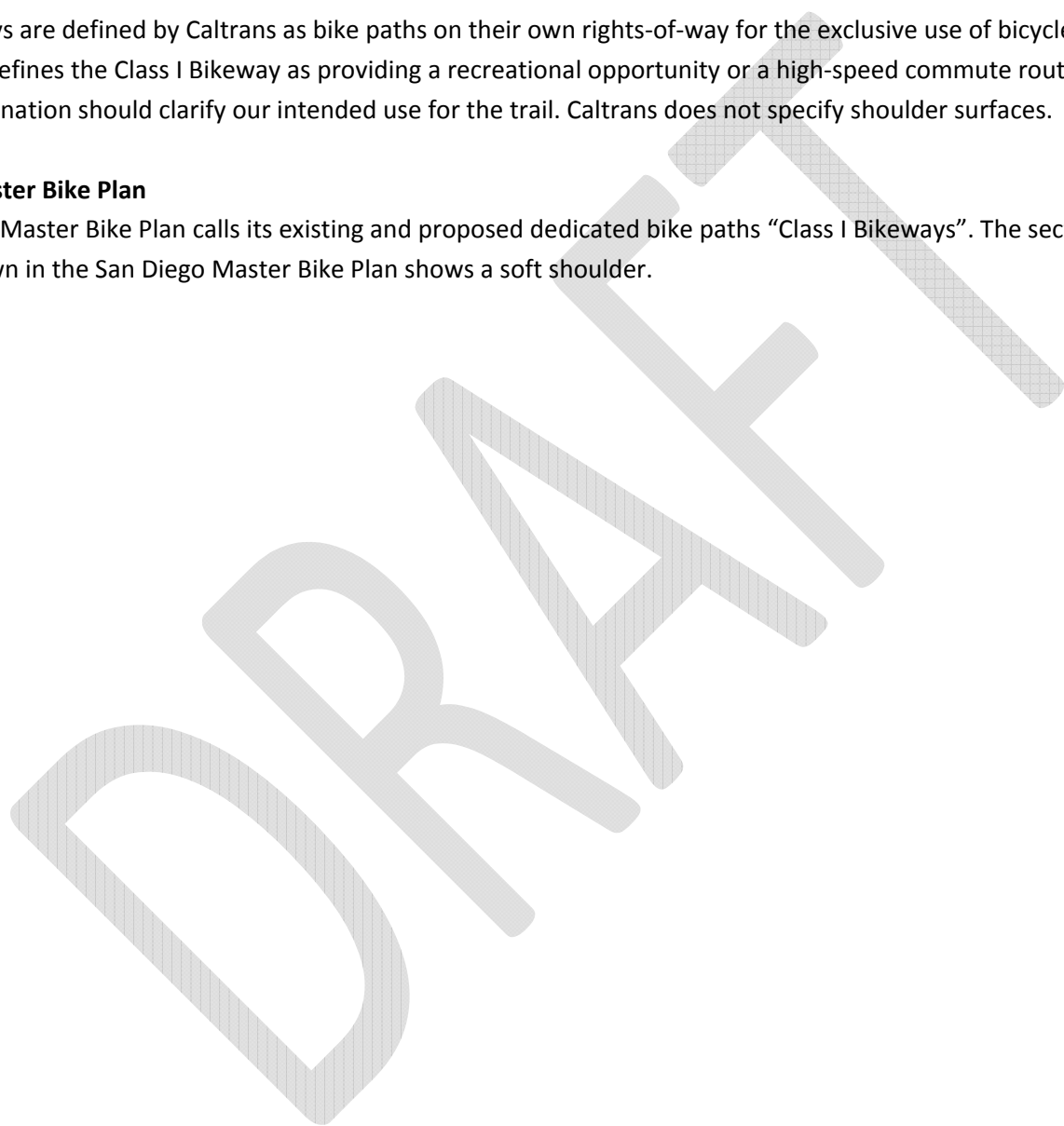
Refer to Design Guidelines, Section 5.0, for specific pathway and trail definitions used in this Master Plan.

**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

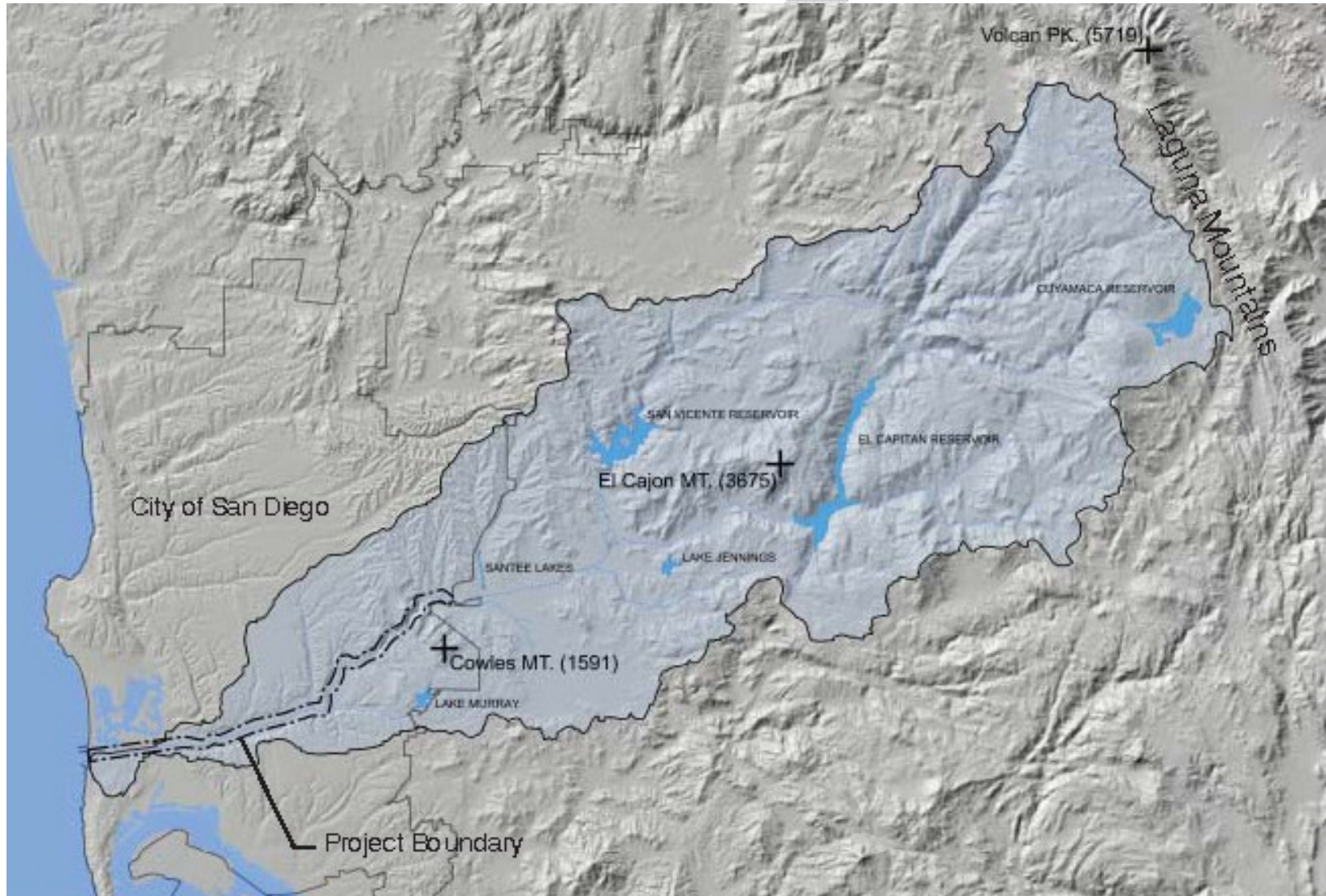
Rivers have been fundamental to the shaping of the earth's surface since vapor first coalesced into raindrops and fell to earth. Since then, by collecting into ever larger and more powerful channels from rivulets to gullies to streams and rivers, water has carved the surface of the earth and redistributed 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.

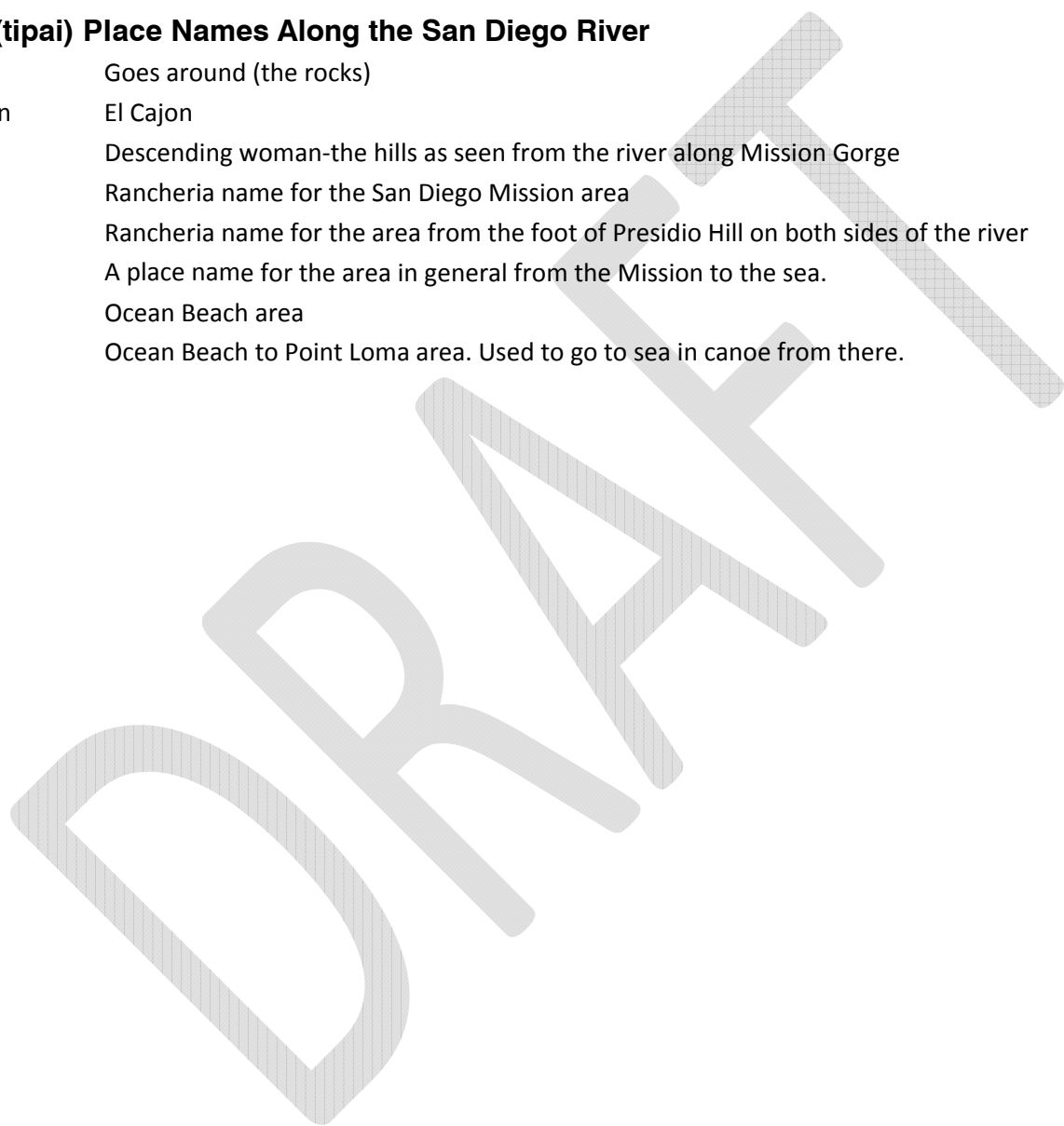
### **Opportunities and recommendations**

- 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

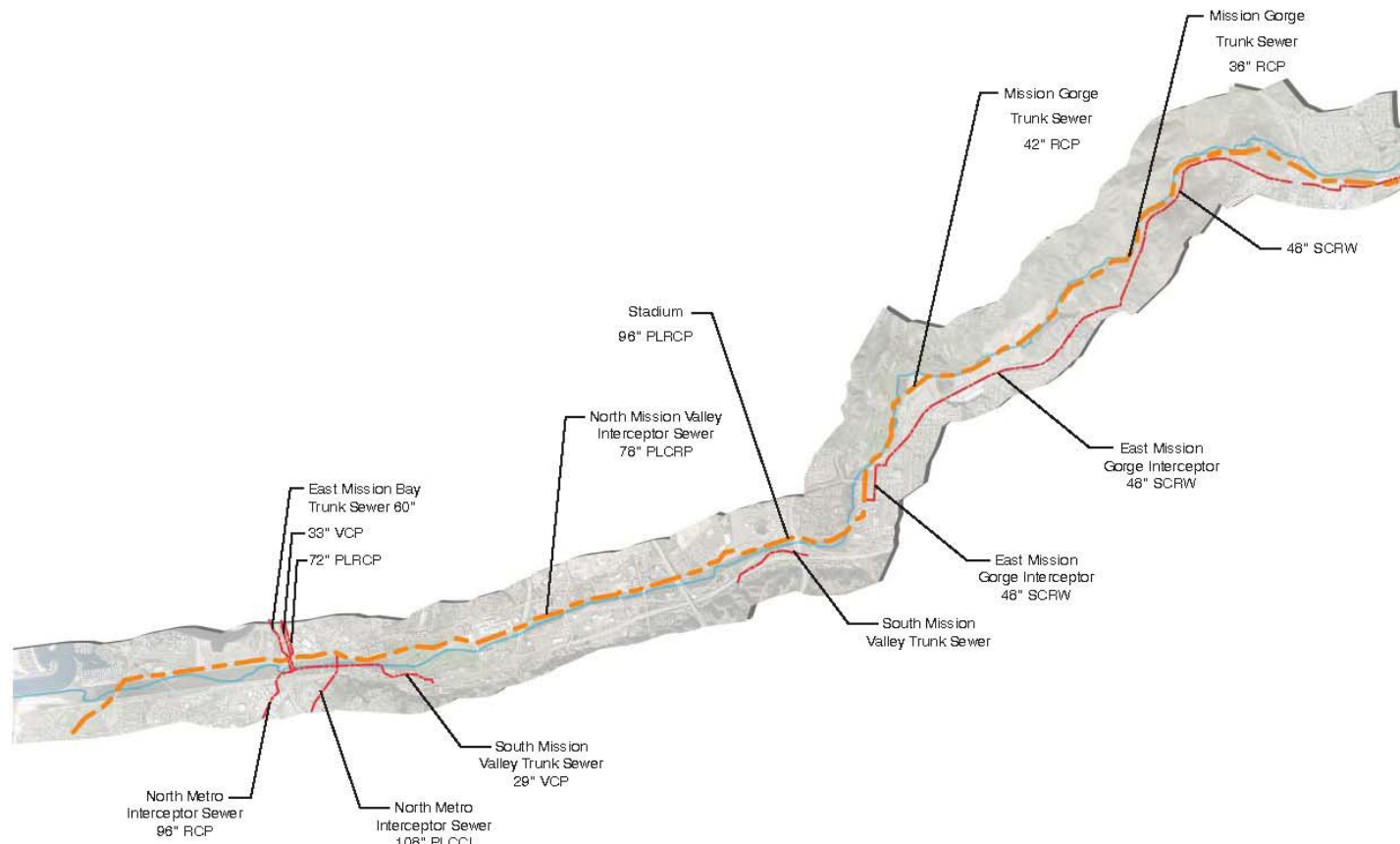
### UTILITIES

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**

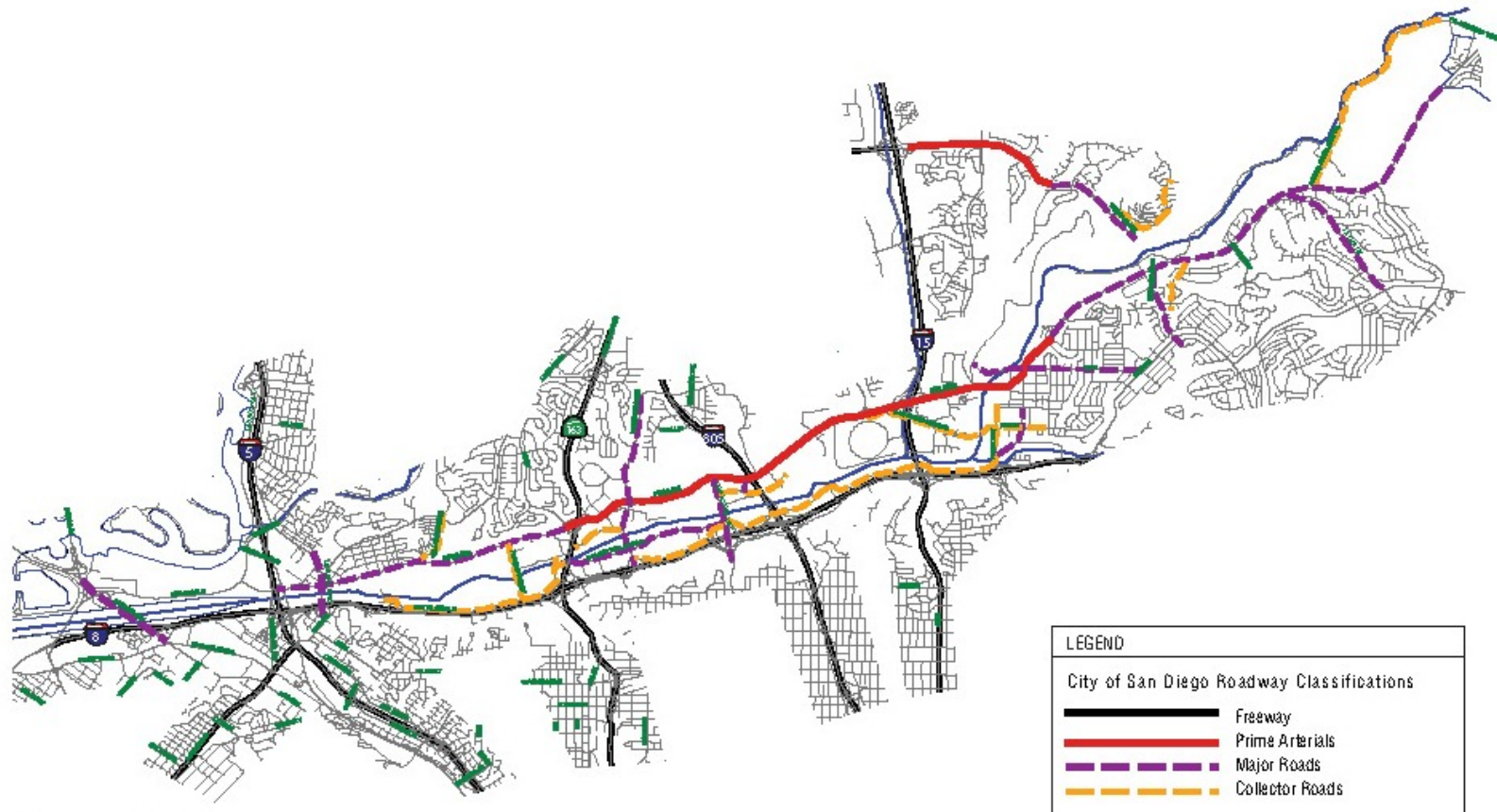
Gas transmission lines exist at points along the river banks, crossing the river at several locations.



# 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.



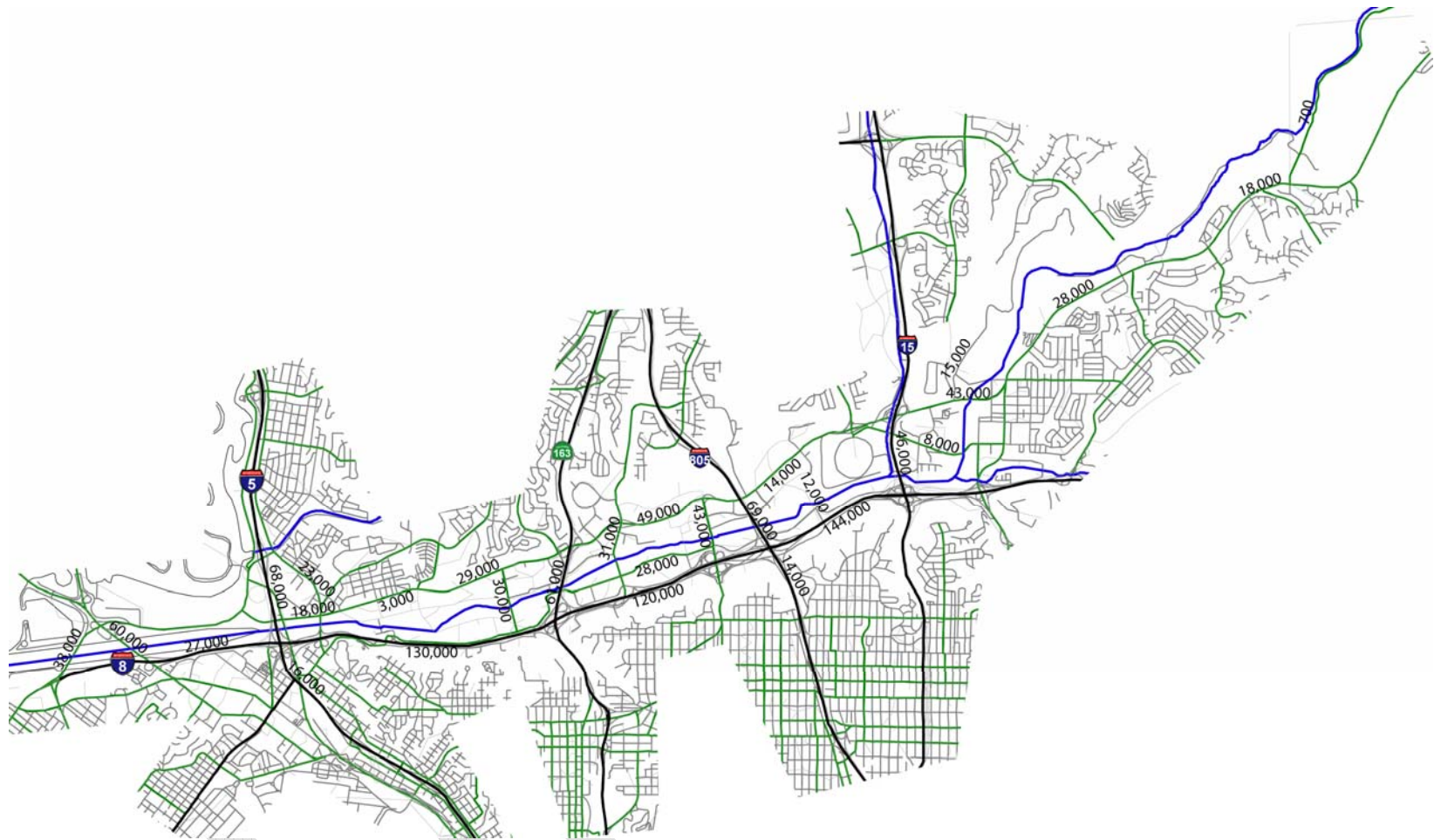
Existing Roadways

## **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.

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Roadway Volume

## VEHICULAR CIRCULATION

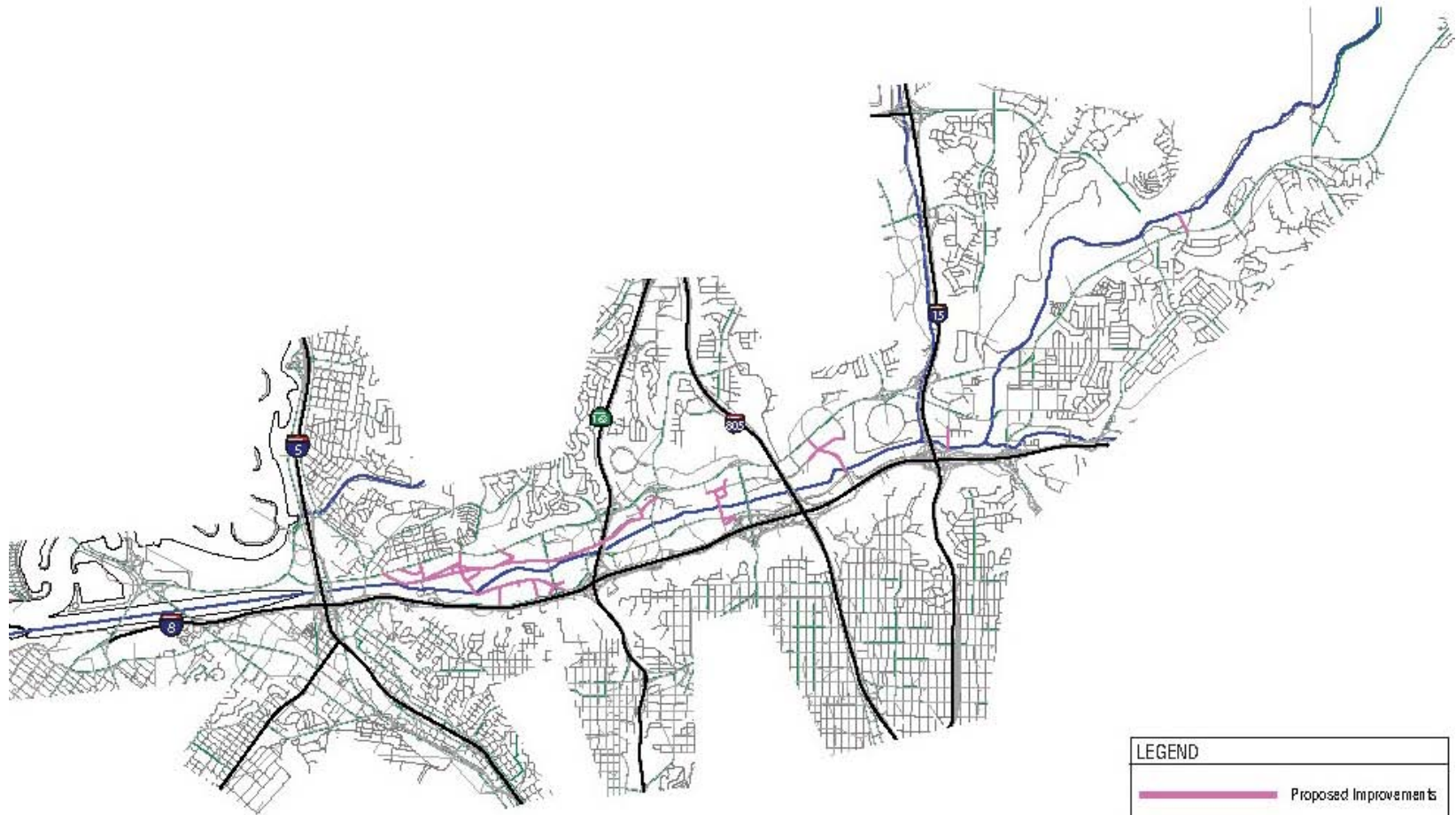
Roadway segments in the area generally operate at their optimal capacities, with the exception of Sports Arena Boulevard between I-8 and Midway Drive and Rosecrans/Camino Del Rio West between Midway and I-8/I-5 interchange. These segments and adjacent intersections are highly congested during peak hours. 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**

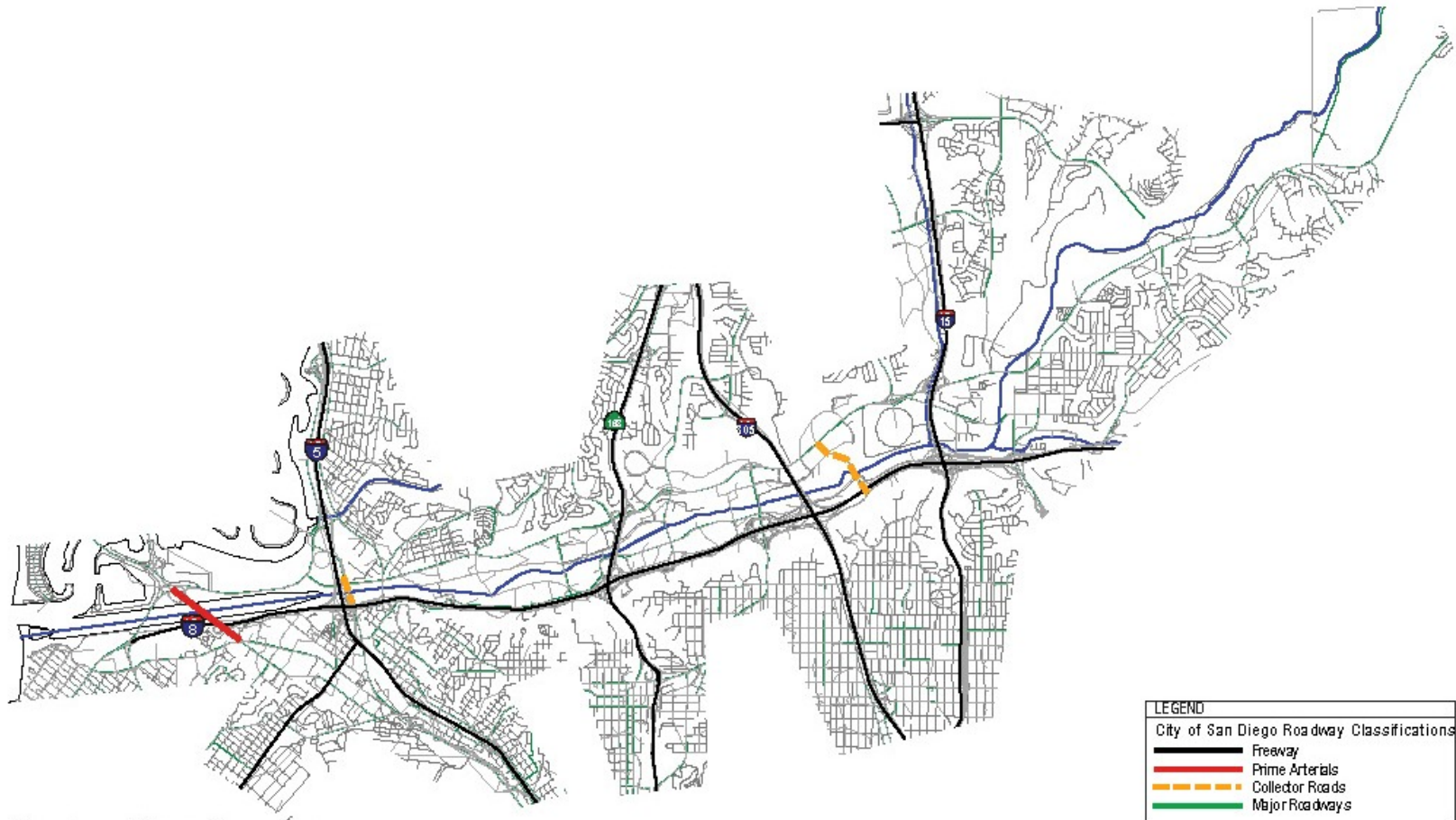
SANDAG's Regional Transportation Plan for 2030 directs improvements to many freeways and major roads that cross or are in the immediate vicinity of the river. These plans include:

- 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

LEGEND	
	Proposed Improvements



#### 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.

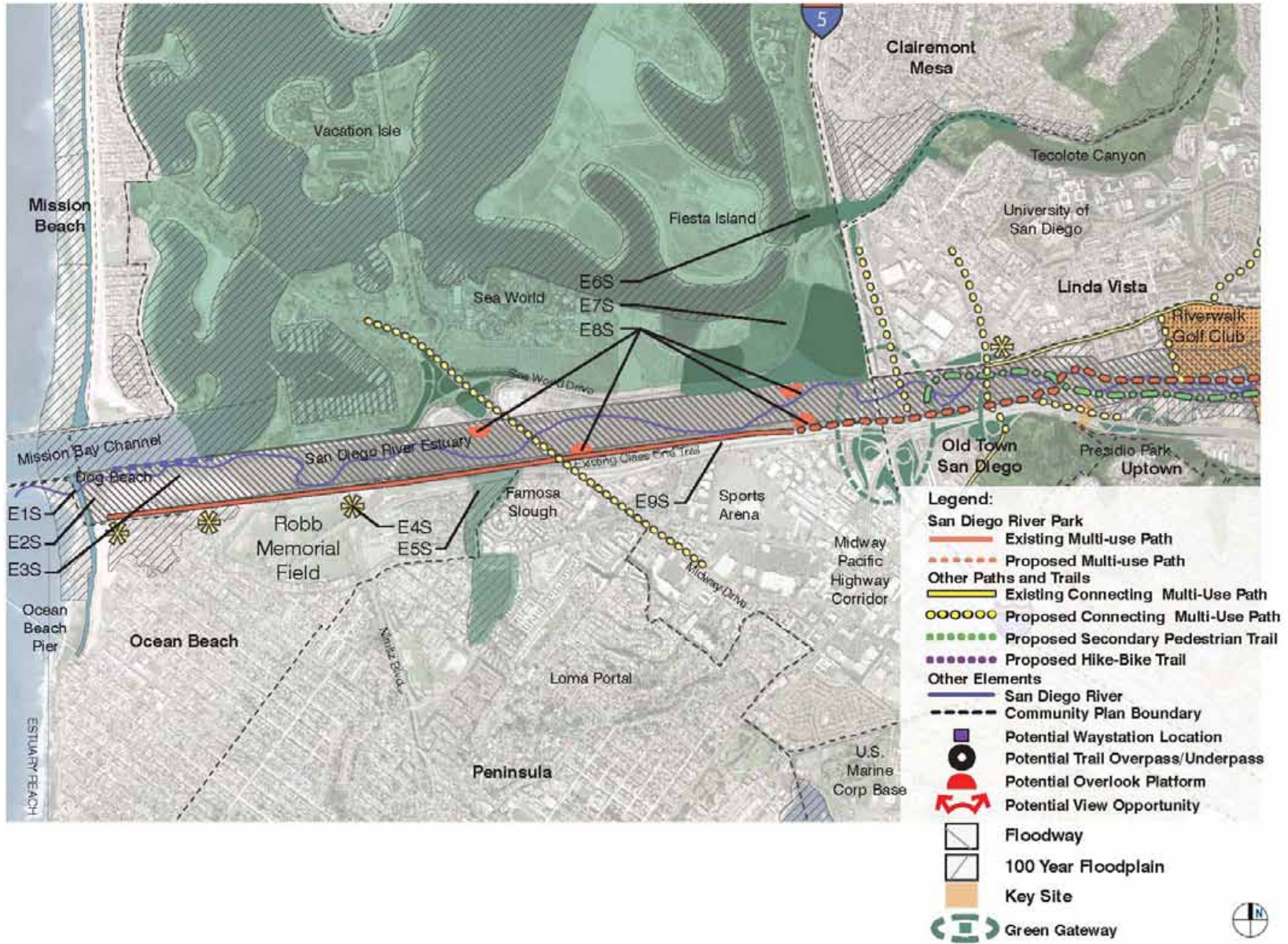
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## APPENDIX I - RECOMMENDATION MATRICES SUGGESTED IN PUBLIC MEETINGS

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.

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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 zfor 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 do 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 plant 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

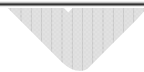
E19S Support and build upon access and interpretation zone at Mission Valley Preserve.

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.

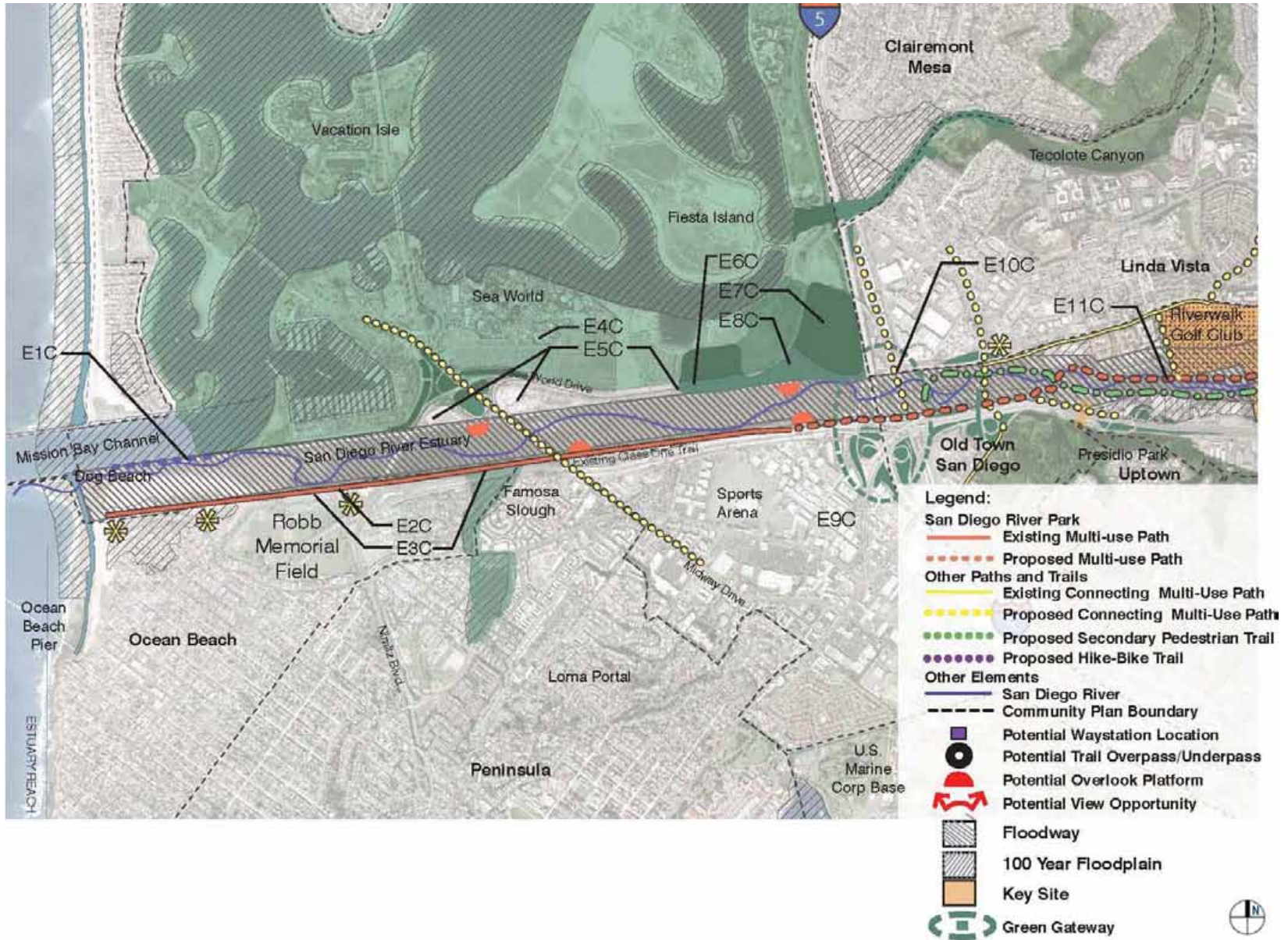


IMPLEMENTATION

RECREATION	EDUCATION	IMPLEMENTATION
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

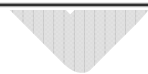
## BENEFITS

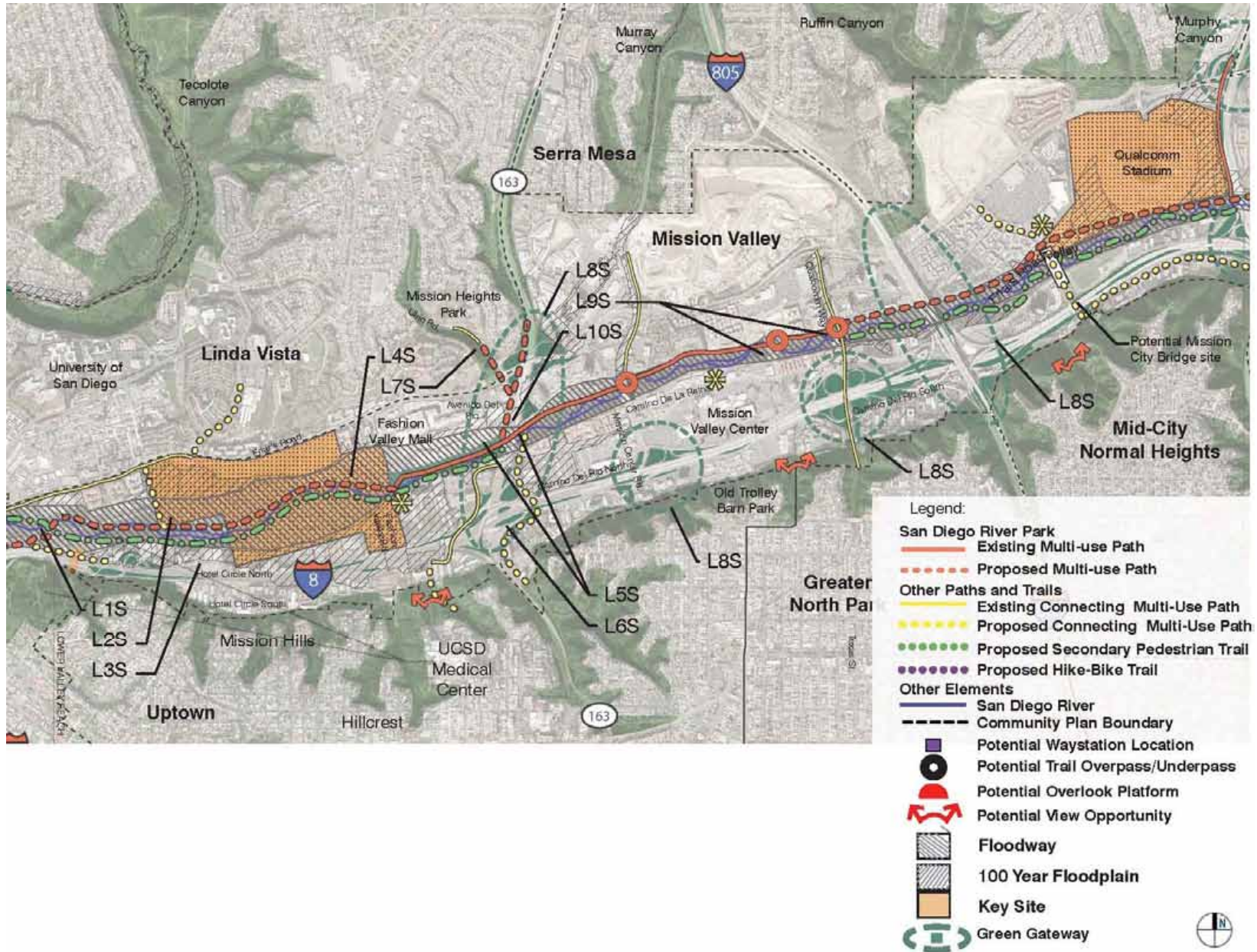
## Complex Projects - Estuary

		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.		

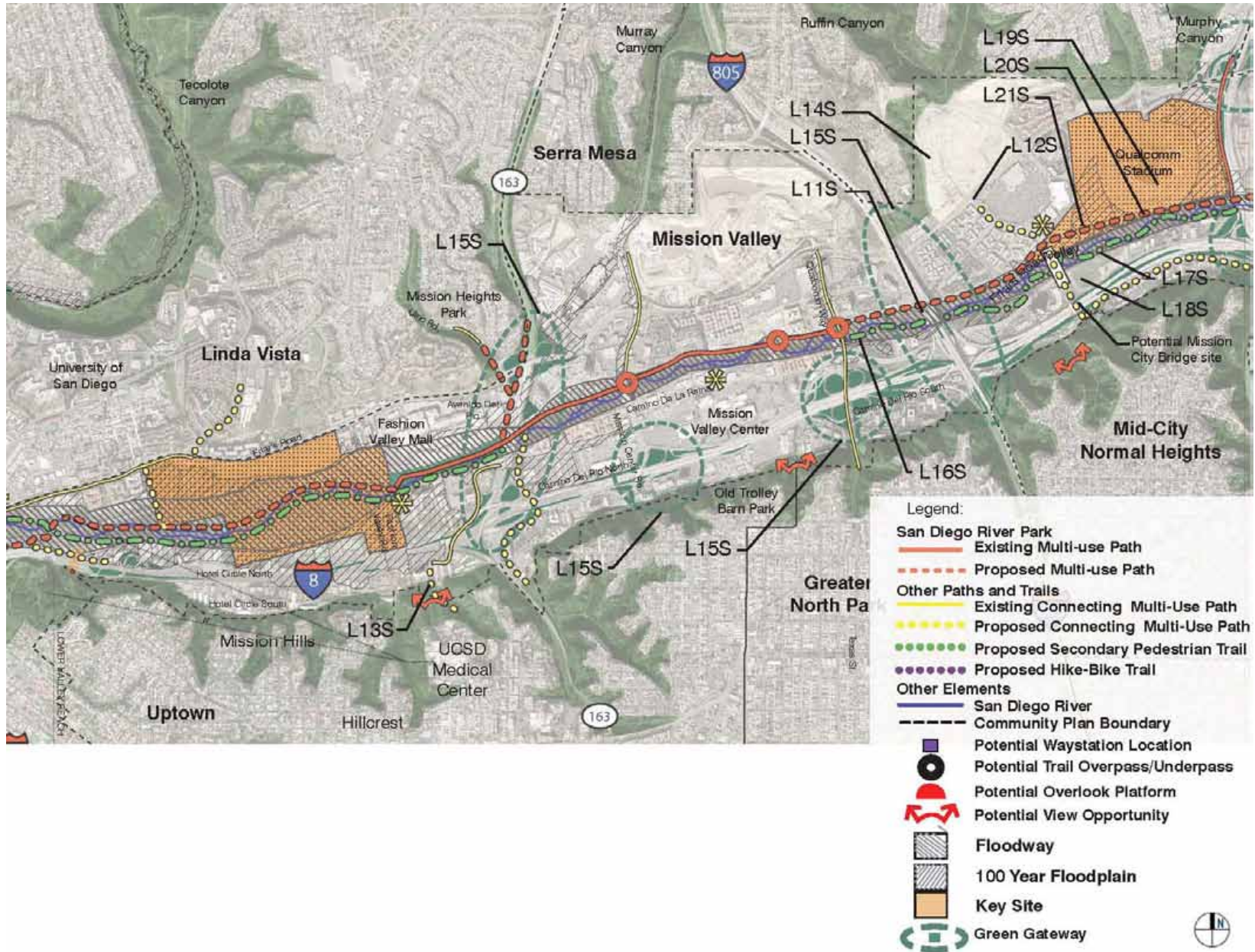
IMPLEMENTATION

RECREATION	EDUCATION	
<p>Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.</p>		<p>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.</p>
<p>Realign bike path along North side of channel and create pedestrian trail.</p>		<p>Coordinate with appropriate agencies and community/special interest group plans for future improvements.</p> <p>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.</p>
<p>Connect San Diego River Park Trail to provide access to Sea World, linking tourist attractions and hotels along the river corridor.</p>		<p>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.</p>
<p>Realign bike path along North side of channel and create pedestrian trail.</p>		<p>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.</p> <p>Collaborate with appropriate community and special interest groups to explore potential to replace Fiesta Island dike with a bridge located north of Tecolote Creek.</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 estuary function, wildlife habitat and seasonal nesting requirements for sensitive species.</p>	<p>Collaborate with appropriate agencies and community/special interest groups to prepare specific plan and identify funding sources improve estuarine environment.</p>
		<p>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.</p>
	<p>Potential to reestablish Mission Bay as part of the San Diego River delta pattern.</p>	<p>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.</p>
<p>Create multi-use path and open space link to San Diego Bay and bike paths to south.</p>		<p>Collaborate with North Bay Redevelopment as it moves forward.</p>
		<p>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.</p>
<p>Connect trolley stations. Connect along Linda Vista Road and Morena to Tecolote. Trial connection Tecolote could be through estuary or along old PCH.</p>		<p>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.</p>





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 Rancheria 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

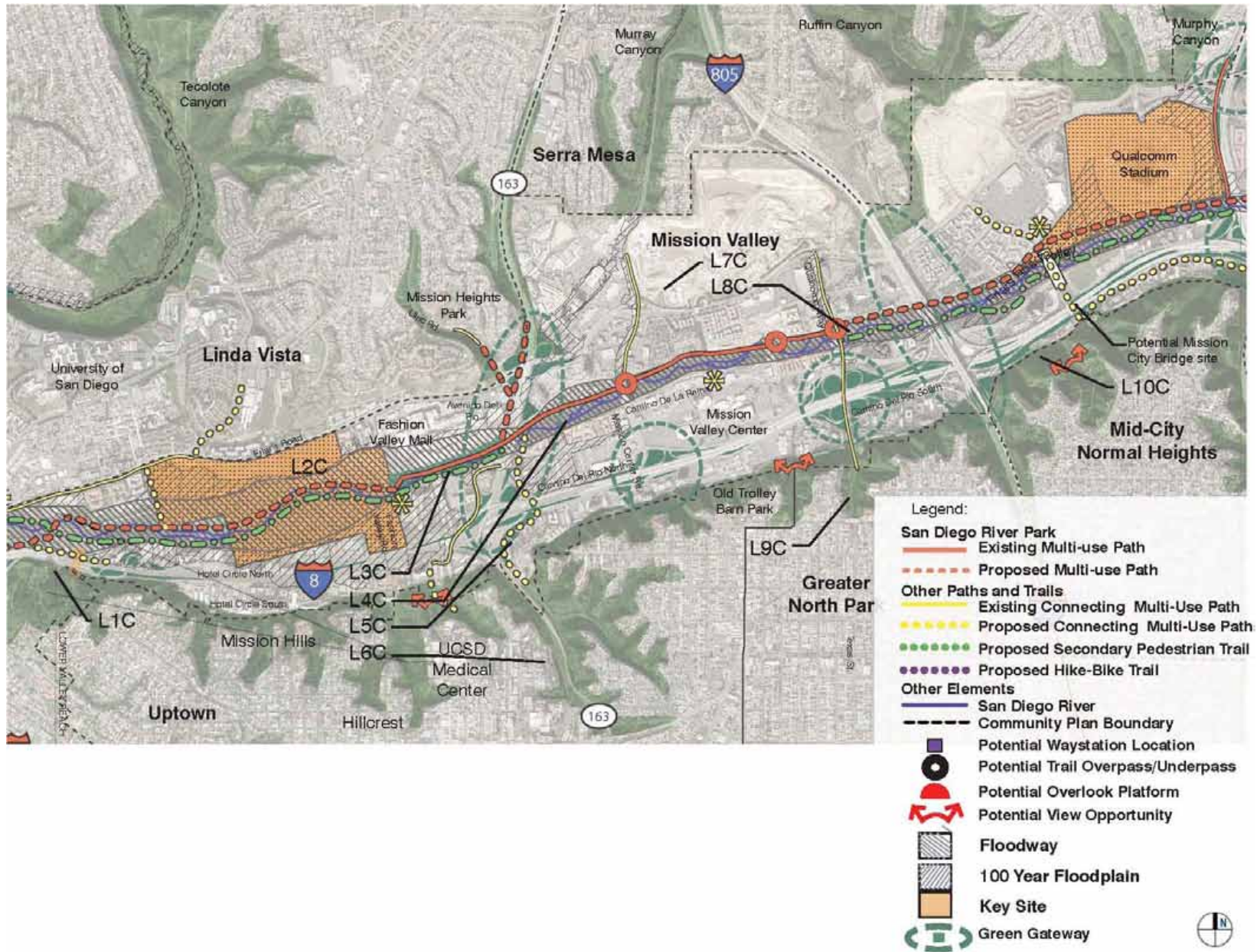
ECOLOGY

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	
Potential to create interpretive waystation and trail connection between river corridor and upland neighborhoods.		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.
Integrate bicycle trails and trolley system.		Coordinate with San Diego Bicycle Master Plan and Mission Valley Community Plan to identify specific route alignment.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.  Provide a safe bike crossing to San Diego River Trail alignment from Balboa Park, Hillcrest and Mission Hills.	Interpret unique habits, sensitivities and characteristics of river function, and wildlife habitats.	Support City of San Diego and property owners in effort to improve underpass entrances. Provide lighting and potential better pedestrian connections to the underpass.  Coordinate with San Diego Bicycle Master Plan and develop specific study to confirm route alignment.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.	Interpret unique habits, sensitivities and characteristics of canyon and wildlife habitats.	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.  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.
Potential to include undeveloped land as part of River Park through acquisition or open space dedication.		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.
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.		Coordinate with appropriate public agencies and community groups.
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.  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).  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.	Interpret unique habits, sensitivities and characteristics of canyon and naturalized open space habitats.	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.  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.  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.
Improving connection will enhance awareness and recreational experience for users of the multi-use river pathway.		Coordinate with stadium redevelopment process and San Diego Bicycle Master Plan to identify specific alignment.z



Lower Valley Complex Project Recommendation Diagram

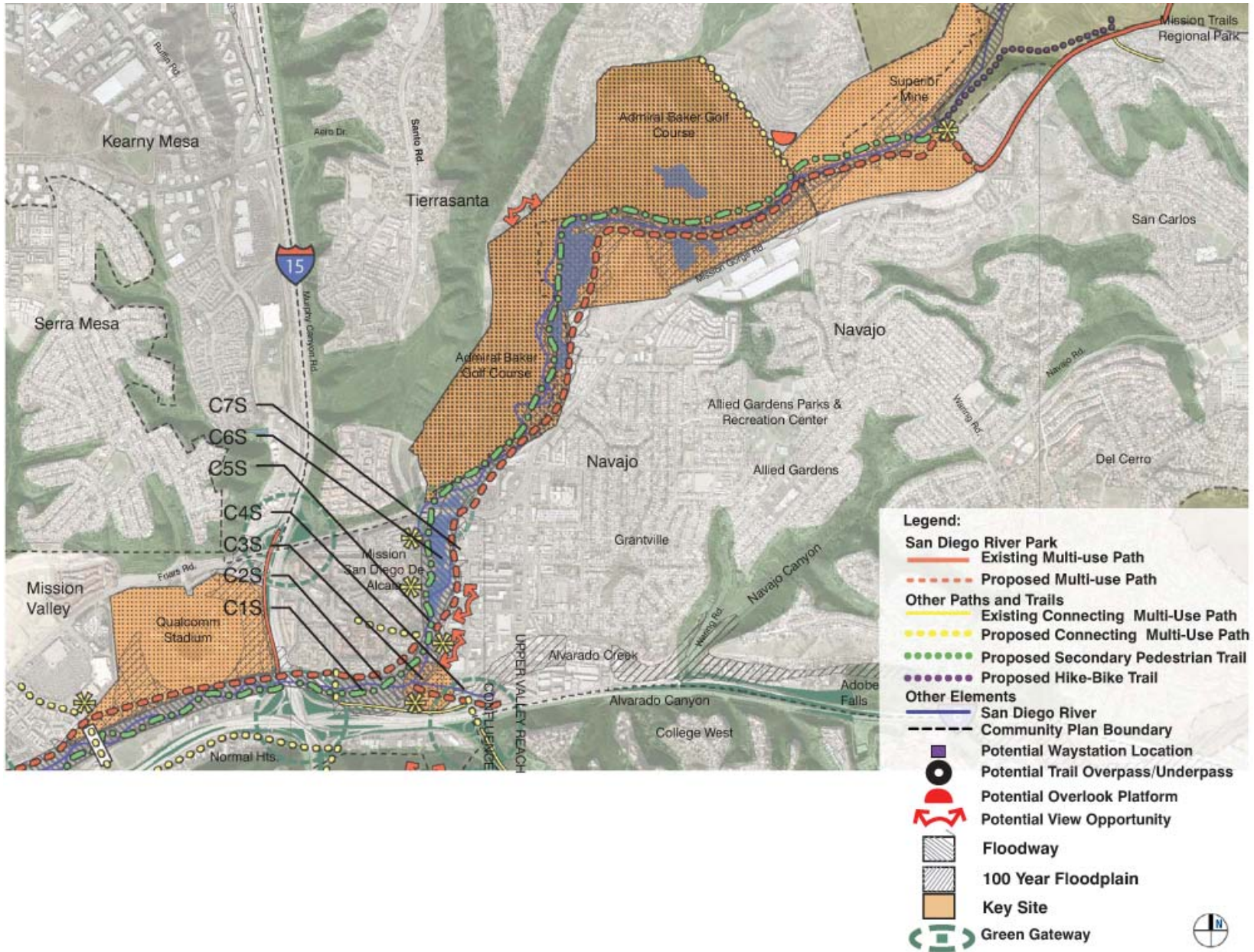
KEYNOTE RECOMMENDATION

BENEFITS

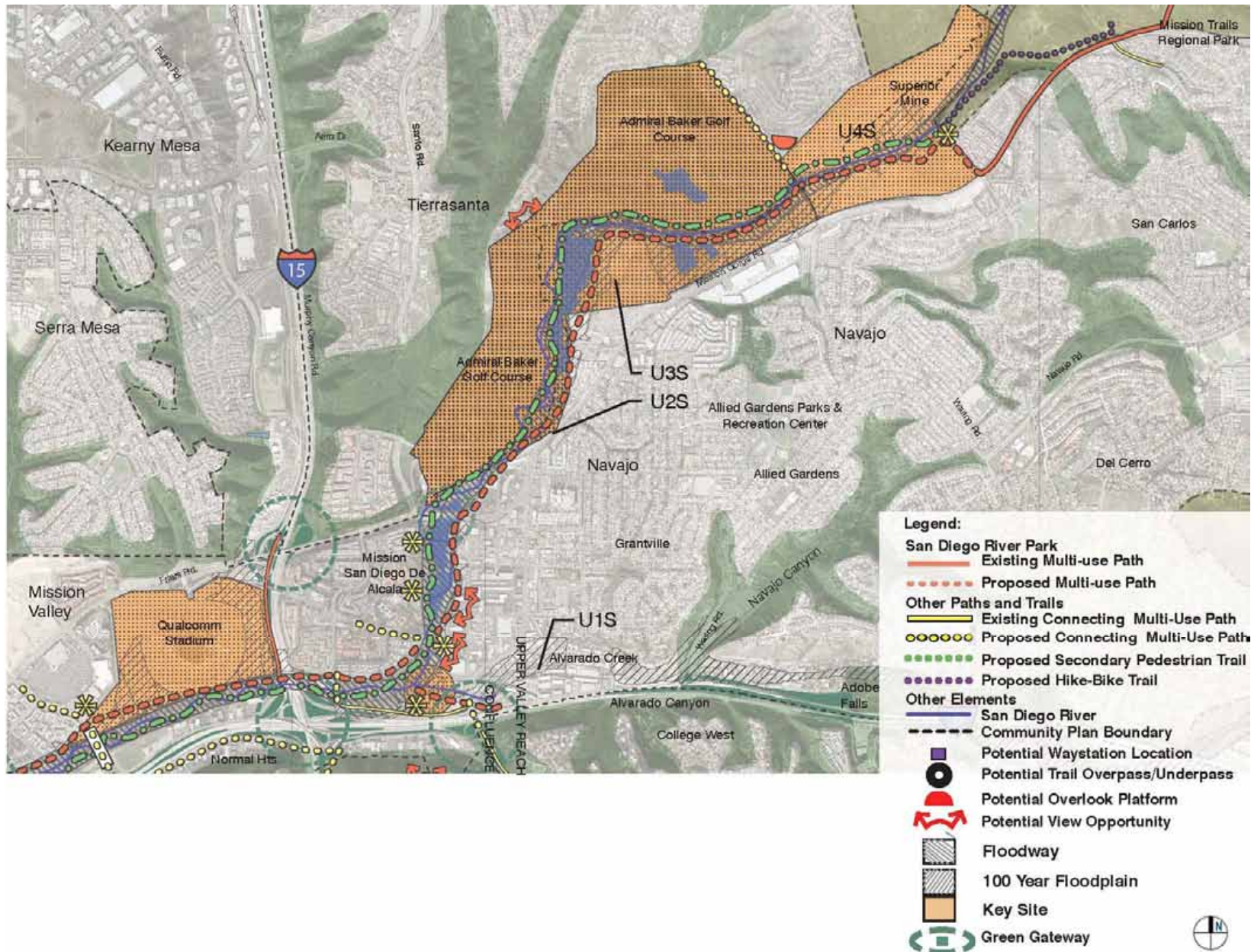
Complex Projects - Lower Valley		HYDROLOGY	ECOLOGY
L1C	Connect to Presidio Park via Taylor Street bridge over I-8.		Expands wildlife habitat and improves habitat connectivity.
L2C	Engage land owners to encourage any future redevelopment of Riverwalk GC to address river.		Expands wildlife habitat and 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 Caltrans 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.		

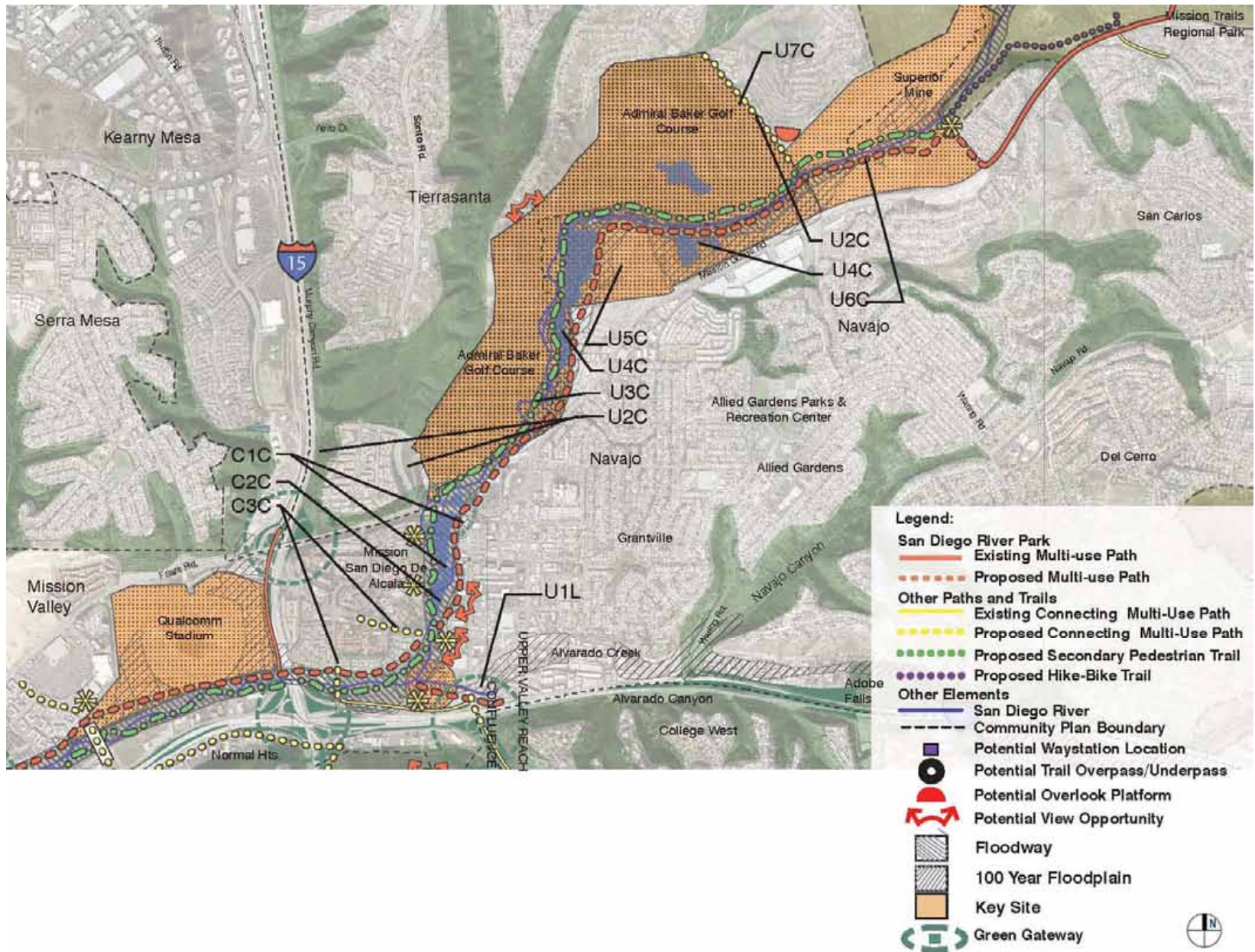
Simple Projects - Upper Valley

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 Alcala connecting via Rancho Mission Road and San Diego Mission Road.		

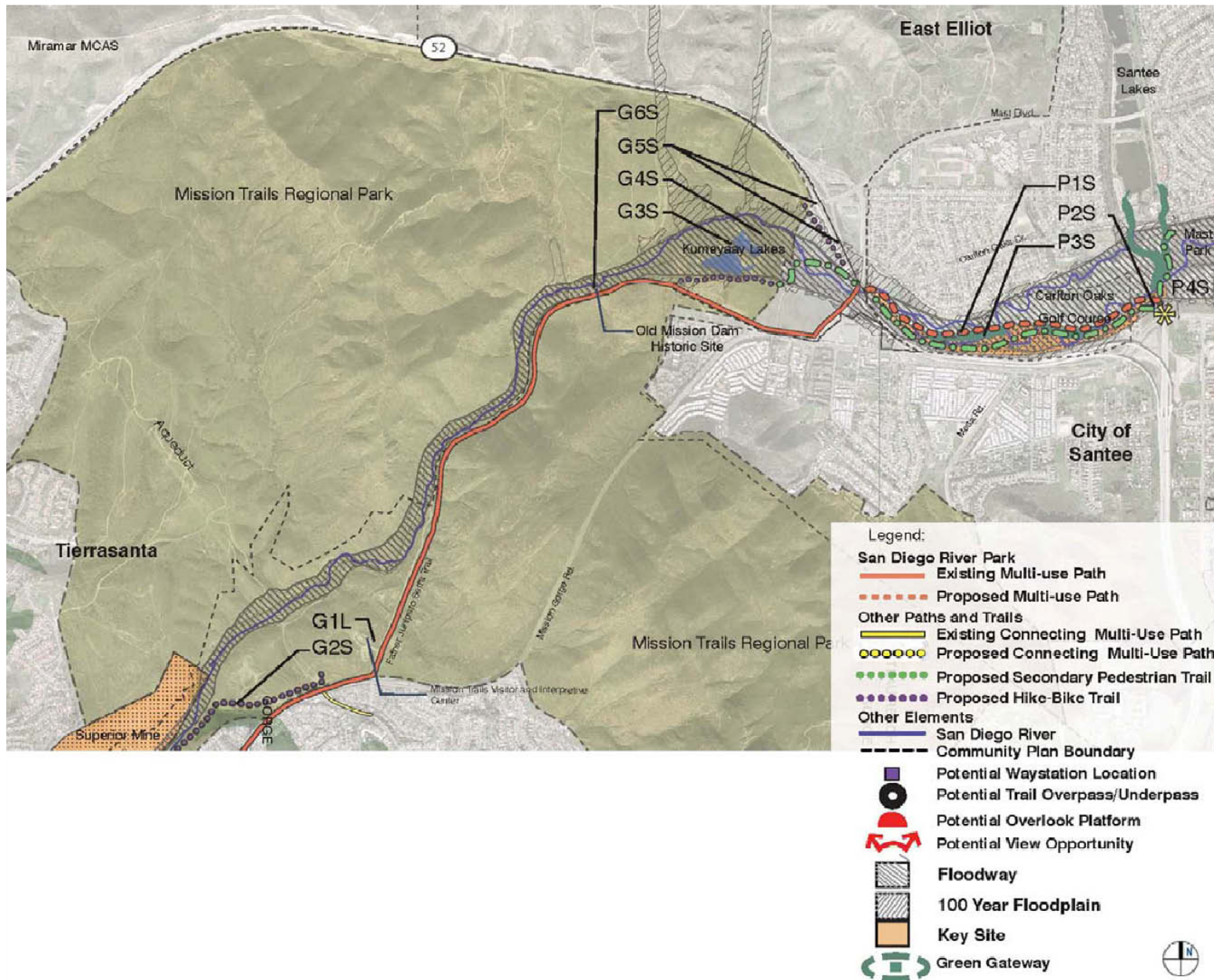
Complex Projects - Upper Valley

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.	Interpret Mission and importance of river to its location along the San Diego River Park Trail.	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.		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

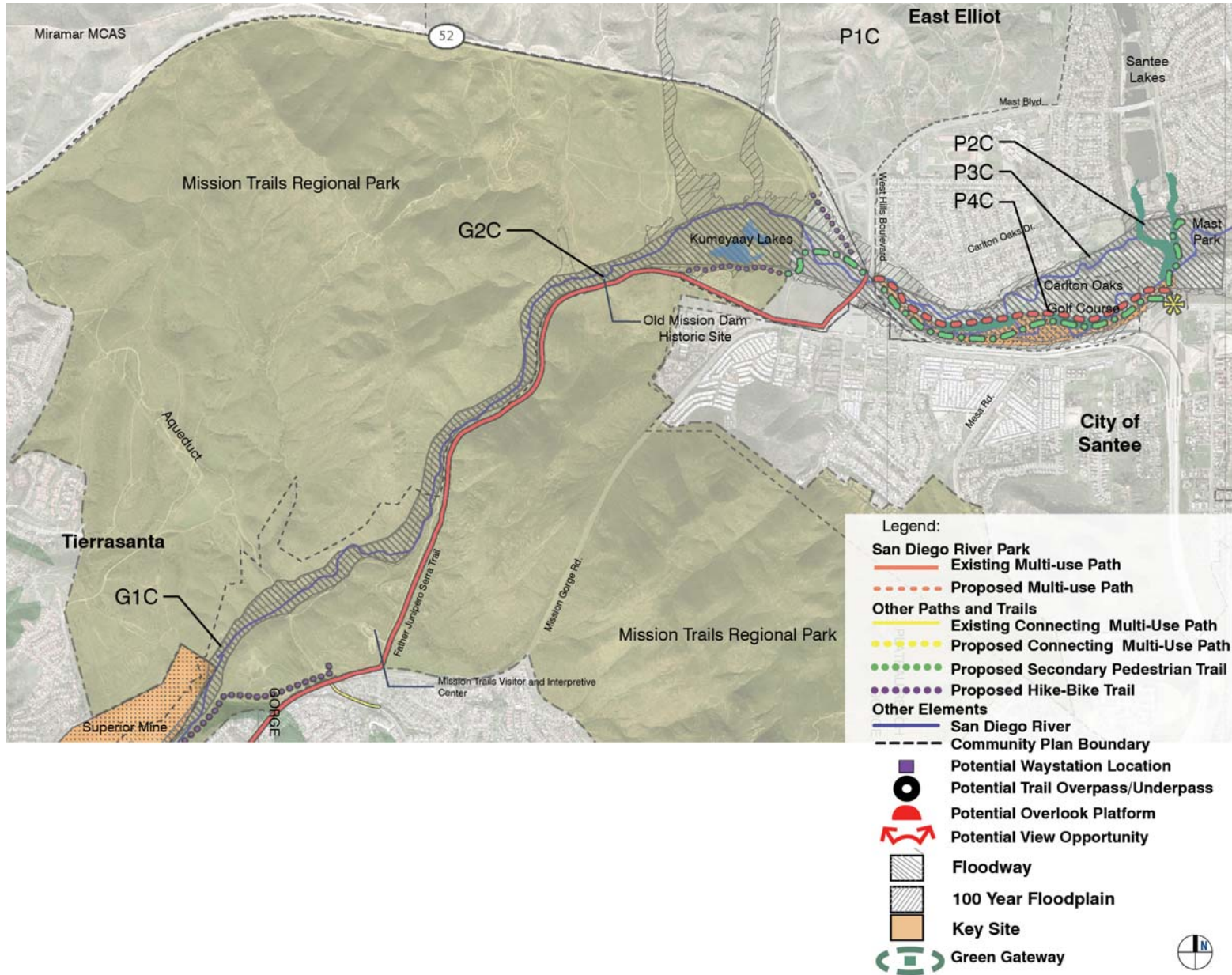
KEYNOTE RECOMMENDATION

BENEFITS

		HYDROLOGY	ECOLOGY
<b>Simple Projects - Gorge</b>			
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.
<b>Simple Projects - Plateau</b>			
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

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

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## APPENDIX L - REFERENCES

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