

San Diego River Park



San Diego River Park City of San Diego Draft Master Plan

Prepared for the City of San Diego
Park and Recreation Department



Consultant Team:

Civitas, Inc.
Jones & Jones Architects and Landscape Architects, Ltd.
Spurlock Poirier Landscape Architects
Jones & Stokes
L.J. Black Consulting
Mooney and Associates
Nasland Engineering
Katz, Okitsu and Associates

Acknowledgements

The Civitas Inc. team would like to thank the following individuals for their invaluable support and assistance throughout the last year and in the production of this report. The consultants would also like to thank the many members of the community who have participated in and contributed to the public meetings, Citizen's Advisory Committee meetings and workshops. Their thoughts, viewpoints and insight have enriched this process, and strengthened the vision for the San Diego River Park. We would especially like to acknowledge the tireless efforts of Rob Hutsel of the San Diego River Park Foundation and the San Diego River Coalition in sharing his knowledge, insight and inspiration toward achieving this plan.

Mayor and City Council

Mayor Dick Murphy
Council Member Scott Peters – District 1
Council Member Michael Zucchet - District 2
Council Member Toni Atkins - District 3
Council Member Tony Young - District 4
Council Member Brian Maienschein - District 5
Council Member Donna Frye - District 6
Council Member Jim Madaffer - District 7
Council Member Ralph Inzunza - District 8

San Diego River Alliance

Mayor Dick Murphy, City of San Diego
State Assembly Member Christine Kehoe
State Senator Deirdre Alpert
County Supervisor Dianne Jacob
Mayor Randy Voepel, City of Santee
Council member Donna Frye
Council member Jim Madaffer
Jo Ann Anderson, San Diego River Park Foundation
James J. Lewanski, Helix Water District

City of San Diego Park and Recreation Department

Ellen Oppenheim, Director
April S. Pender, Deputy Director
Mark Marney, Project Officer II
Jeff Harkness, Park Designer

City of San Diego Planning Department

City of San Diego Park and Recreation Board

City of San Diego Planning Commission

Park and Recreation Design Review Committee

San Diego River Park Master Plan Technical Committee

San Diego River Conservancy

Mayor Dick Murphy
Council member Donna Frye
Council member Toni Atkins
Jack Minan
Dr. Susan Hector
Jim Peugh
Jim Bartel
Dave Harper, State of California Director of Finance
Sam Schuchat, State of California Secretary of Resources Agency
Gary Stephany (California Regional Water Quality Control Board)
Al Wright (Wildlife Conservation Board)
Deborah Jayne, Executive Officer

California State Assembly

Assembly member Christine Kehoe – 76th Assembly District

California State Senate

Senator Dede Alpert – Senate District 39



San Diego River Park Foundation

Rob Hutsel, Executive Director
Michael Beck, Chairman of the Board of Directors
JoAnn Anderson, Chief Financial Officer

San Diego River Coalition



Mission Trails Regional Park: Where the river flows through the gorge

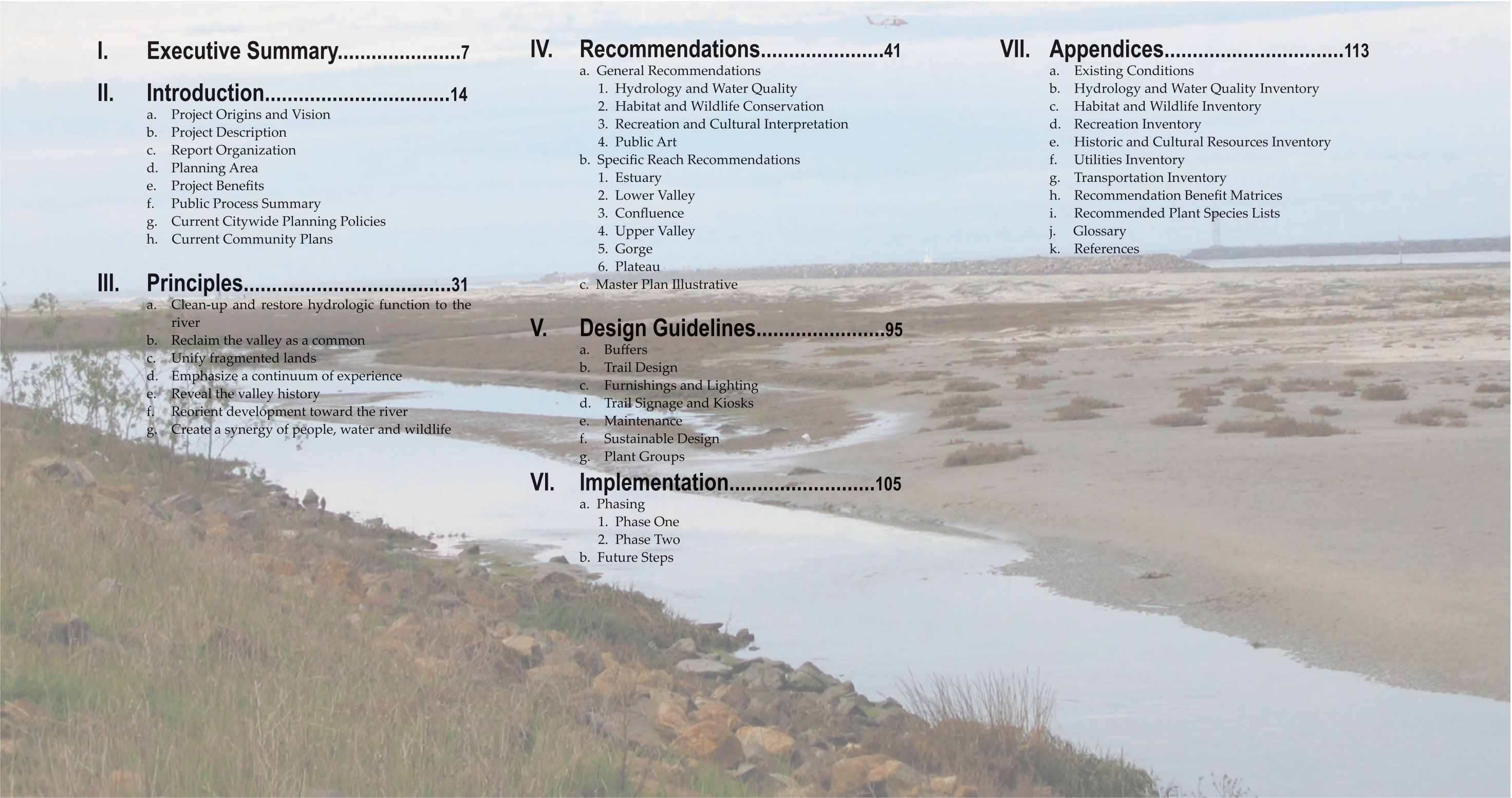


The river is a hidden treasure within Mission Valley



Ocean Beach: Where the river meets the ocean

Table of Contents



I. Executive Summary.....7

II. Introduction.....14

- a. Project Origins and Vision
- b. Project Description
- c. Report Organization
- d. Planning Area
- e. Project Benefits
- f. Public Process Summary
- g. Current Citywide Planning Policies
- h. Current Community Plans

III. Principles.....31

- a. Clean-up and restore hydrologic function to the river
- b. Reclaim the valley as a common
- c. Unify fragmented lands
- d. Emphasize a continuum of experience
- e. Reveal the valley history
- f. Reorient development toward the river
- g. Create a synergy of people, water and wildlife

IV. Recommendations.....41

- a. General Recommendations
 - 1. Hydrology and Water Quality
 - 2. Habitat and Wildlife Conservation
 - 3. Recreation and Cultural Interpretation
 - 4. Public Art
- b. Specific Reach Recommendations
 - 1. Estuary
 - 2. Lower Valley
 - 3. Confluence
 - 4. Upper Valley
 - 5. Gorge
 - 6. Plateau
- c. Master Plan Illustrative

V. Design Guidelines.....95

- a. Buffers
- b. Trail Design
- c. Furnishings and Lighting
- d. Trail Signage and Kiosks
- e. Maintenance
- f. Sustainable Design
- g. Plant Groups

VI. Implementation.....105

- a. Phasing
 - 1. Phase One
 - 2. Phase Two
- b. Future Steps

VII. Appendices.....113

- a. Existing Conditions
- b. Hydrology and Water Quality Inventory
- c. Habitat and Wildlife Inventory
- d. Recreation Inventory
- e. Historic and Cultural Resources Inventory
- f. Utilities Inventory
- g. Transportation Inventory
- h. Recommendation Benefit Matrices
- i. Recommended Plant Species Lists
- j. Glossary
- k. References

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 Kumeyaay people to the valley ten thousand 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 even industrial uses have expanded into the Valley, pushing ever closer to water's edge. Extensive mining operations have excavated the river bed for sand and gravel. The proximity of development threatens the integrity of both the river and the wildlife habitat it supports.

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. A strong movement, led by the San Diego River Park Alliance and the San Diego River Park Foundation, seeks to reverse this condition and restore a symbiotic relationship between the river and surrounding communities. This grass roots effort seeks to create a river-long park, stretching from the San Diego River headwaters near Julian to the Pacific Ocean at Mission Bay.

A New Vision

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.

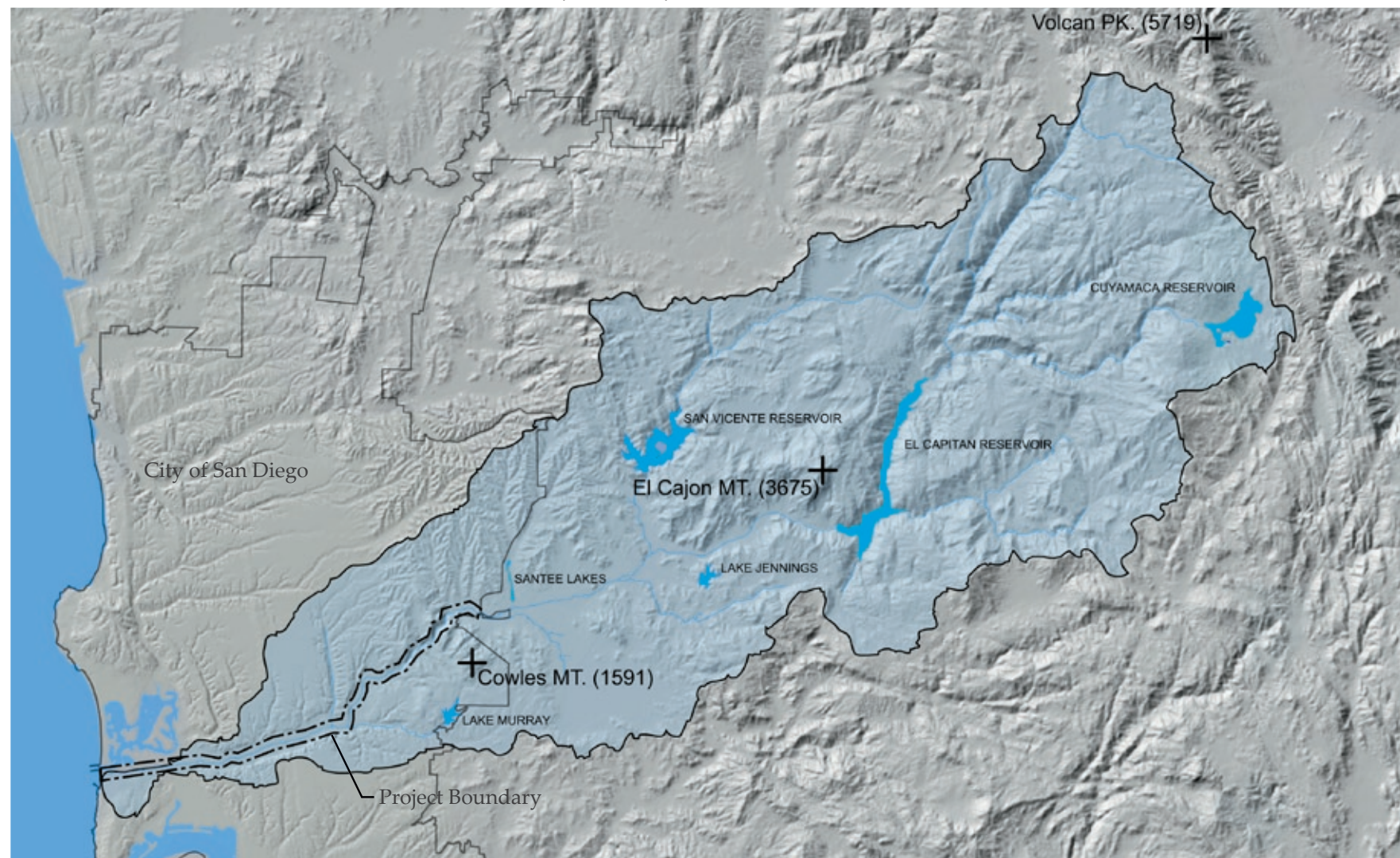
Understanding the physical needs and the social and cultural potentials demands a thorough knowledge of the region's physiographic origins, the current condition of the river, and the human and natural forces that have shaped it. It is essential to understand these elements in the context of the entire watershed system of the river, including the canyons and creeks that tributary to it. Any effort to clean the river, create habitat connectivity and trail continuity must extend beyond the bounds of this study area and the City of San Diego. Creating the San Diego River Park will produce a diverse, dynamic and balanced network of natural habitat and recreation spaces that are interwoven with adjacent neighborhoods and the river valley, but that also reaches into the canyons and uplands that are linked to it.



In 1916 agriculture was the primary activity in Mission Valley
Source: Mission Valley Historical Society



Mission Valley viewed from Presidio



Regional watershed context

Principles

The following seven principles emerged from discussions with the Citizens' Advisory Committee. These principles form the core of the new vision just described, and are the guiding ideas against which future design and implementation decisions will be measured.

Introduction

Principles

Clean up and restore hydrologic function to the river. 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. The San Diego River Park effort emphasizes a need to protect and improve water quality through a variety of tools. If the water quality continues to deteriorate as it has in the lower reaches of the river, then the vision of a functional River Park will not be realized.

Recommendations

Reclaim the valley as a Common. Today, the river valley is a forgotten place lost behind development. The San Diego River Park offers the chance to recover the river corridor as a place that all San Diego residents and visitors can come to enjoy the experience of nature. By aggregating open land, reclaiming an identifiable river corridor, and restoring the river's riparian integrity, the sense of the valley as a distinct place for people and for wildlife can be re-established.

Design Guidelines

Unify fragmented lands. Significant natural open space remains in the San Diego region but it is largely disconnected. Lack of connectivity limits the land's ability to meet wildlife and human needs, in terms of essential habitat and recreational opportunities. The river corridor can become a major spine connecting these lands, both across the valley and along its length. These connections will also reinforce the visual and real sense of the valley by expanding native plant communities.

Implementation

Appendices

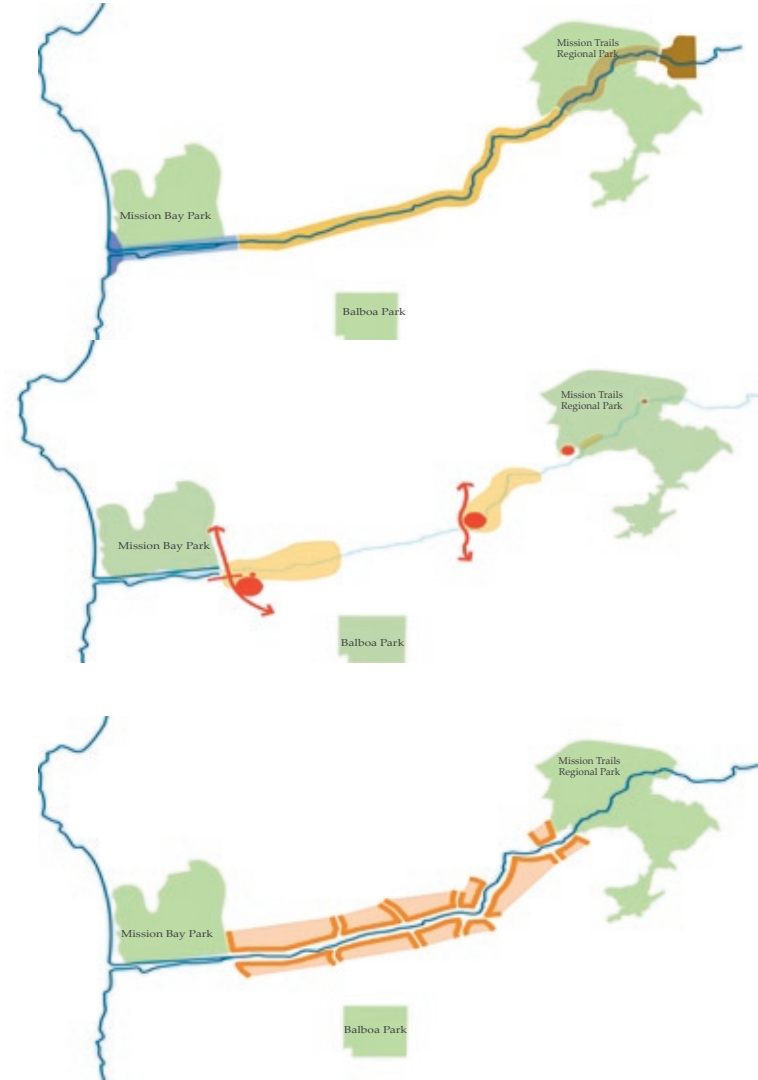


Emphasize a continuum of experience. The valley offers an experience of a landscape that is diverse and changing from valley wall to valley wall and from the ocean to Mission Trails Regional Park. Protecting the distinctive character of each section of the valley must go hand in hand with creating a coherent San Diego River Park experience. Sensitive transitions between landscape types, between natural and urban, valley and upland, and river reach to river reach are the key to creating a sense of continuity throughout the San Diego River Park.

Reveal the valley history. The valley has long been central to the settlement of the region, and its history tells a story of the people and the landscape of San Diego. The San Diego River Park Trail is an opportunity to link these historic and contemporary locations, stimulate public interest, and expand the public's knowledge of the prehistoric and historic land uses within the valley. Increased public interest will benefit these sites by instilling a sense of responsibility for their preservation and care.

Reorient development toward the river. Today nearly all development within the valley turns its back to the river, deriving little benefit from this important resource. The San Diego River Park can serve as a catalyst for future re-use and inspire new development to seek ways to draw upon and enhance the river character, to create a 'front door' to the river. Working with property owners, the San Diego River Park can also promote a different way of thinking about new development and redevelopment, encouraging a 'river address' with architecture and landscape that draw upon and contribute to a river valley aesthetic.

Create a synergy of people, water and wildlife. The San Diego River Park will serve a diverse set of needs; these needs will at times be in conflict. To succeed, we must find a balance that best serves the human, ecologic, hydrologic and economic demands in the valley. Taken together each of these interests create a stronger, multi-faceted system that is the river valley. The San Diego River Park must be designed for and welcome all of them.



Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Looking Ahead

These seven principles create the basis for a set of comprehensive, concrete recommendations that will make the San Diego River Park a reality. These recommendations range from general over-arching steps that affect the entire river corridor to specific actions that are local and achievable by organized volunteers.

Foremost among them are five key recommendations that will create the critical structure upon which all other pieces of the San Diego River Park will rest.

Return the river to health.
Improve the river pattern and water quality by separating stream flow from ponds and by creating a wider riparian corridor with more meander. Remove invasive, non-native vegetation and plant a diversity of native species to re-establish a range of native plant communities.

Remember the big picture.
Connect the valley to adjacent open space including the beaches, Tecolote, Bachman, Murray, Ruffin, Murphy and Alvarado Canyons and Mission Trails Regional Park to create an ecostructure of a unified native landscape by transforming rights-of-way and creating open space easements.

Build city wide connection.
Establish a continuous trail system from ocean to mountain and canyon to canyon with frequent access to transit, canyons and neighborhoods. Coordinate with Community Plans, the San Diego Bicycle Master Plan and other current planning efforts to develop specific locations for neighborhood connections and route alignments.

Assemble a beautiful infrastructure.
Integrate infrastructure (transportation, utilities, stormwater) and ecostructure (rivers, vegetation, wildlife corridors, habitat) into "beautiful infrastructure" making key ecological and infrastructure functions visible. Partner with public agencies to transform roads, bridges, the trolley, parking lots, culverts, channels and utility easements to be part of a unified landscape, maintaining and enhancing connections between adjacent natural habitats, residential communities, and the San Diego River Park.

Create a sequence of unique places and experiences.
Establish a linked string of parks and open spaces by creating land that is accessible and usable by the public through acquisition of land, easements and partnerships with land owners in key locations. These 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. To achieve this it is important to collaborate with and support the Mission Valley Community Plan in particular to identify areas for redevelopment and new development with a river focus and to identify potential land to acquire for parks and open space. As redevelopment occurs, land owners and developers should be engaged in the San Diego River Park planning process to support the creation of places that are mutually beneficial.

This Master Plan presents two sections of additional recommendations. The first of these sections addresses specific issues of hydrology and water quality, habitat and wildlife, recreation and cultural interpretation, and public art. The second section examines the existing condition of each segment, or reach, of the San Diego River within the City, sets goals and makes recommendations for each reach.



Tecolote Canyon



Flowing San Diego River

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Next Steps

This Plan identifies a number of elements and tasks needed to create the San Diego River Park, many of which can begin immediately. Initial implementation hinges on environmental and economic conditions. A Programmatic Environmental Impact Report (PEIR), required by the State of California, must be prepared to analyze the impacts of the Master Plan recommendations and specific projects within the river corridor.

Another essential step is to determine the strategy to implement the River Park within the City. There is currently no single jurisdictional tool by which to accomplish this. The River Park planning area crosses four community planning areas in addition to Mission Bay Park and Mission Trails Regional Park, each of which would require amendment to implement the San Diego River Park Master Plan. Several options are available for incorporating the river park master plan into the City's policies and regulations. Unlike other City park master plans, the adoption and implementation of the master plan is complicated by the fact that most of the subject property is privately owned. The potential options identified to date, which can be combined, are to 1) adopt the master plan to be part of the Progress Guide and General Plan, 2) amend the affected community plans, park plans, and zoning code, and 3) apply an overlay zone. Further analysis is needed to determine the proper course of action.

Analysis of the economic costs and benefits must also be prepared to ensure that the San Diego River Park will be carried through to completion. The economic analysis should include short and long term funding strategies for both capital improvements and long-term operation and maintenance costs. This assessment should also explore the costs and benefits of the Park to the City and to private land owners along the river corridor.

Tremendous commitment and effort on the part of the community, volunteer organizations, individuals, and public officials has brought the concept of the San Diego River Park to this point, but much work remains to bring it to life. In many respects, the San Diego River Park already exists in the minds of the residents of San Diego. One small, quiet step of announcing the river's presence with signs has attracted interest throughout the community. Even larger steps are ahead, and bringing people back to the river will be the next move toward rejoining the City and the River, and toward making the San Diego River Park a part of the urban fabric of the City of San Diego.

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Introduction

Introduction

An Historic Opportunity

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. With the guidance of the San Diego River Park Foundation and support of 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 Park is on its way to becoming a reality. The San Diego River Park will aim to shift how the river is envisioned and understood throughout its watershed, and the City of San Diego is at the forefront of this effort. Envisioned as a waterway that is healthy, accessible to the public and active with wildlife, the San Diego River can reassert itself as the focus of the valley and an asset to the community. The river can once again become a place to visit, live, work and play in the valley itself.

Vision

The San Diego River today is an impacted and managed system 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 valley, flood control and development pressure remain constant issues. These conflicting needs in the valley have compromised not only 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, integrate the river valley into the life and landscape of San Diego. 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.

This new park will create a string of parks linked by open space, trails, 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, in Minneapolis' Chain of Lakes, Boston's Emerald Necklace and Esplanade, and Denver's Park and Parkway system.

The San Diego River Park will draw upon San Diego's coastal location, enhancing the ocean edge that has historically defined the City and extending this character inland. It will allow people 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. Creating the River Park must also look beyond the bounds of the City and this study area. It is essential to understand the context of the entire watershed system and the canyons and creeks that are tributary to the San Diego River. The efforts to clean the river, create habitat connectivity and trail continuity must consider all of the areas that link to it and all waters that flow into it.

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 resource that becomes a part of the day-to-day life of the City, a place of the City rather than a place apart from the City.

Project Origins

The vision for the San Diego River Park is the culmination of many years of effort and discussion by dedicated members of surrounding communities. 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*. This report reflected the author's subjective observations of the regional landscape; while the report resulted in little action, it did lay 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



Dog Beach at Ocean Beach

Diego River Park a reality. A community-based, grassroots non-profit organization, the Foundation provides organizational and financial support to projects that will help to establish this river-long 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 region.

In the same year, Mayor Dick Murphy of San Diego 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 hopes to see a San Diego River Park extending from its headwaters in the Cuyamaca Mountains to its mouth at the Pacific Ocean.

With the support of the San Diego River Park Alliance, the Coastal Conservancy and 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, a framework was created through extensive community workshops throughout the river corridor. The result of this effort, the San Diego River Park Conceptual Plan, outlines the broad goals and objectives for the San Diego River Park, focusing on the stretch from El Capitan Reservoir to the Pacific Ocean. These goals, synopsized in the following pages, serve as the basis for the preparation of this Master Plan focusing on the river within the City of San Diego. The Conceptual Plan was approved by the San Diego River Coalition and unanimously accepted by the San Diego River Park Alliance.

The effort to protect, preserve and enhance the San Diego River and its watershed was spearheaded by six organizations, listed below.

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 web site.

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 in attendance and with active citizen participation.

San Diego River Conservancy

This new state agency, created to work on the entire length of the San Diego River Park, has a governing board of nine voting and two nonvoting members. The Conservancy's members include state officials, local elected officials, and community members.

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.

Select Committee on Parks and 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.

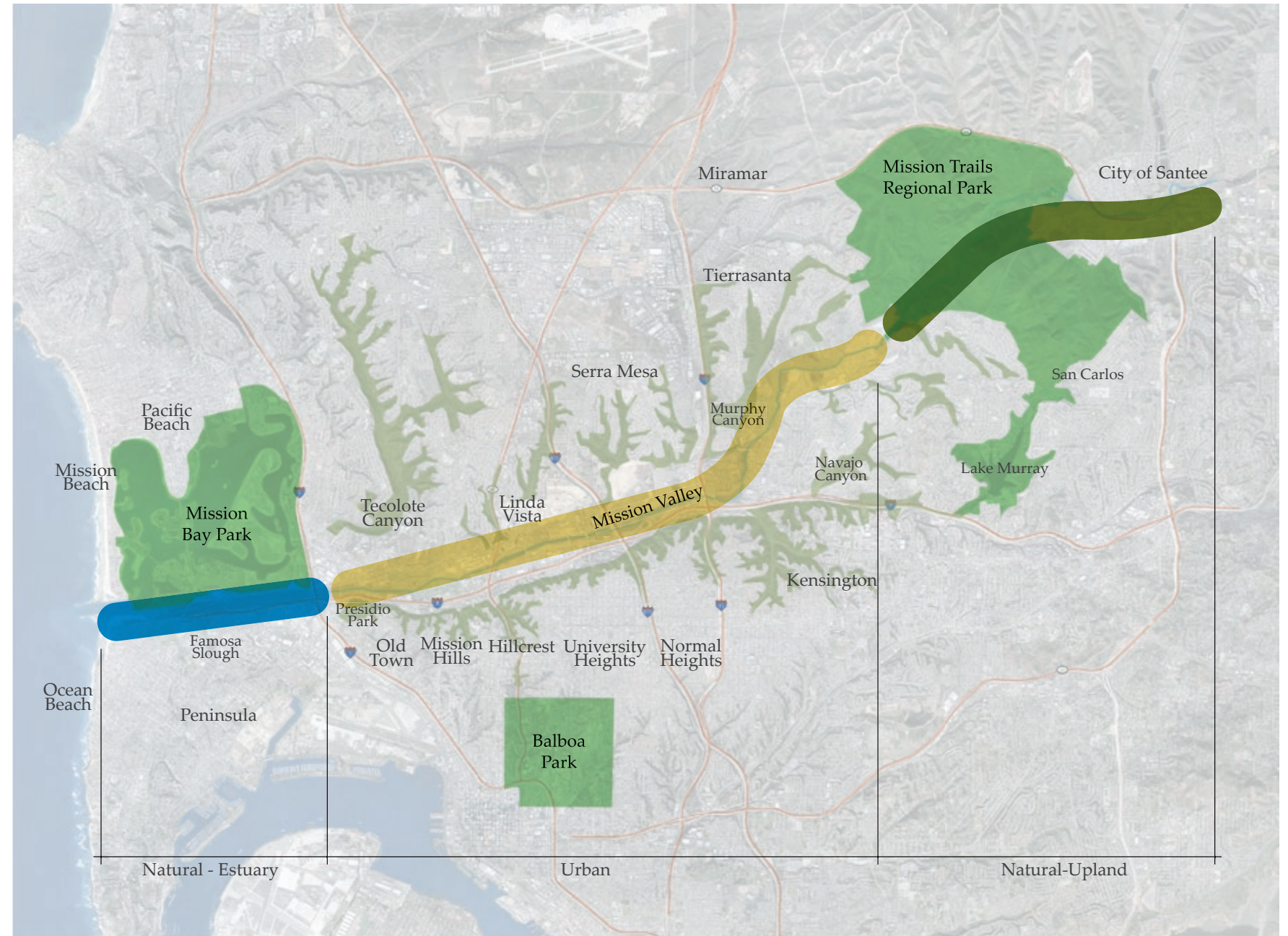
San Diego River Watershed Workgroup

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.

Project Description

In September of 2003, the City of San Diego initiated a nine-month study to prepare a plan for the San Diego River within the City of San Diego. This effort, the San Diego River Park Draft Master Plan, is spearheaded by the Civitas consulting team and will provide guidance to the City of San Diego in taking the incremental steps necessary to implement the San Diego River Park.

This Plan will also inform the City's ongoing planning processes and assist City and outside agencies in working toward a healthier river environment. The Plan will construct a framework that adjacent communities can use to set policy on riverfront land uses within their boundaries and encourage coordination between San Diego River Park planning and other future development along the length of the river corridor.



City of San Diego Context

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 re-development 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.

Report Organization

The Master Plan report is organized in three major sections: Principles, Recommendations, and Implementation.

The seven Principles will guide the City's San Diego River Park planning and implementation. These principles are the overarching goals against which all decisions should be tested.

The Recommendations section identifies a series of recommended actions and projects that are necessary to move the Plan from concept to reality. These recommendations are divided into two sections that deal with the river as a whole, and with the unique needs of each river section, or reach. It is important to note that while each recommendation fits into a larger, comprehensive 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 opportunities as they arise with property owners to implement the Plan's ideas.

The Implementation section of the document describes the potential phasing and prioritization of the recommended actions.

This report is the synthesis of a nine-month process. Much more work remains to bring the entire San Diego River Park to fruition. Additional studies, outlined in the Implementation section of this document, will follow this Master Plan effort.



Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Planning Area

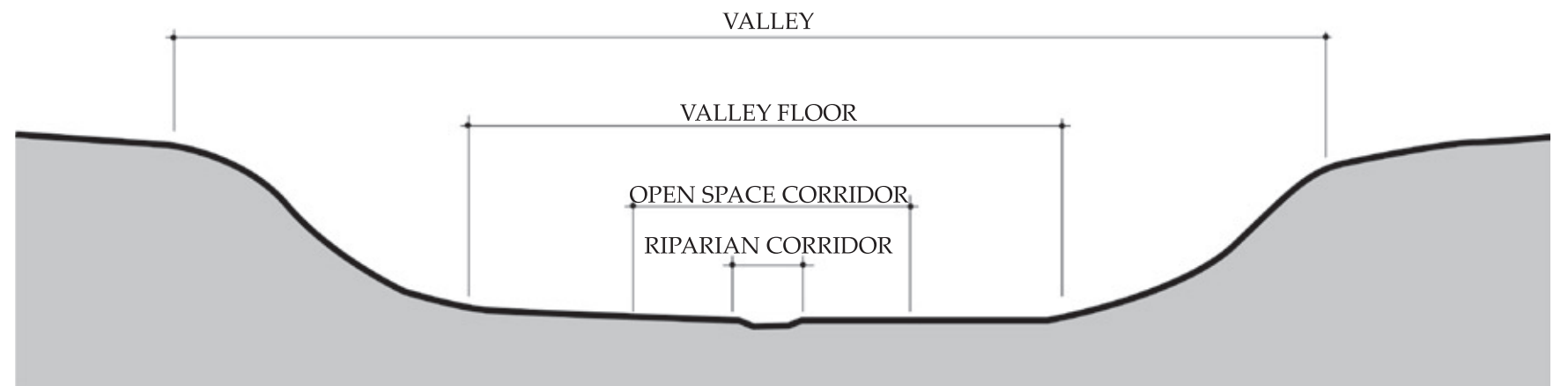
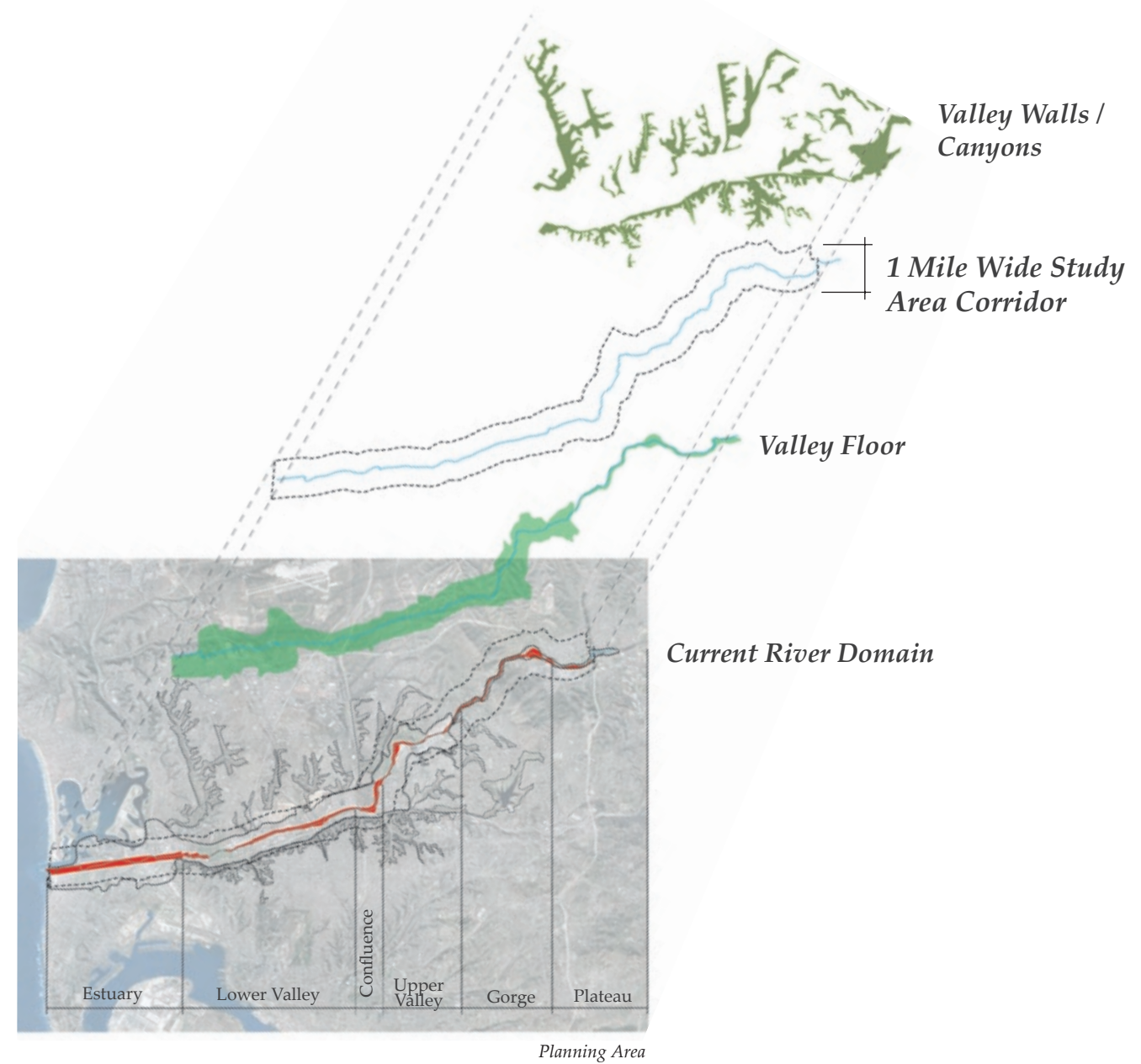
The Plan focuses on the section of the San Diego River within the boundaries of the City of San Diego extending from the Pacific Ocean at Mission Bay to the City of Santee. The project area is defined as a corridor extending one-half mile on each side of the river. This one mile wide area is consistent with that defined by the San Diego River Conservancy to where funding can be applied. However, the area of interest and influence extends well beyond this half mile limit. To be comprehensive, the Plan must consider the area of influence. This area relates to the topography of the river valley, its adjacent canyons and the remaining open space of the uplands. Tecolote Canyon, Murphy 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 project area is bookended by two major parks, Mission Bay Park and Mission Trails Regional Park. These 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 and natural upland character of Mission Trails Regional Park.

One of the great challenges of creating the 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 parcels to open the corridor to public access, either through acquisition of key parcels or by establishing easements. 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.

A large amount of land adjacent to the river lies in highway, street and utility rights-of-way. This land, often considered a 'leftover' and factored out of the overall landscape equation, offers further opportunities to increase habitat and landscape connections.

The Plan divides the river corridor within the City of San Diego 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), *Lower Mission Valley* (extending east to I-15 and including Qualcomm Stadium), the *Confluence* (of Alvarado and Murphy Creeks with the San Diego River), the *Upper Mission 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). There are issues and potentials that are shared by all of the reaches as well as those specific to each individual reach.



Components of the San Diego River Valley



Estuary



Lower Valley



Confluence



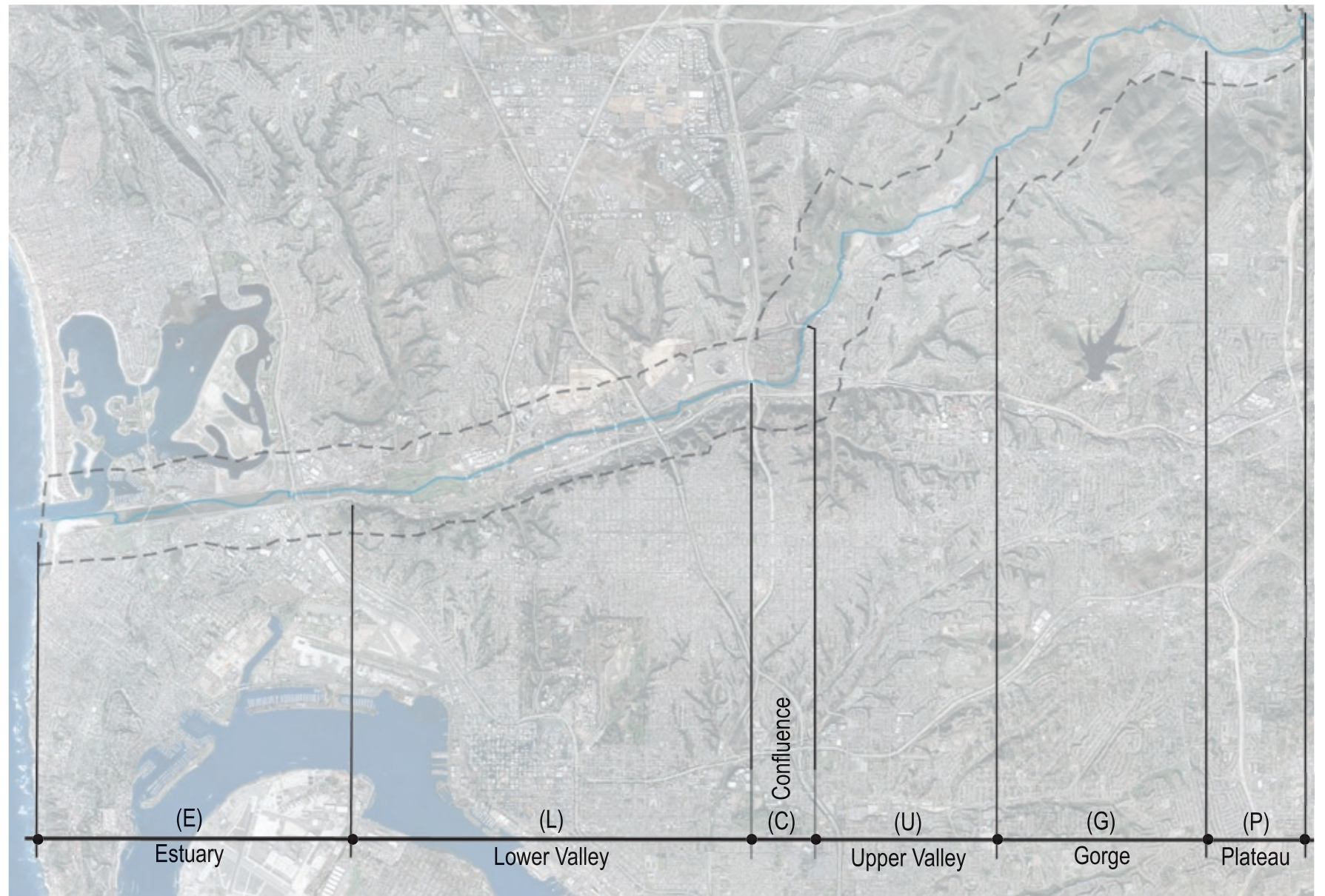
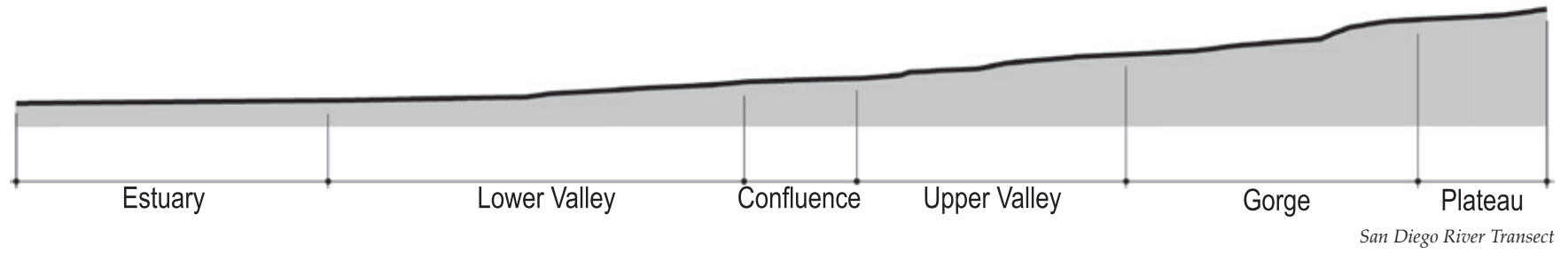
Upper Valley



Gorge



Plateau



Project Benefits

Creating a series of linked open spaces will benefit the City of San Diego in many ways. The most significant benefit will be the contribution of the San Diego River Park to help define the character of the City of San Diego. As the structure of the canyons and mesas influenced the original settlement of the region, the valley can once again provide an organizing element of nature on the scale of the City and build upon its beaches.

The San Diego River Park will improve water quality, as well as enhance the day to day quality of life for residents using the corridor for play, fitness, and commuting.

San Diego is and has always been defined by its relationship with the ocean. The San Diego River Park will engage that edge and draw it inland as it interprets the large-scale role and function of the river. Much as Central Park defines New York City, the combined power of the river valley and the coastal beaches define San Diego and should be a part of the daily experience of the city.

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 Trail will offer a new way to play and move through the city. A link to Balboa Park will connect the river corridor into the heart of the City. The San Diego River Park stands to become as vital a resource as the city's other great parks. By connecting these three parks, the San Diego River Park will create a great source of pride and a new identity for the city.

Direct Benefits. 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. In addition, developed parks are proposed within the valley itself, offering an even larger spectrum of experiences to park users. It will also connect isolated pockets of development along the river with established neighborhoods, knitting the valley as a whole and cultivating a valley identity.

Ecological Benefits. Today the wildlife habitats within the river valley are disconnected, impaired and isolated from upland habitat. This Park offers the opportunity to reconnect existing habitat within and across the valley. By reconnecting wildlife habitat the ecological health of this system can be improved. To be successful, much of the habitat must remain protected from human encroachment. A balance must be found that increases awareness of the fragility of the system and educates river valley visitors about the wildlife and habitat of the valley.

Educational Benefits. Currently, most of the native habitat within the 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.

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, 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 valley, and give input to the parks' design and management.

Potential Economic Benefits. By creating the river park and improving the condition of the river's health, property values will be enhanced. The Park will become an asset that will leverage higher quality land uses in the future.

There are a number of sites along the river that are isolated from the neighborhoods. The river gives these properties an identity and address within the valley and may encourage redevelopment with an orientation to the river.

There will be direct benefits to the City from the increase in property value and from the increase in pedestrian/tourist activity in the valley. Further benefit should be anticipated by an increase in private reinvestment in response to the presence of the park. Analysis of these benefits is an important next step to determine how to balance the cost of acquiring land and developing the park within the anticipated economic benefit.

The San Diego River Park will enhance property values along the river corridor. The river will become an asset, encouraging environmentally sensitive, high quality design and development at its edge, for both new projects and redevelopment.



Platte River corridor "before"



Platte River Corridor, 2003



Bicycle path along the Platte River in Denver

Public Process Summary

An important goal of the planning process was to engage the public and build upon the momentum and enthusiasm generated by the Conceptual Plan. Central to this effort were monthly meetings and workshops with the San Diego River Coalition; these meetings were open to the public and well-attended by community members.

In addition, two public workshops and two public meetings invited broader community input; these meetings assisted the Civitas team in confirming key issues, exploring planning options and drafting recommendations.

The public outreach effort included:

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



Exploring the San Diego River



Citizen Advisory Committee Public Workshop

Current Citywide Planning Policies

The planning area for the San Diego River Park encompasses three City Council districts and lies within or is influenced by fifteen community planning areas. The San Diego River Park also intersects the planning boundaries of two major parks and several regional planning entities, including the San Diego Watershed Urban Runoff Management Plan, the draft San Diego Natural Resource Management Plan and an Urban Drainage plan currently in study by the Bureau of Reclamation. With such a complex planning and jurisdictional structure, it is important to understand the context surrounding the San Diego River Park. In addition, the SANDAG Regional Growth Management Strategy, and specifically the water quality element of the Strategy outlines programs that may be integrated into City planning and development to support the improvement of the region's water quality.

This section presents a brief description of the various planning documents in effect along the river corridor, and discusses the relationship between these plans and the San Diego River Park planning process.

The San Diego River Park Draft Master Plan does not intend to supersede or replace existing planning documents. It does propose overarching general guidelines that will promote continuity and a cohesive San Diego River Park character. These guidelines, presented in a later part of this document, include open space and trail buffers, trail conditions, signage and lighting.

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

San Diego River Park Conceptual Plan

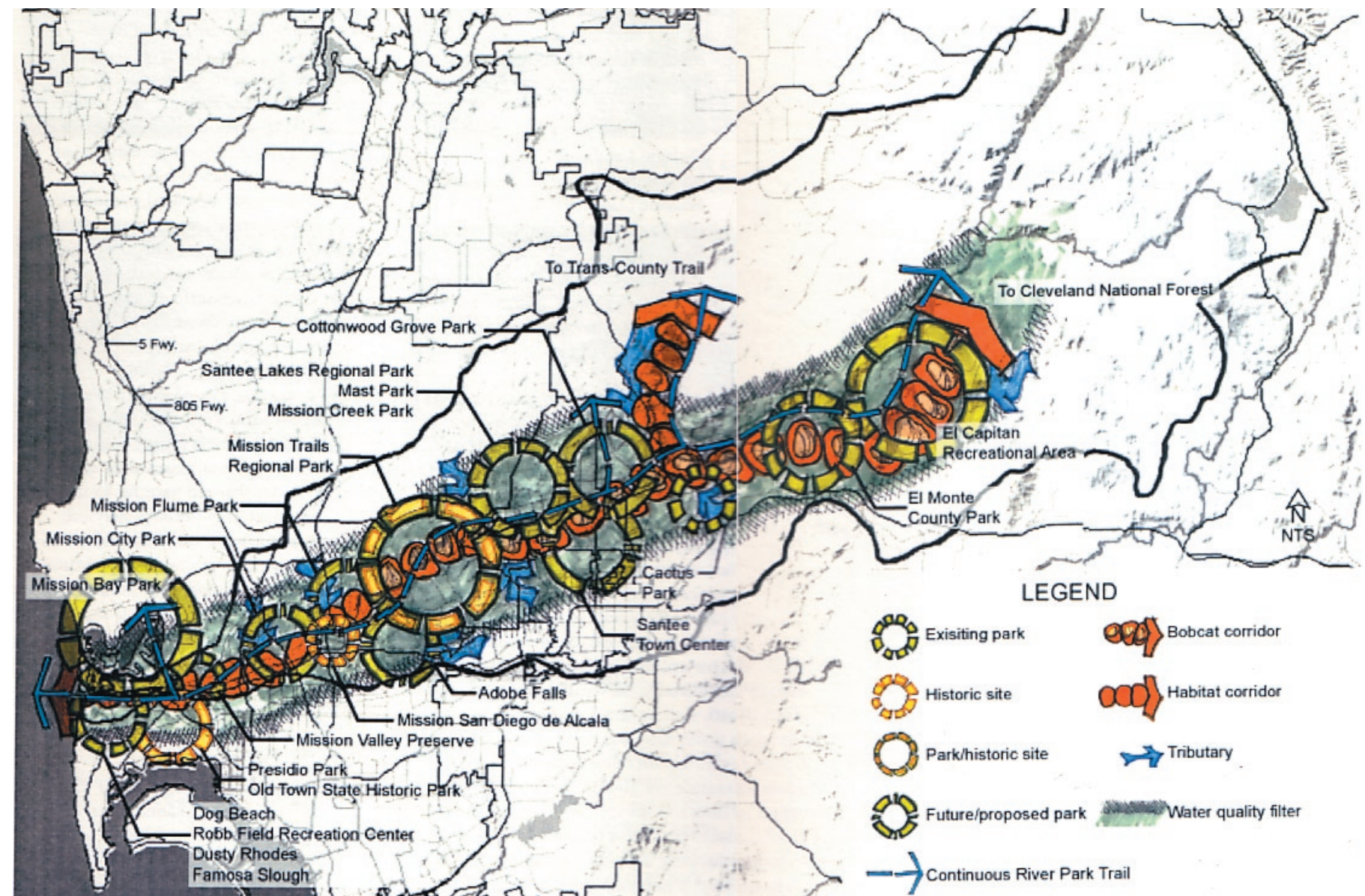
The San Diego River Park Conceptual Plan was initiated in early 2002 by the San Diego River Park Foundation as a means of creating a framework to establish a San Diego River Park along the length of the San Diego River. The Conceptual Plan was prepared by students in the Department of Landscape Architecture at California State Polytechnic University, Pomona and completed in June 2002. The 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:

- To conduct an inventory and analysis of the resources and conditions of the watershed.
- To develop a conceptual plan that reflects community desires while enhancing the natural function of the river corridor.
- To develop criteria and recommendations as a guide for design and implementation of the Park as a unified system.
- To illustrate the potential application of the conceptual plan by developing design concepts for specific sites.
- To provide recommendations to implement the 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 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.

The Conceptual Plan process included extensive public involvement with the many communities located along the river corridor. This effort included three workshops in February of 2002 and numerous presentations to communities and other groups affiliated with the process. This process led to broad based support for the San Diego River Park and consensus on the critical issues leading to the planning goals and objectives.

More information regarding this plan may be found at the San Diego River Park Foundation web site at: www.sandiegoriver.org.



San Diego River Park - Conceptual Plan

City of Villages - General Plan

The City of San Diego Progress Guide and General Plan (General Plan), last updated in 1989, established systems across the City of San Diego for phasing the development of new communities concurrent with improvements to public infrastructure. During the 1990's the City approached build-out with less than ten percent of its area available for development. The Strategic Framework Element, a new chapter of the General Plan, shifts San Diego from a suburban, new growth strategy to one of infill-based redevelopment. The San Diego City of Villages Plan is the central concept of this element. The City of Villages Strategy is designed to address growth and improve existing communities by concentrating civic programs such as schools, employment, commercial and residential into existing metropolitan areas. The in-fill (denser) "villages" would be linked by mass transit.

The General Plan vision states the need for the city to evolve as a place of great cultural and physical diversity. The plan recognizes the need for quality open space, physical, cultural, and social diversity, recreation, and a regional approach to planning. These elements are critical for the city to evolve into a great cultural center in the 21st century. As the City of Villages strategy proceeds, it will become more important to strengthen the open space, bicycle and pedestrian (hiking) linkages south, up to these neighborhoods.

More information regarding this plan may be found at: <http://www.sannet.gov/cityofvillages/vision/index.shtml>

Multiple Species Conservation Program

The San Diego County Multiple Species Conservation Program (MSCP) Final Plan identifies Mission Trails 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 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, Maintenance Assessment Districts, as conditions of permit approval, or are currently not actively managed. The areas also contribute to the public's experience of nature and the local native environment.



The San Diego River provides significant riparian habitat

San Diego Watershed Urban Runoff Management Plan

The San Diego Watershed Urban Runoff Management Plan was initiated in January 2003; when completed, this management plan is designed to 'protect the natural resources within the watershed and ensure sustainability for future generations.' The plan is intended to assist various agencies and stakeholders in the San Diego Watershed in identifying and prioritizing actions necessary to protect and/or restore 'groundwater resources, native vegetation, water flows, riparian zones, beneficial uses of waters and overall water quality.' In accordance with the Municipal Storm Water Permit process, a program has been developed for the San Diego Watershed aimed at increasing the quality of the water resources of the watershed while 'balancing economic, social, and environmental constraints.' This program identifies four main objectives:

- develop and expand methods to assess and improve water quality within the watershed
- integrate watershed principles into land use planning
- enhance public understanding of sources of water pollution
- encourage and develop stakeholder participation.

More information regarding this plan may be found at: http://www.projectcleanwater.org/html/ws_san_diego_river_plans.html

Regulatory Framework

The Clean Water Act and the California Porter Cologne Water Quality Act are the primary federal and state water quality statutes. In the San Diego River Watershed, these statutes are administered by the San Diego Regional Water Quality Control Board. Pursuant to the governing statutes, water quality objectives are established at levels necessary to protect beneficial uses such as fishing, swimming, and municipal drinking water supply. Together the beneficial uses and water quality objectives comprise the legally enforceable water quality standards applicable to the River. Beneficial Uses and Water Quality Objectives are designated in the Regional Board's Basin Plan for the San Diego Region. The Basin Plan is a very important Water Quality Control Plan applicable to the entire San Diego Region and adopted by the Regional Board in a formal public hearing. The Basin Plan also includes broad discharge prohibitions applicable to the San Diego River Watershed. A significant state regulatory permit governing water quality in the entire San Diego River Watershed is the Regional Board's San Diego Municipal Storm Water NPDES permit, Order Number 2001-01. The Municipal Storm Water Permit directs municipalities to implement an urban runoff management program on a jurisdictional and watershed level. Under the Clean Water Act, the Regional Board is obligated to calculate a Total Maximum Daily Load (TMDL) for all water bodies / pollutants on the Section 303(d) list of impaired waters. The purpose of a TMDL is to restore an impaired water body to health so that it will once again meet its designated water quality objectives and so its beneficial uses will again be supported and protected. The Regional Board is currently developing TMDLs for every bacteria-impaired water body in the San Diego Region including the San Diego River, Forester Creek, and the mouth of the San Diego River. Following final TMDL adoption, the Municipal Storm Water Permit will be amended to include the TMDL prescribed numeric waste load allocations and reductions needed to ensure compliance with the bacteria water quality objective. The Regional Board also issues permits and provides enforcement authority for all discharges into waters of California.

The US Fish and Wildlife Service and the US Army Corp of Engineers also provide a role in protecting wildlife resources and habitat. Through various permitting applications and enforcement authority, these federal agencies are directly responsible for oversight of biological resources and wetland resources respectively. Additionally, the California Department of Fish and Game provides a similar oversight to that of the US Fish and Wildlife Service with the distinction that the former is chartered with protecting the resources unique to California as well as those biological resources found throughout the nation.

San Diego River Natural Resource Management Plan

The City of San Diego is currently finalizing the San Diego River Natural Resource Management Plan (SDRNRMP). The goal is to have a plan that will facilitate the development of sound management practices that are consistent with the goals of the San Diego MSCP Subarea Plan. This natural resource management plan 'recognizes the value of natural 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 rivers 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.

The overall aim of the SDRNRMP is to provide the City staff with a document that helps to direct current and future management and acquisition activities to maximize benefits to the San Diego River as a natural and cultural resource within the framework of the existing, applicable land use plans.

More information regarding this plan may be obtained through the City of San Diego Park and Recreation Department.



The San Diego River estuary provides critical habitat for a diversity of wildlife

City of San Diego Bicycle Master Plan

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, and increase the city's quality of life by promoting cycling as a recreational activity. Safety is a primary concern for current and would-be bicycle commuters, making a safe and easily accessible bicycle infrastructure a priority for this planning effort. This infrastructure should meet the needs of both the daily commuter and the casual recreational user.

The Bicycle Master Plan addresses the San Diego river corridor as well as downtown, and identifies connecting the river corridor's fragmented collection of Class 1 bikeways as a top priority. The Bicycle Master Plan also described peripheral connections perpendicular to the river that link the surrounding communities with the main trail.

The Bicycle Master Plan was adopted by City Council on May 28, 2002.



Dog Beach provides important recreational space for dogs and their owners

Current Community Plans

Of the fifteen community planning areas in, on or adjacent to the river valley, four are bisected by or adjoin the river itself: Navajo, Tierrasanta, Mission Valley and Ocean Beach. These community planning areas, through their guidelines, can directly influence the relationship between development and the river. This relationship determines the physical character and health of the river. As community plans are updated, the recommendations and general guidelines outlined in the San Diego River Park Draft Master Plan can be integrated into the community plans and serve as tools for its implementation. While this Plan does not attempt to write specific design guidelines for the unique conditions of each community, it does include overarching general guidelines that recommend open space corridors, trail buffers, trail conditions, signage and lighting.

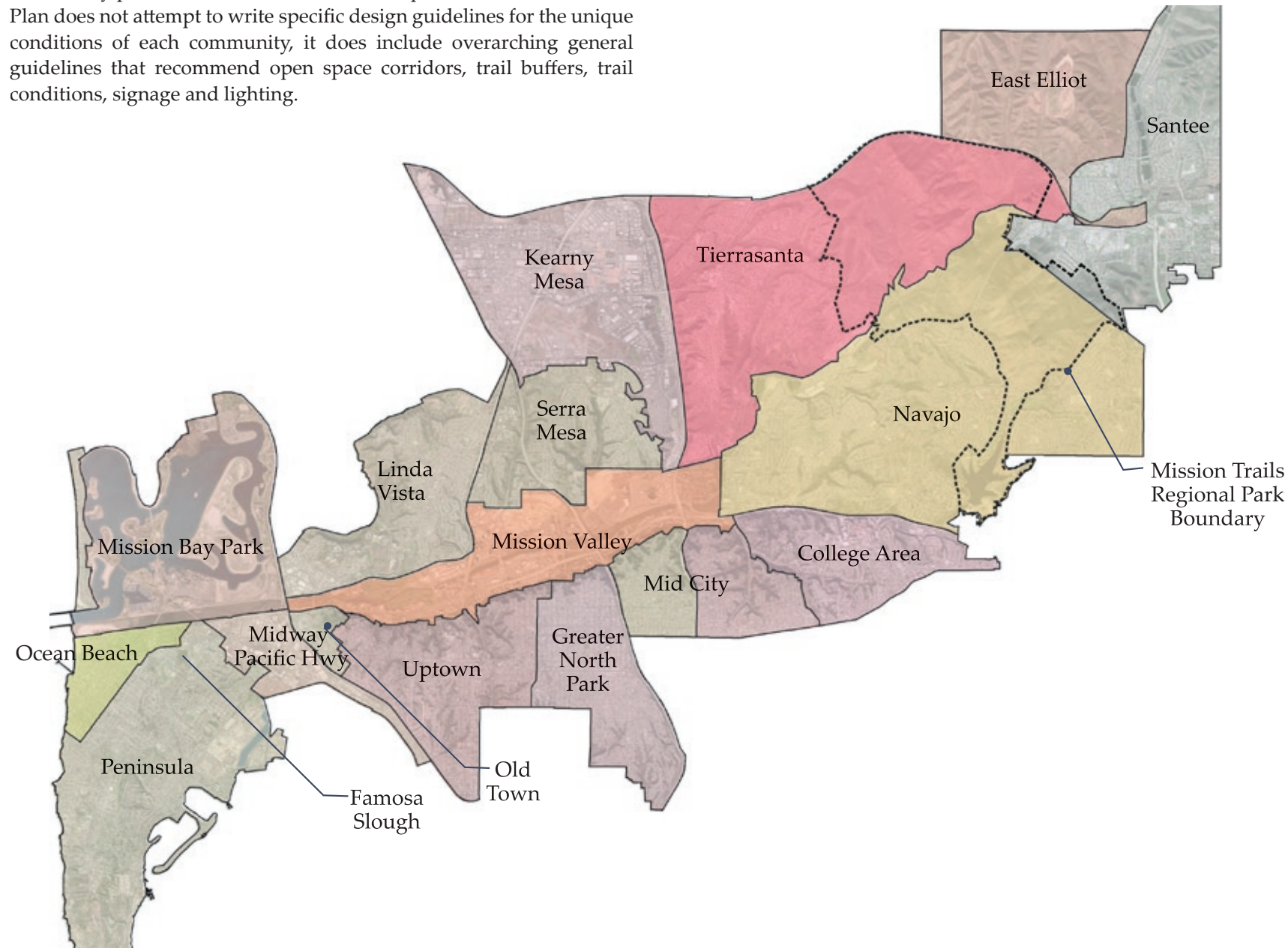
Ocean Beach Precise Plan

The San Diego River is outside the Ocean Beach planning area, but the river does have a close relationship to the community. Residents use the trail along the jetty for active and passive recreation, and Dog Beach is a major attraction to both Ocean Beach residents and other dog enthusiasts throughout the area.

The Ocean Beach Precise Plan identifies several primary issues which must be considered in its future planning. Among these issues is the preservation of the natural integrity of the San Diego River, potential uses of city land, maintenance of beach areas for public access, treatment of mixed use and commercial areas, and the preservation of the sense of community among others.

Ocean Beach is a regional resource valuable for its beaches and recreational facilities as well as its unique community character. Recreational areas such as Ocean Beach Park, Dog Beach and Robb Field are heavily used active recreational areas which, while serving a great number of citizens and tourists, are still unable to meet all of the recreational needs of Ocean Beach and its surroundings.

The Ocean Beach Precise Plan was first approved in 1975 with revisions in 1983 and 1986 and an amendment in 1991.



Community Planning Areas



Dog Beach

Mission Valley Community Plan

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 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.

The Mission Valley Community Plan was adopted by City Council in 1985 and amended at various times over the following years. An additional update is slated for release in 2005.

More information regarding this plan may be found at:
<http://www.sanmet.gov/planning/profiles/missionvalley/shtml>

Tierrasanta Community Plan

The Tierrasanta plan generally describes a low density residential community. The presence of commercial areas are 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 canyonlands 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 and is primarily considered in two ways: flood control and recreation.

The Plan also identifies a need to regulate existing sand and gravel extraction operations in order to avoid any negative impact on the San Diego River, its habitat or recreational activities.

The Tierrasanta Community Plan was approved in 1981 and amended in 1991.

Navajo Community Plan

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. Much of the community's runoff finds its way to the river and the occasional flooding of the river impacts future land use planning in the floodplain.

The plan includes specific language for the design of structures within the 100-year floodplain, suggesting that such buildings keep their low-rise sections nearest the river with higher sections appearing in tiers further from the river. The plan also calls for a continuous trail along the San Diego River. This trail is described as being a minimum of 10 feet wide and placed within the minimum 20 foot setback. It is also designated that all structures within 150 feet of the 100-year floodway will provide at least one pedestrian access path from the main trail to the structure.

The Navajo community plan was approved in 1982, and amended in 1989 and 2002.



Navajo Canyon in Navajo Community Area



Mission Valley



Elanus Canyon in Tierrasanta

Current Related Plans

The San Diego River Park planning area intersects four park or resource planning areas, passing through Mission trails Regional Park, the First San Diego River Improvement Project (FSDRIP), Mission Bay Park and abutting the north edge of Famosa Slough. The San Diego River Park Draft Master Plan supports these successful plans and the planning effort for the River Park must continue to partner with the leadership of these entities as it moves toward implementation.

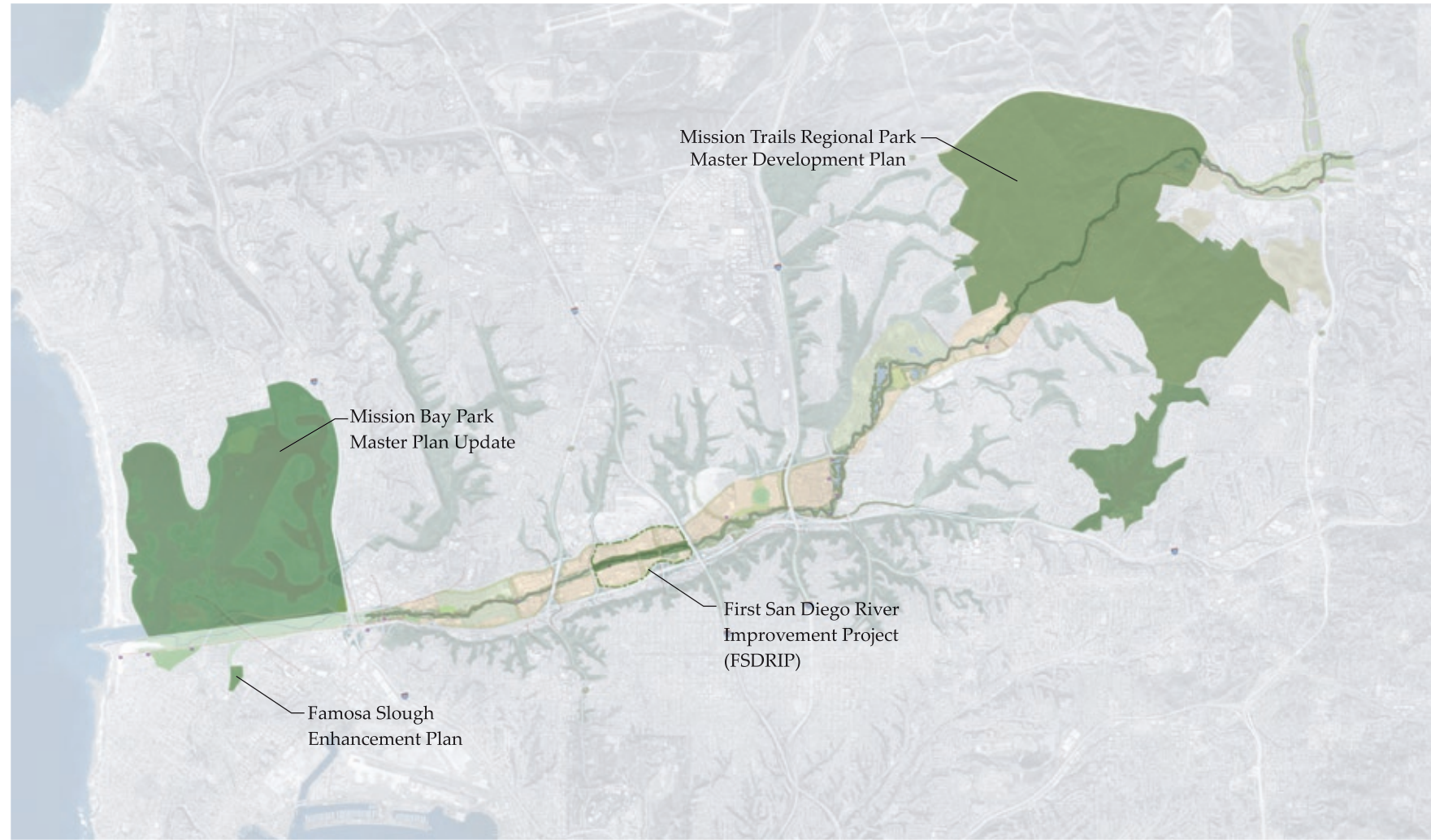
Mission Trails Regional Park Master Development Plan

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

The Mission Trails Regional Park Master Development Plan defined 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; 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 Draft 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.



Current Related Plans

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.

Lake Murray, Cowles and Fortuna Mountain Regional Park Master Development Plan was approved 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 approved in 1985 by the San Diego City Council and the San Diego Board of Supervisors.



Mission Trails Regional Park



FSDRIP Pond



FSDRIP Trail

First San Diego River Improvement Project (FSDRIP)

FSDRIP is the mitigation site for a 100 year flood control project that was completed in 1988 and funded through an agreement with property owners who benefited from the flood control. Located in Mission Valley, the project encompasses the area between Qualcomm Way and Highway 163.

In the 1970's, winter flooding limited the potential for land owners in this 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 to provide guidance for the protection of natural resources, maintenance of original permit goals, and remedial measures to revegetate disturbed natural habitats. The plan also delineates acceptable public and recreational uses within the area.

FSDRIP was approved in 1987 and was 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.

Mission Bay Park Master Plan Update

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 update 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 park land, coastal landscape, and overflow parking.

The Mission Bay Master Plan was updated in 1994.

Famosa Slough Enhancement Plan

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 I-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 recommended 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.

The Famosa Slough Enhancement Plan was completed in 1992.



Mission Bay - De Anza Cove



Famosa Slough

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Principles

A successful planning process demands the communication of intent, 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 plan can respond to and accommodate changing conditions.

Building upon the Conceptual Plan and discussions with the Citizen’s Advisory Committee, the following seven principles emerged and were tested in public workshops and meetings. These principles are the guiding ideas that express the essential elements of the San Diego River Park, describing the intent and role of the Park in the city and in the region. While recommendations may change as conditions change in the future, the principles do not, and are the guide against which all future decisions are tested. These principles are:

- Principle One: Clean-up and restore hydrologic function to the river*
- Principle Two: Reclaim the valley as a common*
- Principle Three: Unify fragmented lands*
- Principle Four: Emphasize a continuum of experience*
- Principle Five: Reveal the valley history*
- Principle Six: Reorient development toward the river*
- Principle Seven: Create a synergy of people, water, wildlife*



The gorge in Mission Trails Regional Park



The river passes through dense urban development in Lower Mission Valley



San Diego River Estuary in the Southern Wildlife Preserve



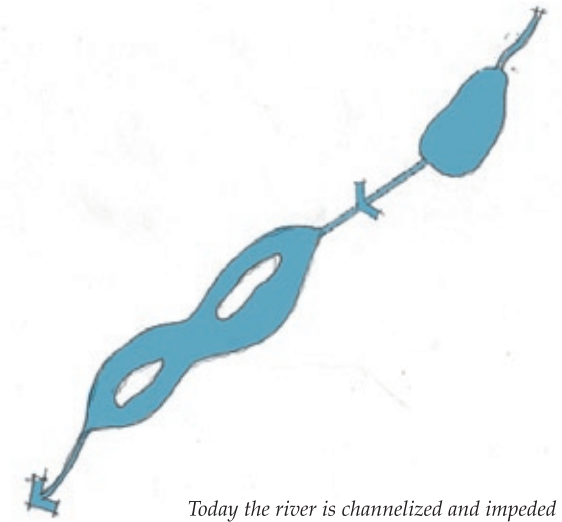
Existing pond near Friars Road



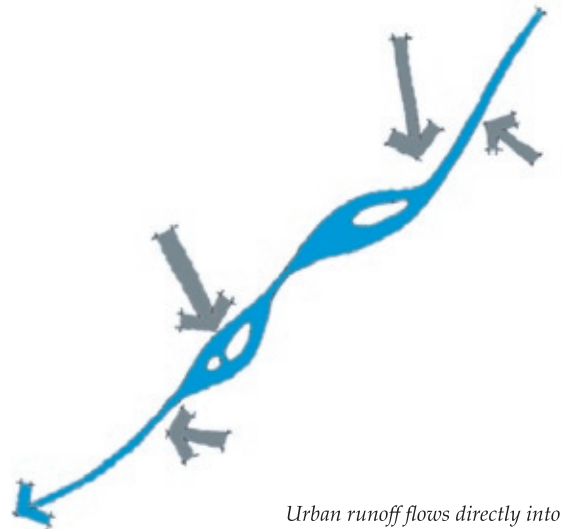
Existing outfall along river



Free flowing stream above Old Mission Dam



Today the river is channelized and impeded by ponds



Urban runoff flows directly into the river



The San Diego River of the future

Principle One: Clean up and restore hydrologic function to the river.

Human activity has dramatically altered the river’s natural hydrologic regime. Originally an ephemeral watercourse, river flows ranged from seasonal high flow events in the wet season to no surface flow in the dry season. Flow varied from season to season and year to year, sometimes inundating the entire valley under floodwaters. Damming has further altered the river’s functioning; the El Capitan and San Vicente dams have essentially broken the river into multiple watersheds and isolated the upper watershed from the lower river valley. Water contained within these reservoirs serves the City of San Diego.

The river now flows perennially, most notably augmented by urban runoff. Beyond changing the natural fluctuation of river flows, urban runoff can also bring a large number of pollutants that range from mildly to highly toxic. Water from precipitation sources is critical to diluting urban runoff.

Substantially-sized ponds, a result of adjacent mining activities, interrupt the river channel. Ponding and channelization present two opposing impacts on the river. Ponds decrease flow velocity and impede sediment transport, the river’s self-flushing mechanism. The reduced flow leads to an increase in water temperature encouraging the growth of non-native aquatic vegetation. Channelization favors a straightened river alignment; the removal of meander decreases the actual length of the river. This shortening of the channel length has three deleterious effects:

- It concentrates more water in less space, resulting in increased flow velocity and erosion.
- It reduces filtration and ground water recharge.
- It reduces the river’s contact with riparian vegetation, to the detriment of that habitat.

While the river cannot return to a truly natural flow state, a properly managed condition can restore a large degree of the river’s hydrologic function. The San Diego River Park effort will recognize the existing hydrologic condition as the baseline. Management should focus on controlling the pattern of flow, improving water quality, improving sediment transport and increasing groundwater recharge. Wherever possible and appropriate, management activities can also provide opportunities for additional research, monitoring, public education and enjoyment.

Principle Two: Reclaim the valley as a common.

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

The valley as a *place* must be identifiable. The River Park should present a consistent character that sets it apart from its urban surroundings and speaks to visitors of a separate place, a vast and complex system that invites exploration but defies specific definition. Consistent character does not mean homogeneous character; it means a landscape that knits together harmoniously and authentically. The River Park should express a spectrum reflecting the change in river ecology and function; the river's character as it joins the Pacific is not the same as its character where it originates in the mountains.

Key to establishing a river *identity* is defining an appropriate corridor. The river corridor must be wide enough for natural landscape expression, provide common space for people, and integrate with the surrounding community.

The valley as a Common must be *accessible* and *continuous*. The river corridor should have multiple points of access. It should accommodate a wide variety of users, from walkers to runners to bikers. The river corridor must also offer continuity, both visually and functionally. Visually, landscape transitions should be natural and logical, not abrupt juxtapositions of conflicting uses. Even highway and utility rights-of-way can be aggregated and vegetated to contribute "borrowed space" to the river corridor. Functionally, users should be able to experience the entire length of the river, unbroken by trail and facility disconnects.

Creating the River Park presents the opportunity to educate the public about the value of this place to the settlement of the region, about the preciousness of clean water and about becoming stewards of this land.



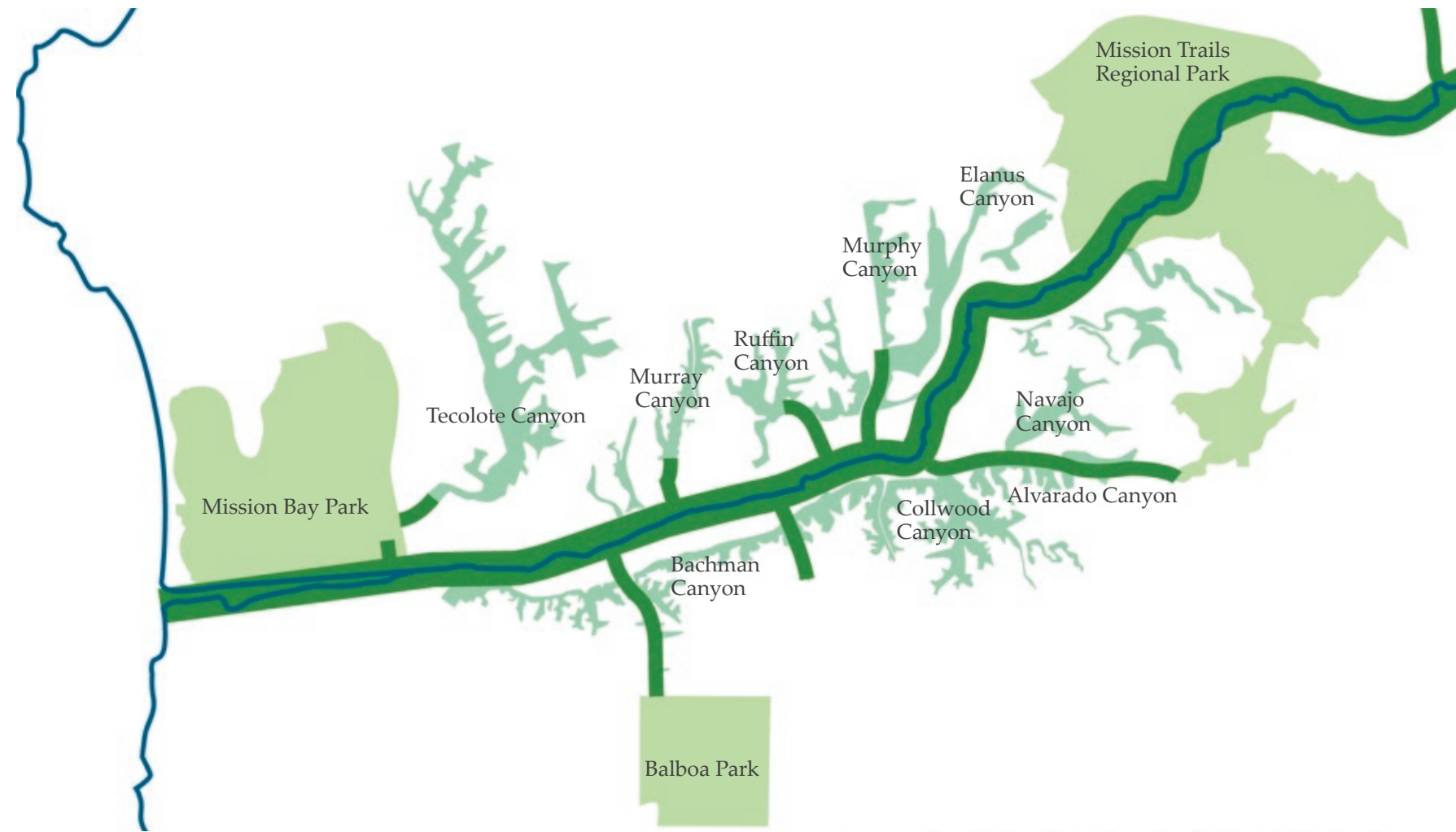
FSDRIP Trail



Mission Valley Common



An example of an urban edge along Guadalupe Creek



Principle Three: Unify fragmented lands.

The river passes through and near significant open space in Mission Bay Park to the west and in Mission Trails Regional Park to the east. The lands between these two points, however, are a patchwork of developed and undeveloped areas. These lands are critical to preserving and expanding the continuity of native landscapes. Creating a continuous transect of native plant communities from riparian to upland is essential to encouraging the movement of wildlife from the canyons and Mission Trails Regional Park into the river valley. Knitting the river corridor together through landscape and use expands the sense of the river valley as a whole.

Of key importance are those lands at the fringes of development and infrastructure, highway rights-of-way and infrastructure easements. By planting these areas in native plant species, by making the infrastructure itself part of the beauty of the valley, the overall extent of habitat, connection and visual character can be significantly expanded.

Significant undeveloped land also remains in canyons extending north and south from the valley, specifically Tecolote, Murray, Ruffin, Murphy, Elanus, Bachman, Collwood, Alvarado and Navajo Canyons. Portions of the valley walls are also undeveloped. Some of this land is identified as open space in community plans, yet is disconnected from the river valley by roads and development. By linking these lands at every opportunity, open space can be aggregated on a scale that is appropriate to the urban environment surrounding the valley. These links can also create visual and physical benefits for people. Connecting disparate trail segments can lead to a greater city wide trail system offering a variety of experience and landscape. Linking these open lands also allows for wildlife movement and population increase through greater habitat area.



Existing open spaces are fragmented



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



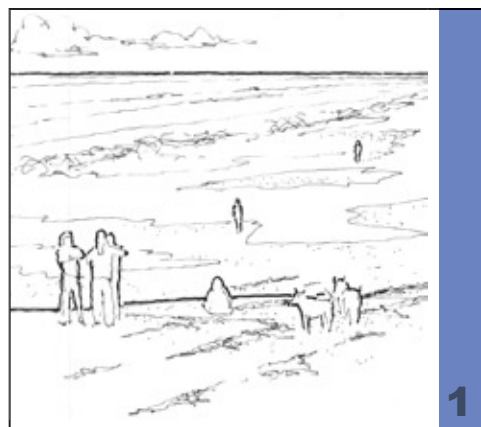
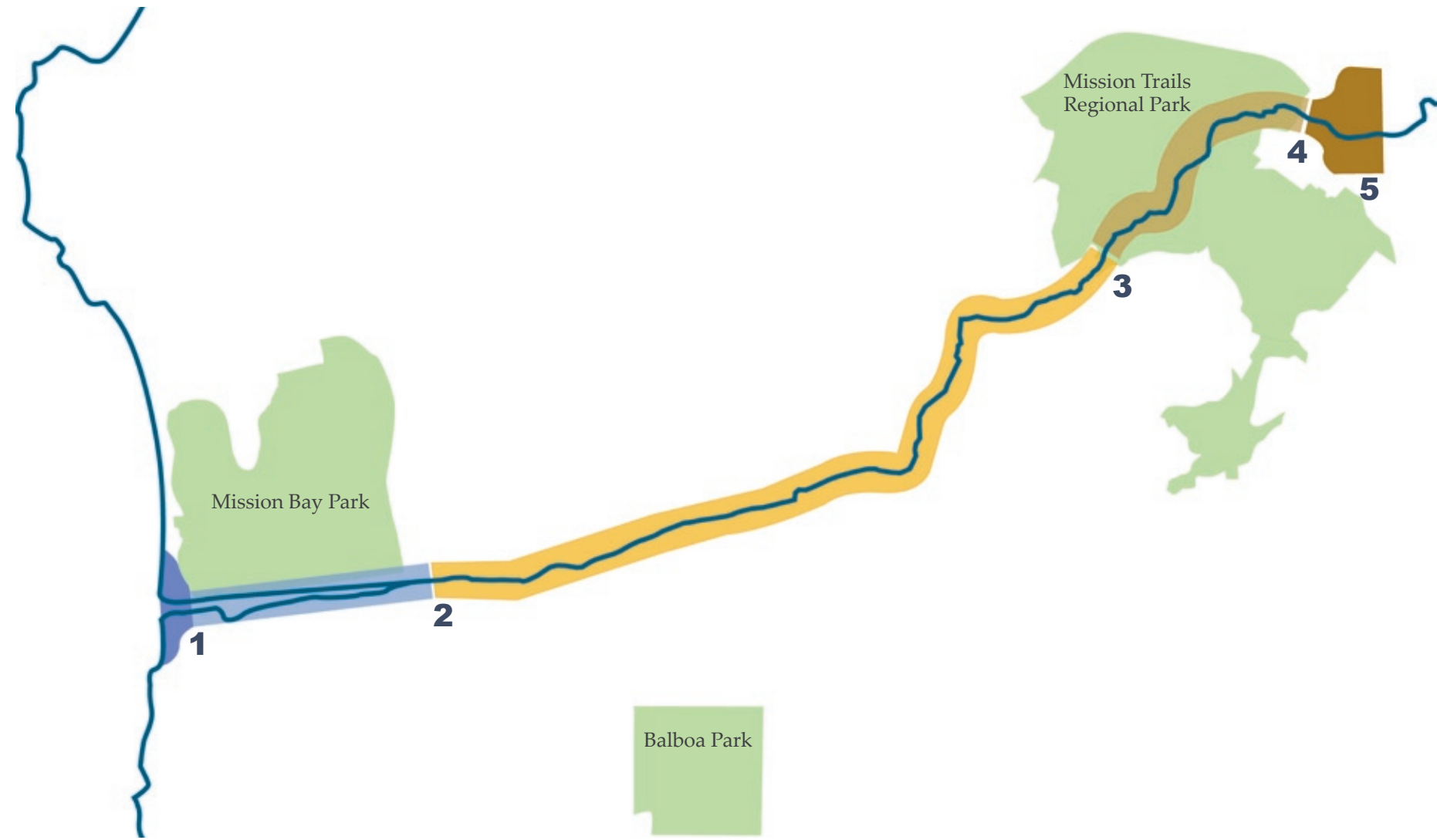
Like most canyons, Ruffin Canyon no longer reaches the river valley

Principle Four: Emphasize a continuum of experience.

The experience of the landscape is diverse and changes throughout the valley. A visitor senses expanse at the estuary and coastline, the rampart of the coastal terrace at the Presidio's, walled shelter moving into the throat of the valley, the broad Mission Valley stretch, the constriction of the soaring walls in the gorge and again 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. 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.

The river's character extends not just east-west following the valley, but also radiates north and south into adjacent canyons and communities. Visual continuity couples with physical continuity as an integral piece of the sense of the valley as a place. The San Diego River Park should seek opportunities to enhance both kinds of continuity.



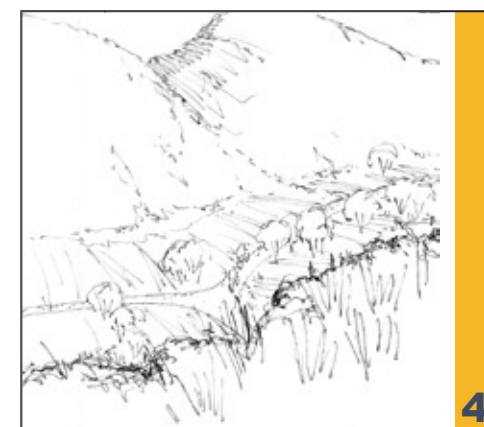
1 Ocean and beach



2 Estuary



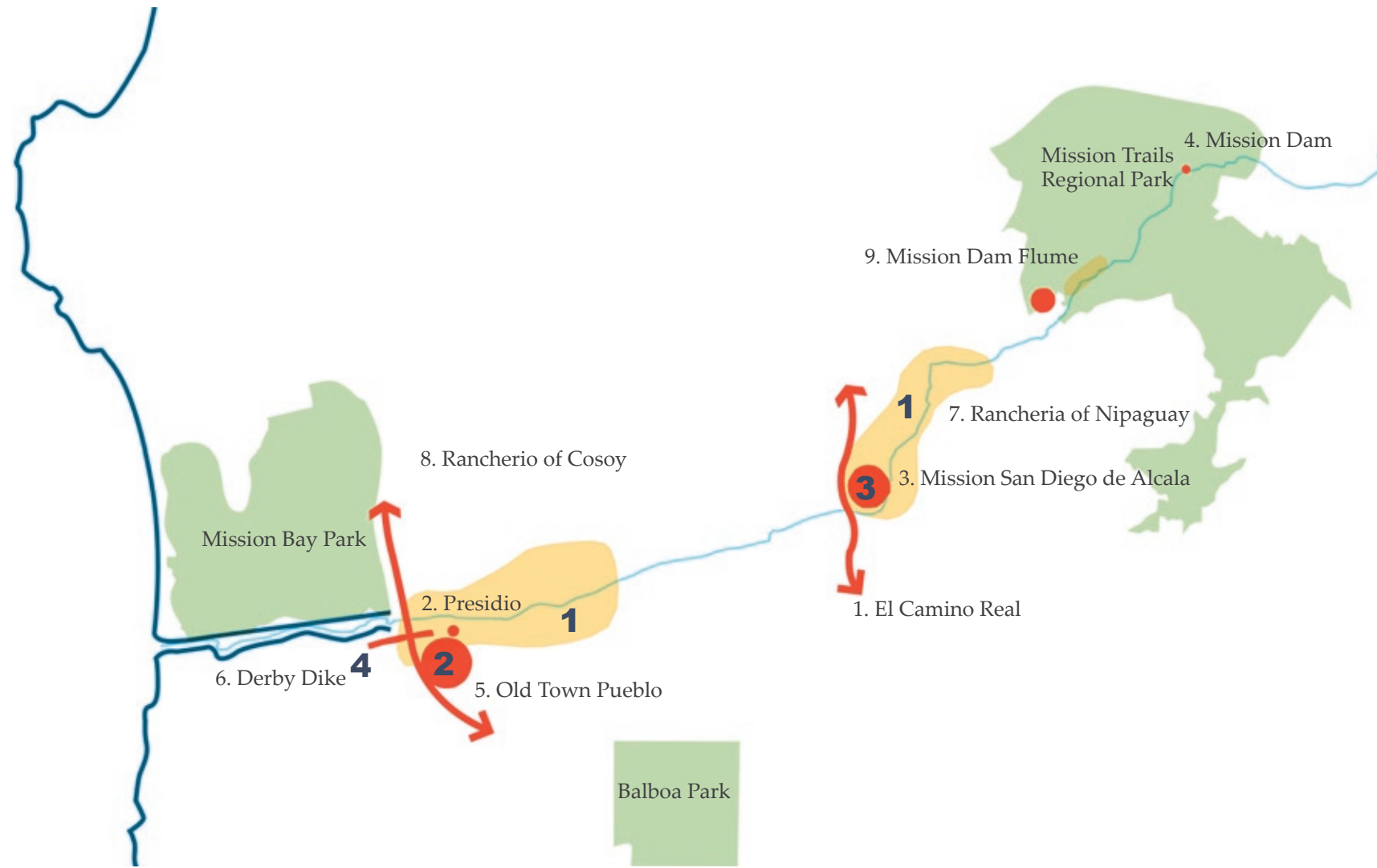
3 Nature in the urban valley



4 Gorge



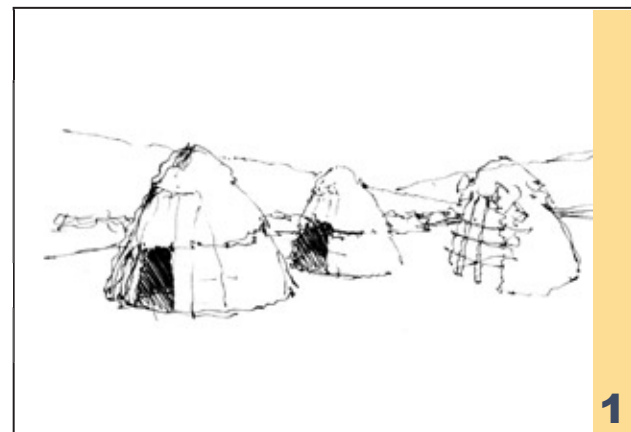
5 Plateau



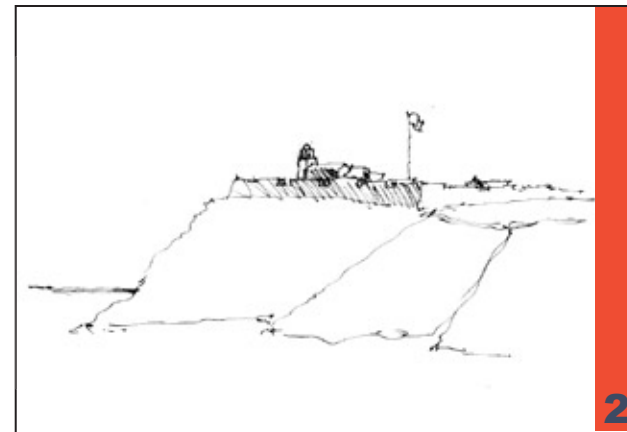
Principle Five: Reveal the valley history.

The valley has long been central to the settlement of the San Diego region. The presence of water was the impetus for the earliest native peoples 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. These sites have particularly vivid and visible histories that can be further interpreted.

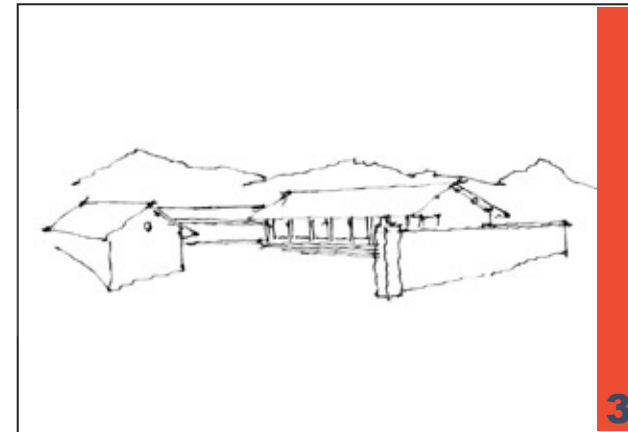
The San Diego River Park Trail is an opportunity to link these locations, stimulate public interest in the River's history, and expand the public's knowledge about the prehistoric and historic people and land uses within the valley. Increased public interest and knowledge benefits these sites by instilling 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 sites may be too sensitive to be exposed and should remain closed to the public.



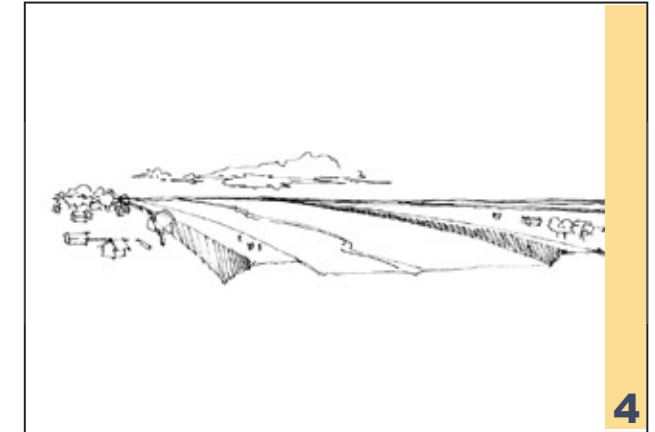
Kumeyaay Village 8000 BC - 1760



Spanish Period 1760-1820



California Period 1820-1848



Derby Dike American Period 1848-1945

Principle Six: Reorient development toward the river.

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

The River Park should be a 'front door', an amenity to celebrate. Planning efforts should work with property owners to seek ways to draw the River Park character into current uses. 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.

Focusing on the river is not 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 connection. To restore and protect the River, we must understand the impacts of land use decisions, urban development, and hydromodifications on water quality.



Example of an urban edge at Guadalupe Creek River Park



The riparian woodland of the river can link to the city by connecting people with nature, creating access, and unique development opportunities facing the River Park.



The River Park edges can provide access, water quality filtration, and pleasant outdoor spaces.

Principle Seven: Create a synergy of people, water, wildlife.

Key to the success of the San Diego River Park is to build a synergy that best serves all the valley and its many inhabitants, including people, animals and plants. Each of these interests 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 and interrupted by mining and ponds.

Creating a synergy for the river requires a swing in the balance toward recovery, protection, preservation and prevention of further degradation. Reestablishing the ecologic 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 trails and recreation. The potential of the River to serve as an educational tool overlays all of these different places. Such delineations must be made fairly and equitably. A successful San Diego River Park will satisfy these diverse concerns.



Achieve a synergy and a balance



The unique and cherished Dog Beach



Free flowing stream above the gorge



Rich wildlife of the Southern Wildlife Preserve

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Recommendations

The principles described in the preceding section define the essential goals and guiding ideas for the vision of the San Diego River Park. The recommendations that follow describe specific strategies for achieving the intent of the principles.

It is important to note that while each recommendation fits into a larger, comprehensive 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 opportunities as they arise with property owners to implement the Plan's ideas.

The San Diego River Park is many parks and one park. In the initial part of this section, the general and reach-specific recommendations address measures to improve elements of the river corridor, create new parks and expand recreational and habitat resources. Five key recommendations are identified that apply to all reaches of the river and extend beyond the valley itself linking the entire river corridor into a coherent system. The remainder of the section is organized by general recommendations relating to four elements of the San Diego River Park: Hydrology and Water Quality, Habitat and Wildlife, Recreation and Cultural Interpretation, and Public Art. The general recommendations are followed by Specific Recommendations for each reach.

The Hydrology, Habitat and Wildlife, Recreation and Culture, and Public Art each have a set of related benefits and influences that interrelate. These multiple elements must be considered in the implementation of every facet of the River Park, especially in confined areas. Each recommendation must be considered in the context of how it influences and is influenced by its effect on other systems, and how it can be woven into the fabric of the City itself. Every action taken toward creating the San Diego River Park, large scale and small must consider the role it plays as a part of the whole, to reinforce the perception of the river, valley and canyons as a complete natural and urban system.

The vision of the San Diego River Park crosses boundaries of land ownership, special interests, disciplines and jurisdictions; the ultimate whole is greater than the sum of its parts. Creating the San Diego River Park will require a multi-disciplinary approach and the collaboration and cooperation of a diverse group of public and private entities to implement the many discrete but interrelated elements.

Many of the ideas expressed in the Principles and Recommendations in this plan were first discussed thirty years ago in Kevin Lynch's *Temporary Paradise* and further developed in the *San Diego River Conceptual Plan*. In addition, the *City of Villages Plan* incorporates the idea of using the open space and the transit corridor of the river to link and define the communities along the river. The San Diego River Park will create an interesting sequence of places with unique characteristics that stem from the natural conditions of each reach and community.



An example of where nature, river and city meet along the San Diego River



Exploring the edge of the San Diego River near Carlton Oaks Golf Course

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Key Recommendations:

Executive Summary

Return the river to health.

Improve the river pattern and water quality by separating stream flow from ponds; look for opportunities to create a wider riparian corridor with more meander. Improving water quality will allow the river to support all other beneficial uses including wildlife habitat and recreation. Remove invasive non-native vegetation and plant a diversity of native species to re-establish a range of native plant communities.

Introduction

Remember the big picture.

Connect the valley to adjacent open space including the beaches, Mission Bay Park, Tecolote, Murray, Ruffin, Murphy, Elanus, Bachman, Collwood, Alvarado and Navajo Canyons, and Mission Trails Regional Park, to create an ecostructure of a unified native landscape by transforming rights-of-way, acquiring land and creating easements.

Principles

Build city wide connection.

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

Recommendations

Assemble a beautiful infrastructure.

Integrate infrastructure (transportation, utilities, stormwater) and ecostructure (rivers, vegetation, wildlife corridors, habitat) into "beautiful infrastructure" making key ecological and infrastructure functions visible. Partner with public agencies to transform roads, bridges, the trolley, parking lots, culverts, channels and utility easements to be part of a unified landscape, maintaining and enhancing connections between adjacent natural habitats, residential communities, and the San Diego River Park.

Design Guidelines

Create a sequence of unique places and experiences.

Establish a linked string of parks and open spaces through land acquisition, easements and partnerships with land owners in key locations. These 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. The opportunity to educate visitors about all of the different stories about the river is part of all of these places. Collaborate with and support community planning efforts to identify areas for redevelopment and new development to have a river focus, 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 process to support the creation of places that are mutually beneficial.

Appendices



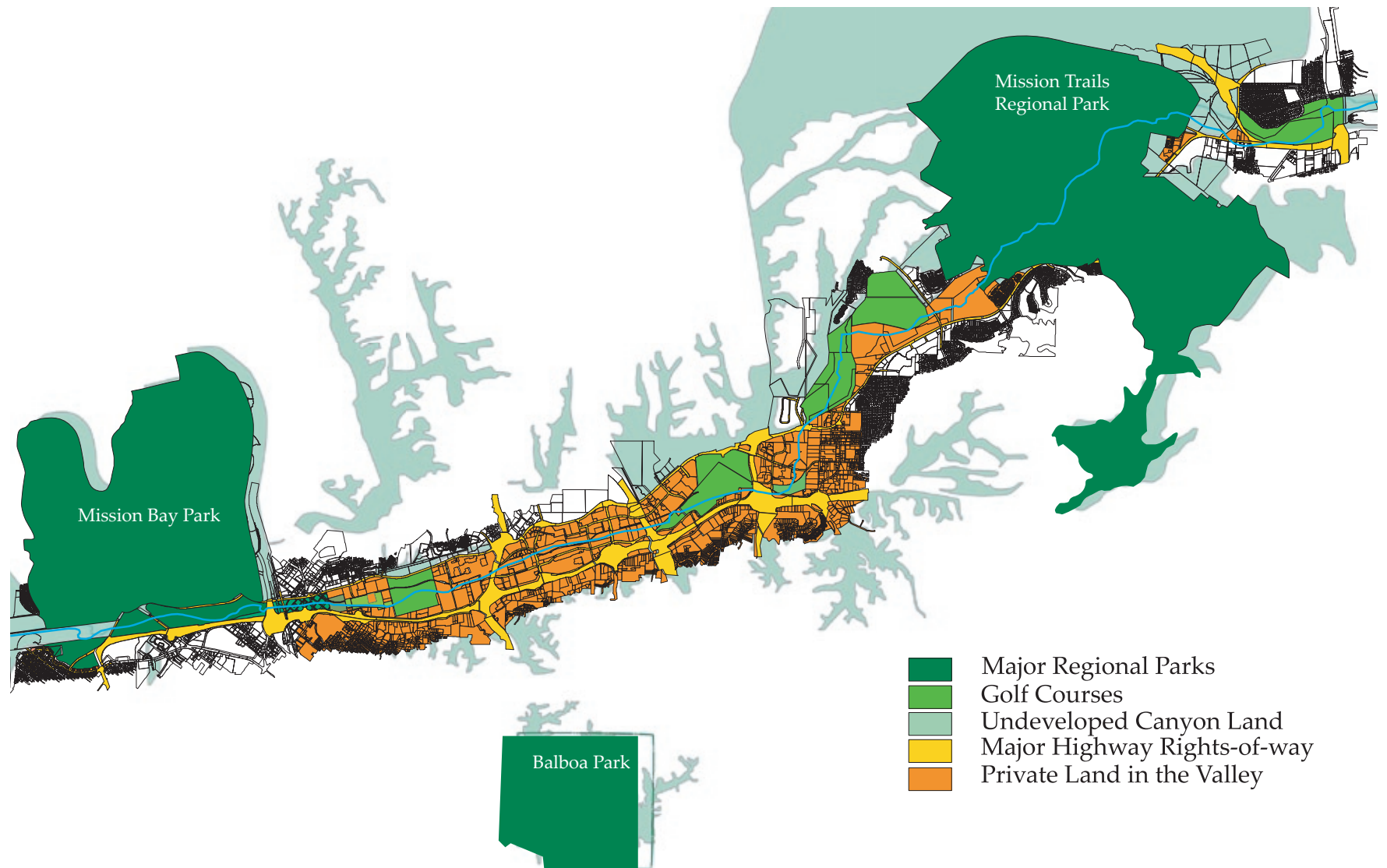
Connecting habitat and open space such as Tecolote Canyon



Trail connections will link neighborhoods with the river



Flowing river in Mission Trails Regional Park



Parks, open space and highway rights-of-way combine infrastructure with ecostructure

General Recommendations: Hydrology and Water Quality

Intent

The San Diego River Park will create a healthier river, one that flows with cleaner water and invites people to see, visit, smell, and listen to it. A healthy San Diego River will become the symbol and embodiment of the river valley's natural character.

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. To create a healthy San Diego River specific benchmarks must be met:

- It will be free flowing from Old Mission Dam to the ocean.
- It will be meandering, braided, and free of ponds.
- It will be bordered with native riparian vegetation that provides habitat for wildlife and filtration of urban runoff.

The creation of the San Diego River Park in the City of San Diego can 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.

A healthy river does not, however, mean returning the river to its pre-impoundment flow, unpredictable and ephemeral; such an approach is neither achievable or desirable. While the current year-round flow has been a factor in supporting extensive invasion by exotic species, it will ensure a reliable water supply to maintain diverse and healthy natural riparian habitat.

Human activity has pushed and squeezed the river for decades, resulting in constrictions, channelization and ponds, both from mining and for flood control. 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

Seek opportunities to:

- Augment flows to the river periodically.
- Remove/circumvent obstacles that impede flow.
- Remove invasive vegetation species.
- Encourage the growth of appropriate riparian vegetation.
- Re-contour the channel to encourage meander and braiding.
- Expand the floodplain.
- Adopt programs to reduce/remove non-point source loads of pollutants and prevent pollutants from entering the river at their source.
- Incorporate hydrology & water quality considerations in all future planning and guidance documents
- Provide interpretive information regarding the value of the river, clean water, and importance and process of rehabilitating the river.
- Explore potential to benefit from reclaimed water.

Augment flows to the river.

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.

Remove/circumvent obstacles that impede flow.

Numerous impediments exist in the 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 it 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/macrophyte growth, 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 recreation and community opportunities for fishing, boating, birding and other activities. It is beneficial to the river to separate the channel from the ponds, but with aeration and other treatments the ponds can remain as assets to the River Park.



Historic gravel mining has resulted in numerous ponds

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Remove invasive vegetation species.

As it relates to hydrology and water quality, 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 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.



Arundo donax has invaded many sections of the river

Encourage the growth of appropriate native riparian and upland vegetation.

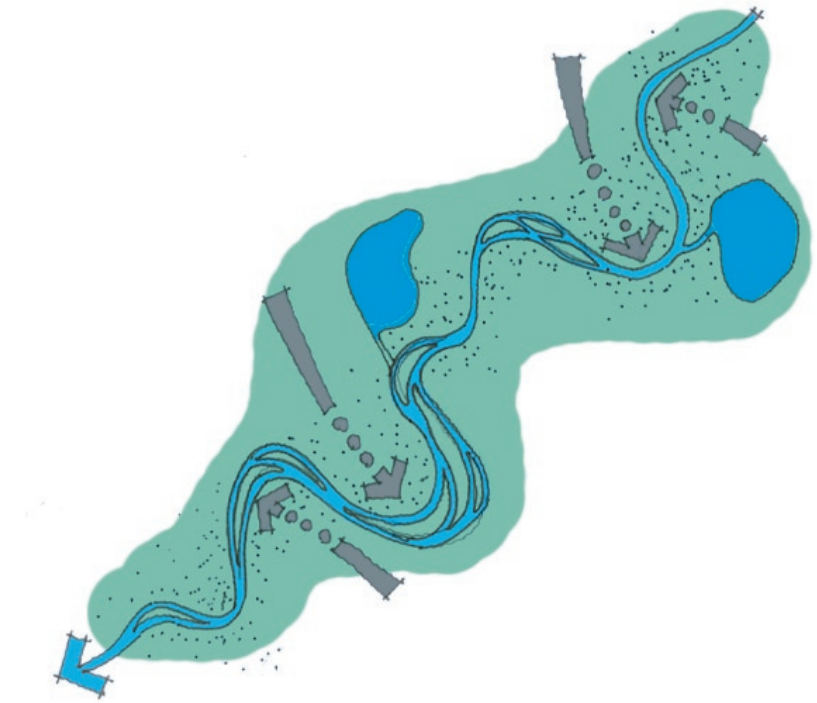
Appropriate and continuous native riparian vegetation has direct benefits to hydrology and water quality. Continuous native vegetation communities form upland canyons and slopes to the riparian river valley create conditions needed to encourage wildlife to move between the canyons and the river. As indicated in the preceding recommendation, inappropriate vegetation impedes flow and squanders water. Exotic species should be removed, and the areas replanted with native species. Best management practices should be implemented to encourage the propagation of existing 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 river bed, 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 phytoremediation, or biological filtration through uptake. Such an approach would require careful study and should not displace native habitat in the corridor.

Re-contour the channel to encourage meander and braiding.

Over the past decades, the river has become increasingly channelized by projects that seek to transport water from higher to lower elevations in the most efficient manner. Most efficient has often meant 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; braiding refers to river that has carved multiple simultaneous channels, diverging from and rejoining itself. Both of these river patterns (contrasted to a straightened, channelized path) contribute to greater riparian habitat, greater groundwater recharge and reduced velocity. Without meanders and braiding, the river’s current channel is shorter overall. With the same amount of water concentrated in less space, flow velocities are relatively higher than before channelization.

Although it is impractical to consider returning the floodplain to the river in any substantial form, it is possible to increase river length and decrease flow velocities. Where possible, the low flow portion of the channel should be reshaped to include meanders. By increasing the river length, there is an inherent increase in the riparian corridor and available habitat. The longer reaches also result in decreased flow velocities.



A braided meandering river supporting a broad riparian environment that filters urban runoff



Channelization of Tecolote Creek

Expand the river’s recharge area.

In conjunction with the preceding recommendation and where such opportunities exist, the river’s length can be increased-via meander-by removing artificial levees that constrain the river. A number of such floodplain expansion programs have been successfully executed throughout the country on similar rivers; these programs have paid careful attention to the potential risks associated with flooding and have proved to manage the risks well.

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

The hydrologic junction between fresh water and salt water at the estuary is especially sensitive. Conditions that encourage the growth of exotic species should be eliminated. Back waters off the estuary should be created to serve as wildlife refuges and buffer against future damaging events such as the 1983 flood.

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 continue to enter the river via storm drains.

Stormwater is governed by the San Diego Municipal Storm Water NPDES permit. The 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 exceeding of water quality objectives, identify and eliminate sources of illicit discharges, and enforce local municipal water quality related ordinances.

The City should acknowledge the linkages between land use in urban and suburban developments to impacts on the river, and develop comprehensive programs to eliminate 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 non-point source pollutant reduction/elimination is 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.



FSDRIP Ponds



Riverwalk Golf Club

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

General Recommendations: Habitat and Wildlife

Executive Summary

Intent

The San Diego River Park seeks enhanced 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 of the surrounding habitat.

Introduction

Healthy and continuous native plant communities are essential to encouraging the movement and inhabitation of wildlife. Today the canyons, undeveloped 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. The objective is to create a continuous native riparian corridor along the river and a continuum of native plant communities from riparian to upland in the canyons. 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.

Principles

Recommendations

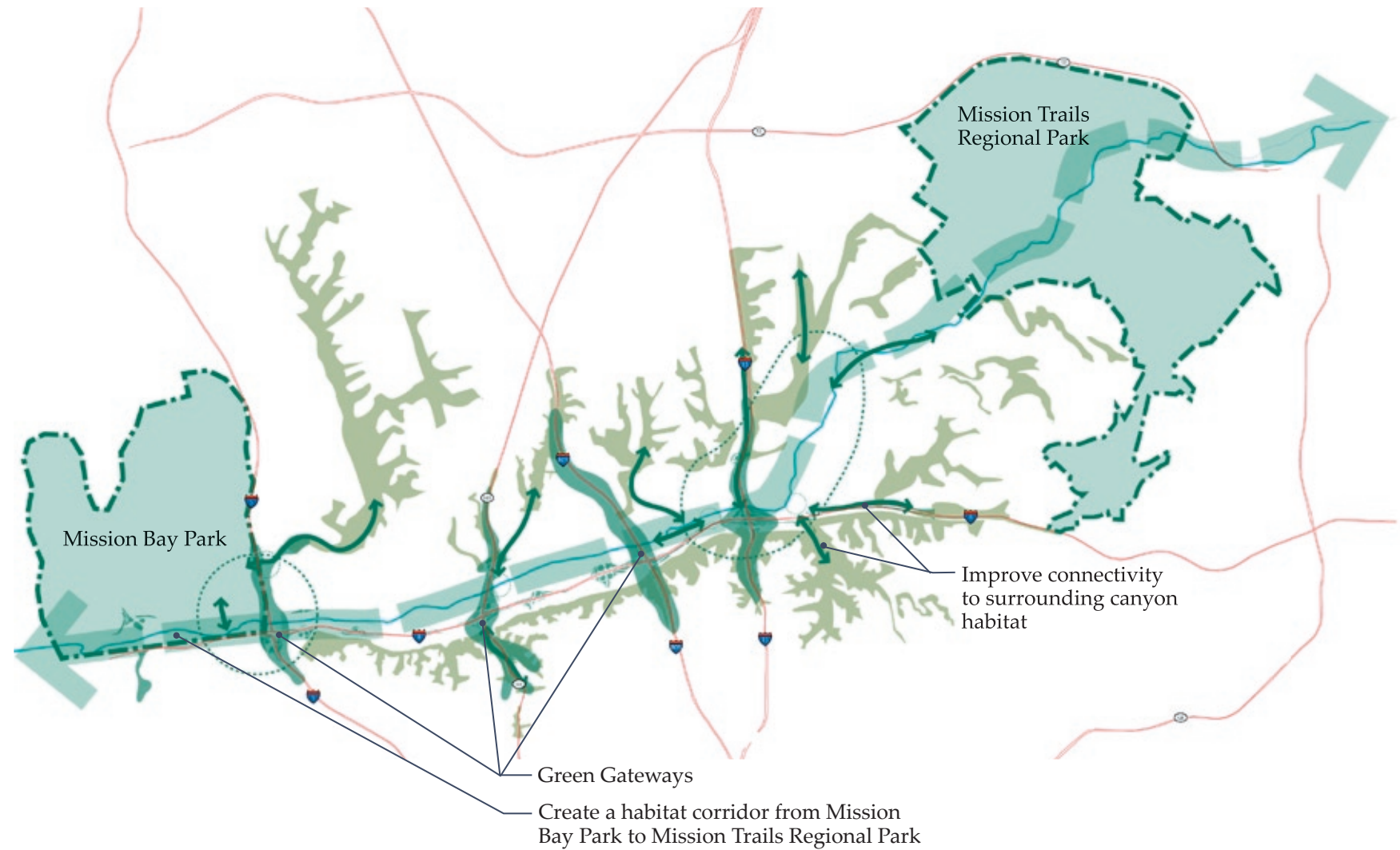
An important step to enhance connectivity is to integrate both “infrastructure” and “ecostructure” to improve the connectivity of natural habitat. Infrastructure describes such services as transportation, utilities, and stormwater, while the term ecostructure encompasses rivers, vegetation, wildlife corridors and habitat.

Design Guidelines

To be included in this ecostructure designation, lands must meet two or more of the following conditions: be located within the San Diego River watershed, part of the river corridor/floodplain (as identified in the reach sections of this document), functioning natural habitat, designated park or open space or 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. As the last remnants of native habitat, these areas were identified as biologically significant and incorporated into the San Diego MSCP Subarea Plan.

Implementation

Appendices



Ecostructure of the San Diego River Park



Reduction, or loss of habitat and associated fragmentation are two of the biggest factors in 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, or fragmented and isolated upland habitat. Opportunities to increase habitat are limited, 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.

Recommendations

- Establish appropriate corridor widths to achieve objectives.
- Acquire open lands and pursue open space easements.
- Eliminate invasive plant species and reintroduce native species.
- Encourage multi-use redevelopment.
- Reclaim frontage roads as pedestrian and bicycle-only green buffers.
- Naturalize floodplain areas.
- Daylight the river's tributaries.
- Use biological systems to treat all stormwater before it enters the river.
- Separate pedestrian/wildlife and vehicular river crossings.
- Establish 'Green Gateways' as defined in this section.
- Establish habitat corridors as secondary gateways at side canyons and tributaries.
- Convert smaller, adjacent streets to 'Green Streets' as defined in this section.
- Provide interpretive information regarding natural systems and the rehabilitation of the river

Establish desirable and appropriate corridor width objectives

Water bodies and wildlife need 'breathing room' to maintain health and integrity. Open space corridors function as water quality buffers and as valuable habitat areas. Corridor widths must be determined based on available land and specific wildlife populations along each section of the river*.

An important element of establishing adequate corridors is encouraging development and redevelopment to take place an appropriate distance from the river's edge. This concept aligns with Army Corps of Engineers (ACOE) recommendations for floodplain management. The San Diego County Multiple Species Conservation Program (MSCP) Final Plan identifies the San Diego River valley as a habitat linkage from Mission Trails Regional Park to the ocean, and therefore the open space and habitat corridor should provide adequate space for wildlife

movement. The presence of specific animal species is closely related to the width of the undisturbed open space available. The width also impacts whether the species inhabit or merely transit through the open space. Substantial wildlife habitat exists in Mission Trails Regional Park (MTRP) and in the canyons adjacent to the river valley. Maintaining corridors through the river valley will create a network of open space for habitat that will encourage wildlife movement through and residence within the valley. The objective is to preserve a wider optimum corridor in undeveloped land between Mission Trails Regional Park and Friars Road to create the potential for movement of larger wildlife from MTRP through the river valley and to Elanus Canyon above Admiral Baker Golf Course and back to MTRP. The river valley narrows and infrastructure impacts increase downstream of Friars Road, limiting the opportunity for larger animal species movement and residence of smaller species. The objective between Friars Road and Mission Valley Preserve is to preserve or create a continuous habitat corridor adequate to encourage movement and residence of smaller species. As the River Park Master Plan is implemented in specific areas within the valley, specific land development plans should be prepared to test the objectives for each site. The actual width of habitat corridors in various locations should be determined at the time of site specific planning and in conjunction with balancing the achievement of other objectives such as the quality and viability of private development, trail connections and other considerations. Refer to the Design Guidelines in the document for specific information regarding corridor objectives and recommendations.

**Studies of wildlife movement and resident populations (Integrated Natural Resources Management Plan for Marine Corps Air Station Mirimar) suggest that a corridor width of 300 feet is generally adequate to support resident species of birds and smaller mammals, while a corridor width of 500 feet is generally optimum to allow movement of larger mammals as well as increased resident populations of birds and small mammals. The City of San Diego Land Development Code - Biology Guidelines, Section III Biological Impact Analysis and Mitigation Procedures, recommends that areas of native vegetation that are less than 400 feet wide for a length greater than 500 feet are considered isolated (p. 21). The guidelines further reference the MSCP recommendation that at urban interface edge conditions widths should range from 200 to 600 feet depending on adjacent land uses (p. 21).*

Acquire open lands and pursue easements.

To expand, unify, and connect the river corridor, open space parcels or easements on private property should be acquired.

Eliminate invasive plant species, reintroduce native species and develop long-term management plans.

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 San Diego River Park planning process should coordinate with agencies, community groups and land owners to develop and implement vegetation management programs to remove exotic species and plant native riparian vegetation. Such plans should also consider Water Primrose, a native aquatic plant that requires management to control its spread. Special concern needs to be given to the timing of this work in order to minimize impacts to existing habitat, species, and wildlife use. On going management and maintenance is necessary to ensure establishment of native species and to prevent the return of invasive species. Programs should be developed to educate and coordinate vegetation management on both public and private lands.

Naturalize floodplain areas.

Naturalization should address both current and potential future hydrologic regimes. Similar to previously executed work in the Mission Valley Preserve, naturalization should consider the regrading 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. A next step would use the naturalized floodplain areas to restore river channel dynamics to a more natural hydrologic regime. This naturalized regime would result in improved riparian habitat, particularly for listed species that depend on the river as an agent of disturbance in the floodplain.

Encourage multi-use redevelopment.

Development that can accommodate multiple uses, reduce the amount of land locked in development, and free more land for open space uses. By way of example, an under-utilized asphalt parking lot could be replaced with multi-function areas such as natural habitat areas, multi-use green space (recreation, temporary seasonal parking, etc.) for active and passive recreation.

Reclaim frontage roads as pedestrian and bicycle-only green buffers.

The San Diego River Park planning effort should examine existing frontage roads to assess daily traffic and availability of alternate routes. Where possible, little-used frontage roads, or segments of frontage roads, should be converted to green, vegetated buffers for non-motorized use.

Daylight the river and its tributaries.

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

Use biological systems to treat all stormwater before it enters the river.

Biological treatment systems (constructed wetlands) provide water quality buffering that illustrates natural processes, provides wildlife habitat and maintains the character of the river corridor. This method of water filtering aligns with the Bureau of Reclamation Stormwater Treatment Program goals. Include interpretive signage to educate visitors about the value and function of such systems.

The San Diego River Park should also make stormwater treatment locations visible and educational features that interpret the day-to-day function and cycles of a river. Refer to Hydrology and Water Quality Recommendations.

Separate pedestrian/wildlife and vehicular river crossings.

San Diego River Park improvements should retrofit existing river crossing 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.



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

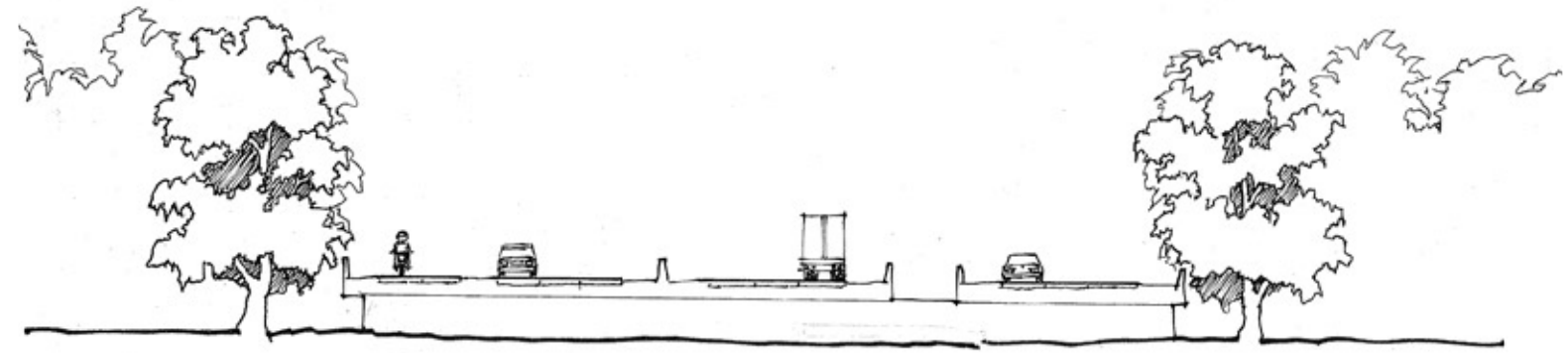
Establish 'Green Gateways.'

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 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. Functionally, these gateways will provide additional habitat and connectivity between the riparian corridor and adjacent upland areas.

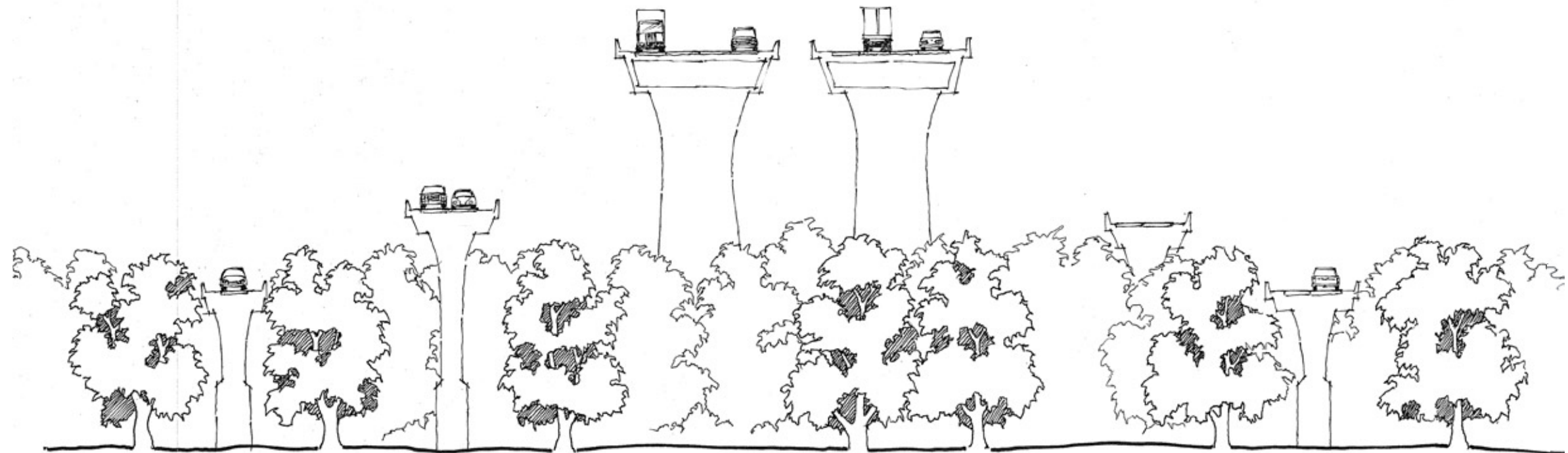
The San Diego River Park should implement gateways at a range of scales, sized to fit the visual and functional needs of the connections being made. Large-scale gateways are appropriate at locations where highways such as I-5, SR-163, and I-15 cross the San Diego River Valley. I-805 offers a visual gateway to the valley below. These plantings include native trees and understory vegetation selected from the Native Plant Species Lists in Appendix i. 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. An iconic tree such as this one will emphasize river proximity. Open space parcels, whether acquired outright or through 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.



Highway infrastructure and rights-of-ways consume much of the valleys and canyons



Section of the Cabrillo Freeway (SR-163) illustrating the “through gateway” experience as SR-163 crosses the San Diego River. There is a sense of enclosure and a cooler microclimate within the riparian forest canopy



Section of I-805 illustrating the “over gateway” experience as the highway crosses above the San Diego River. From above, the greenway makes the extent of the river’s domain obvious to the motorist.

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.

In some areas, development may make it difficult to meet the minimum corridor widths. In these cases, provide for as wide a corridor as feasible by establishing a recreational trail connection occupying or supplemented by open space easements.

Encourage Access for Traditional Activities

Maintain and encourage physical and visual access to the river wherever possible and where it can be accomplished without disturbance to wildlife habitat. In addition, maintain and encourage access to native vegetation in the river valley by Native American communities for collecting native plants for traditional uses such as basket weaving, etc.

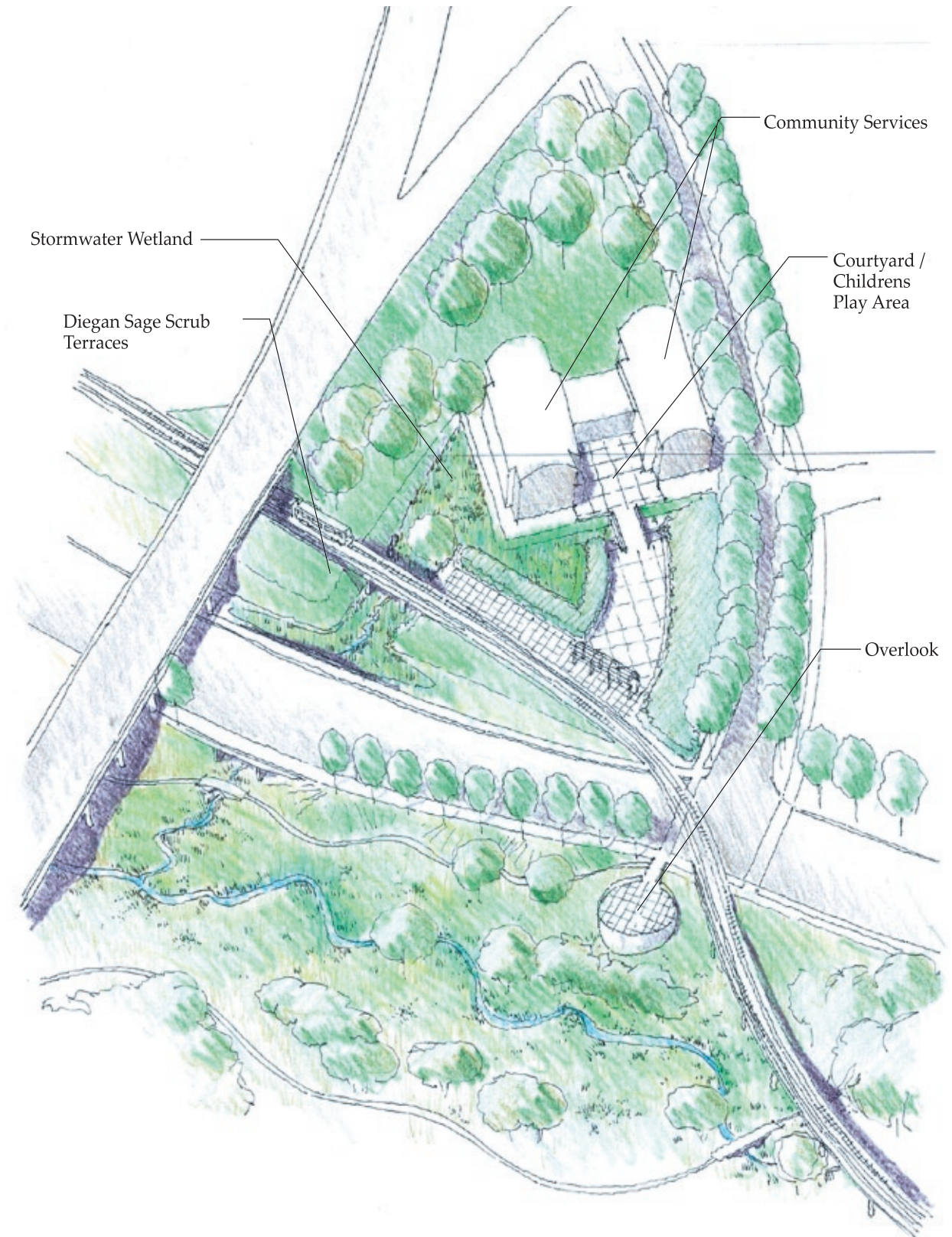
Convert smaller, adjacent streets to 'Green Streets.'

Green streets will offer open swale stormwater conveyance and have a tree canopy composed, in part, of native species. These green streets should extend north and south beyond I-8 and Friars Road to provide connectivity to adjacent communities and upland habitat.

Conceptual Model:

Public Infrastructure

As an example of building upon the public infrastructure, a trolley stop might function as a community focal point and interpretive site, as well as a connection to river park trails. This example is the type of idea that the San Diego River Park seeks to achieve.



An example of building on public infrastructure

General Recommendations:

Recreation and Cultural Interpretation

Intent

The San Diego River Park Draft Master Plan proposes recreation facilities where the need exists, where such facilities would be accessible to the community and where recreational facilities would not require displacement of existing development. The proposed east-west multi-use trail, as well as connecting lateral bike paths and pedestrian trails, are proposed to link neighborhoods to new parks and regional recreation facilities. Interpretive areas and passive park uses are recommended where cultural and natural resources are most significant.

The San Diego River Park planning effort seeks to identify recreation needs and opportunities in the river corridor. Although the recommendations that follow focus on the one mile wide San Diego River Park planning corridor, existing facilities and recreation needs were examined within the fifteen adjacent community planning areas. According to Park & Recreation standards, many of the communities have major parkland deficits. Open, developable land for new parks is very limited throughout these communities. The river corridor is an appropriate place to provide additional recreation, given the valley's central location. As an added benefit, expanding park lands within the corridor can contribute to open space preservation.

This section discusses active and passive recreation. These recreational uses must be balanced with the protection of native habitat for wildlife. These will be places that encourage access to the river itself, for fishing and kayaking, and other places where human disturbance to habitat is discouraged. The San Diego River has been crucial to the settlement and culture of the San Diego Region. The River Park offers the opportunity to reconnect citizens with the river through education and interpretation, and by creating programs that will invite schools to visit the river and corridor and use its rehabilitation as an educational tool. Active recreation provides for activities such as sports facilities, fields, and open turf, while passive recreation provides for activities such as nature study, hiking trails, and interpretation of cultural sites. The River Valley also has many private facilities that offer commercial recreation, and the planning process must consider the relationship of those facilities to the San Diego River Park.

Recommendations

- Connect recreational experiences into a linear system
- Create connections from Ocean Beach to Santee
- Create waystations
- Upgrade and integrate existing parks into San Diego River Park system
- Explore opportunities for additional community- or neighborhood-scale park
- Integrate interpretation and education of ecology, history, culture and natural systems at every opportunity
- Create access to the river for fishing, bird watching, kayaking, canoeing and other water activities wherever possible.

The seven recreation recommendations listed above will tie the San Diego River Park together. These recommendations work together to provide a balance of community and neighborhood based facilities and to relate those facilities to regional open space and parklands. While the first two recommendations are broad in scope, the remaining recommendations are more site-specific.

Create a connected, linear recreational system

Reinforce the River Park with recreational and interpretive elements throughout the corridor's length. Land uses and character should be appropriate and sensitive to the river and to the surrounding neighborhood. Elements within individual parks along the San Diego River Park corridor will vary, depending upon exact location. This recommendation seeks to create green spaces and naturalized areas for informal use, adjacent to existing developments.



Dog Beach

Recreational and Interpretive Elements

- Pocket park sized play areas
- Waystations
- Interpretive areas
- Gathering places/amphitheatres/outdoor classrooms
- Refreshment facilities/Coffee Carts
- Interpretive loop trails
- Education/research sites
- Tree-shaded public parking (cars, motorcycles and bikes)
- Transit connections

Create connections from Ocean Beach to Santee

Organize an east-west multi-use trail from Mission Bay Park and Dog Beach to Mission Trails Regional Park. This trail is referred to in this document as the San Diego River Park Trail. The primary trail should be continuous, open to all non-motorized vehicles and pedestrian uses, and uninterrupted by conflicts with vehicles. Wherever possible, the trail should be paved. Paved trails of any kind are not allowed within Mission Trails Regional Park with the exception of the existing Father Junipero Serra Trail and Lake Murray path. However, alternative trail surface materials that harden and stabilize the tread, and work esthetically and environmentally with the surrounding landscape while meeting the needs of non-motorized vehicles, may be used with the approval of the Park and Recreation Department managing Mission Trails Regional Park. The use of such alternative materials also requires the concurrence of the Mission Trails Regional Park Citizens' Advisory Committee and Task Force. This multi-use trail should conform with the San Diego Bicycle Master Plan. Cases where conformance is not possible, or depart from design guidelines in favor of alternative options, are discussed later in this document, in the Specific Reach Recommendations section. Throughout the corridor, lateral connections to neighboring communities should be provided.

Path and Trail Elements

- Multi-use path on one side of the river only, except in Mission Trails Regional Park
- Unpaved pedestrian trail, generally on opposite side of the river from the multi-use trail, where appropriate
- Separate all portions of multi-use path from vehicular uses
- Above and/or below grade crossings at all intersections of the multi-use path with vehicular traffic
- Design guidelines for incorporating the multi-use path into future developments
- Lateral connections to neighborhoods:
 - Primary links: Morena Boulevard, Jackson Drive, Mission Gorge Road, Texas Street, Ulric Street
 - Secondary links: Princess View Drive, Tierrasanta Boulevard, Zion Avenue, Mission Village Drive, Mission Center Road and Bachman Place
- Connections to businesses and activity/shopping centers
- Connections to resource based parks: Balboa Park, Presidio Park, Mission Bay Park, and Mission Trails Regional Park

Create waystations

Waystations will offer stopping points along the river’s length, or at nodes where a north-south connection to a community meets the San Diego River Park. Generally, waystations will be along a multi-use path or pedestrian trail, and will feature scenic views or interpretive opportunities. Waystations at new neighborhood parks, mini-parks and cultural resource areas will draw upon a common set of San Diego River Park building materials and graphics. Refer to the Design Guidelines section of this document for recommended materials.

Waystation Elements may include

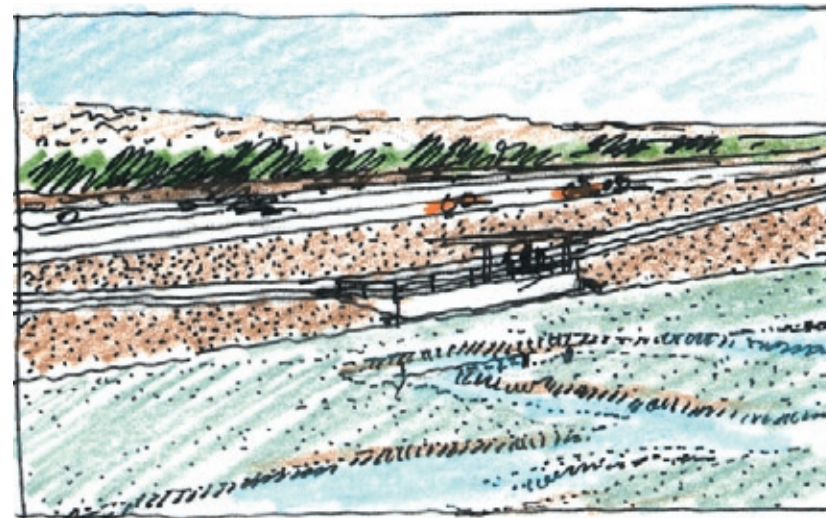
- Bike staging area
- Interpretive elements (natural science, history, culture)
- Kiosks/newsstands
- Parking
- Restrooms
- Links style golf (at Carlton Oaks)
- Naturalized areas with native plants
- Picnic areas
- Locations:
 - Dog Beach (western portal)
 - Carlton Oaks (eastern portal)
 - various gateways, portals, nodes and interpretive areas

Integrate 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 project. 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. Refer to the Design Guidelines section of this document.

Parks

- Mission Bay Park
- Dog Beach
- Dusty Rhodes Park
- Robb Field
- Presidio Park
- Tecolote Canyon
- Ruffin Canyon
- Allied Gardens Park
- Rancho Mission Canyon Park
- Mission Trails Regional Park



Overlook platform at Estuary



Walkers along bikeway

Explore opportunities for community or neighborhood-scale park

The Mission Valley community requires 38 acres of recreational parks in order to be in compliance with the City of San Diego population-based goals for 2002. By 2020, it is estimated that this number will increase to 66 acres of parkland. Long-range San Diego River Park planning should address this issue so that if Qualcomm redevelops to 100%, San Diego River Park facilities would provide at least 60% of Mission Valley's required park area.

Create Multi-Use Paths and Pedestrian Trails

Bicycle paths are an important element of recreation and essential to the San Diego River Park. Paths provide an alternative to automobile travel, offering users a slower-paced and more direct experience. New paths proposed as part of the San Diego River Park Trail system will be paved, multi-use paths open to both bicycle and pedestrian use, secondary pedestrian trails, or hike/bike soft paved trails in Mission Trails Regional Park. Generally the multi-use path will link existing paved trails except in Mission Trails Regional Park where trails are unpaved other than Father Junipero Serra Trail. For this document, Class I Bikeways are per Caltran Highway Design Manual, and Multi-Use and Secondary Pedestrian Trails are defined as follows:

Class I Bikeway (Bike Path):

Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with crossflow minimized. These are typically paved, have separate right-of-ways, and are mostly in parks, along rivers, beaches, and lakesides. Minimum turn radii and grade per standard.

Multi-Use Path:

8-12 feet wide paved concrete path with 2 foot wide gravel shoulders on each side. Minimum radii and grade per standards

Hike/Bike Trail:

Soft paved trail (gravel fines)
No minimum radii, alignment responds to natural conditions with no disturbance to existing vegetation and minimal grading.

San Diego River Park Trail in MTRP:
In accordance with MTRP standards

Secondary Pedestrian Trail:

5' wide soft surface trail (gravel). No minimum radii, alignment responds to natural conditions with no disturbance to existing vegetation and minimal grading.

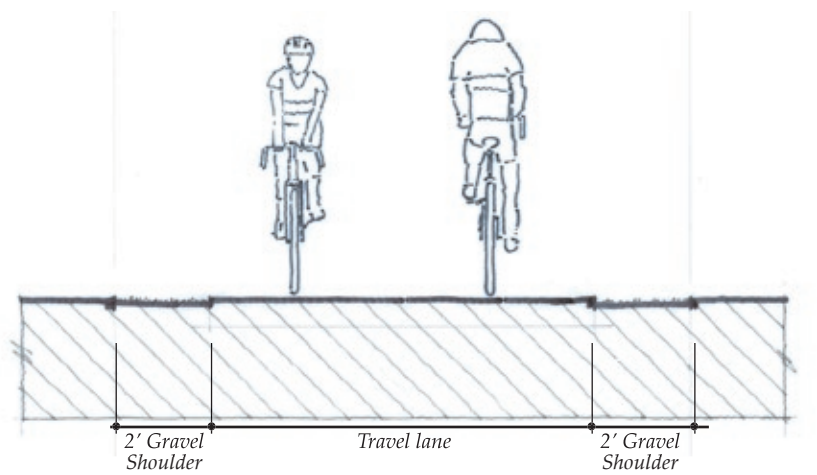
Various City plans and studies, listed below, were consulted for the multi-use path and trail component of this master plan. Assistance was received from City planners and the San Diego Bike Coalition.

- Plan Report - City of San Diego Bicycle Master Plan (2002, ALTA Transportation Consulting)
- Feasibility Study – Mission Valley Bikeway (2001, Kimley-Horn and Associates)
- Qualcomm Stadium / Zion Avenue Bikeway Feasibility Study (2001, Rick Engineering)
- San Diego River Bikeway Feasibility Study (2000, Linscott Law & Greenspan Engineers)
- San Diego County Transportation Plan
- Color-coded Mission Valley Community Plan with Existing/Proposed Bikeways & pedestrian Paths (2004, John Wilhoit, City of San Diego).

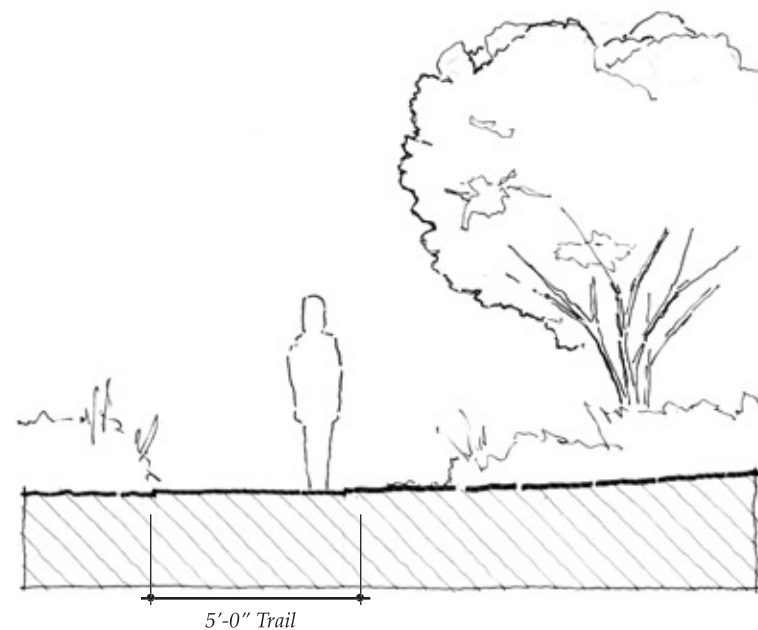
There are several bike paths in the San Diego River Park that are part of the multi-use path system separated from vehicular circulation and shared with pedestrians. Common goals shared between this master plan, the 2002 City of San Diego Bicycle Master Plan, and the community plans are as follow:

- Continuous bike path from Ocean Beach, through Mission Valley and to Mission Trails Regional Park – along the San Diego River
- Connection to Mission Bay
- Connection to Mission Hills
- Connections to activity centers in Mission Valley
- Bicycle sensitive signal detectors at signalized intersections
- Above-grade crossings at key vehicular/multi-use path conflicts
- Connection to city of Santee trail system

For more info:
<http://www.dot.ca.gov/hq/oppd/hdm/hdmtoc.htm#download>



Multi-Use Trail



Secondary Pedestrian Trail

General Recommendations: Public Art Recommendations

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Intent

Public art has a potent role in bringing life to the San Diego River Park. The diversity of history and culture in the San Diego region and specifically in the San Diego River Valley offers a tremendous opportunity to engage the community with the experience of the river. Public art should integrate with cultural and natural systems, interpret the river and its ecosystems and build upon the specific circumstances of the diverse environments along the river corridor. The City of San Diego has adopted a public art policy that promotes artist involvement in selected City design and construction projects. Such involvement is encouraged with all projects associated with the San Diego River Park.

Recommendations

- Create identity with art
- Integrate art that interprets the river into the San Diego River Park experience
- Include artists in the design process and provide for an artist in residence program
- Make art accessible to everyone

Create identity with art.

San Diego River Park Trail System

At every opportunity, art should be incorporated into the San Diego River Park Trail. Art elements should be a component of trail access points, interpretive areas and signage, fountains where appropriate, fencing, furnishings and in the paving texture and color of the trail itself at locations of significance such as intersections, street crossings and entrances.



"Alvarado Gardens"
Artist: Robert Millar

Integrate art into the San Diego River Park experience.

Public Art in Parks and Open Space

Art should play a role in the design of parks and natural open space. In parks, art elements should be incorporated into entrances, furnishings, lighting, fencing, interpretive areas and signage, as interactive elements and as sculpture. In natural areas, a sense of design should be incorporated with the science of ecological restoration of native habitat to create identifiable and memorable places, as the form can add richness and understanding of how the natural systems function. In addition, art should be incorporated into the interpretation of the systems.

Include artists in the design process.

Public Art in Public Projects

In projects initiated by public entities, art and artists should be involved in a significant role to contribute to the project design. 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 potential opportunity to teach, interact with schools, and to actively engage people with art and the river.



"Snake Path"
Artist: Alexis Smith

Make art accessible to everyone.

Public Art in Private Development

Incorporation of publicly accessible art on private projects should be supported and encouraged. The City of San Diego Commission for Arts and Culture may serve as source of information for means and methods of incorporating art into specific projects and for the selection of specific artists.



"Urban Tree's"

Photo Courtesy Dale Frost, Port of San Diego

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Reach Recommendations

Specific Reach Recommendations

Executive Summary

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

Introduction

Within the City of San Diego, the Plan identifies six reaches. Traditionally distinguished by hydrologic characteristics, these reaches are based upon distinct topographic condition, spatial experience and/or land use. Following the flow of water from the hills to the ocean, the reaches are the Plateau, the Gorge, Upper Mission Valley, the Confluence, Lower Mission Valley, and the Estuary. Specific actions needed to create the River Park are identified in each reach.

Principles

The pages that follow outline intent, condition and recommendations for each reach. The intent describes the Plan's specific goals for the reach, followed by an assessment of it's current conditions. The recommendations outline the broad strokes of the Plan for the reach. Where appropriate, key sites are identified where special opportunities exist or conditions and location define the site as a critical component of the River Park. This 3-part overview is followed by a map of the reach and a table of specific action items and their proposed implementation.

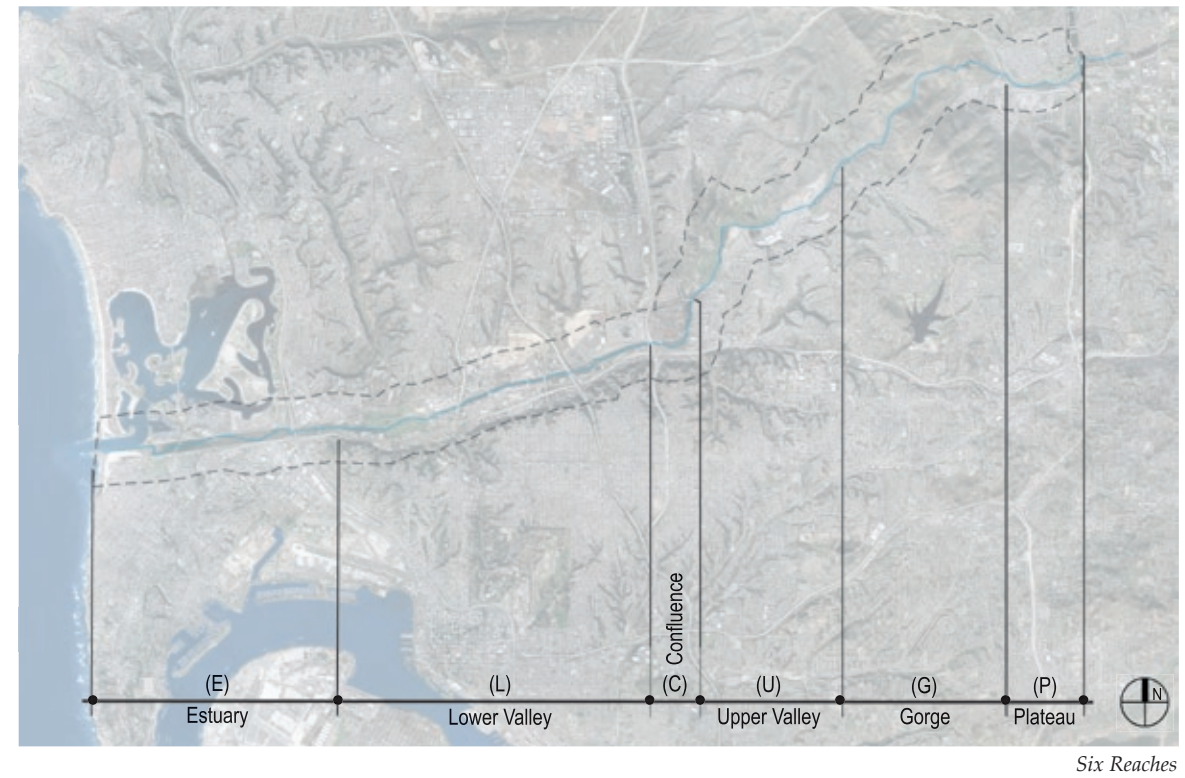
The benefits to hydrology, ecology, recreation and education of each action are described in detail in the matrices located in the appendices

Recommendations

Design Guidelines

Implementation

Appendices



Six Reaches



Estuary



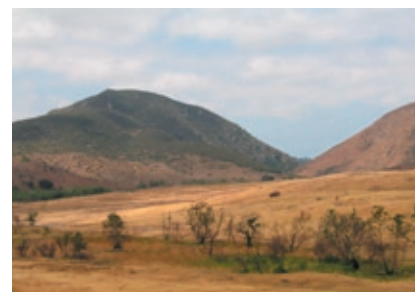
Lower Valley



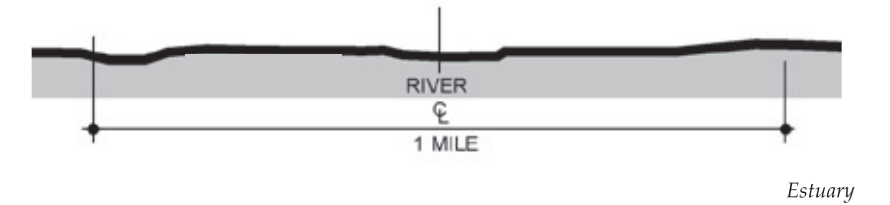
Upper Valley



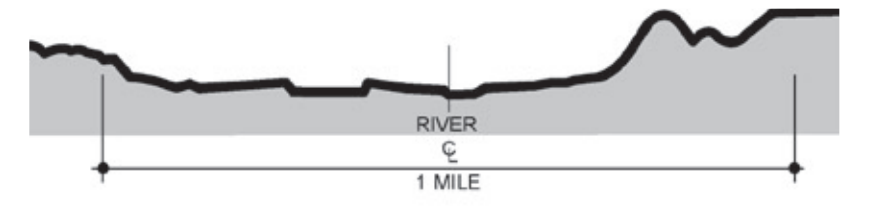
Gorge



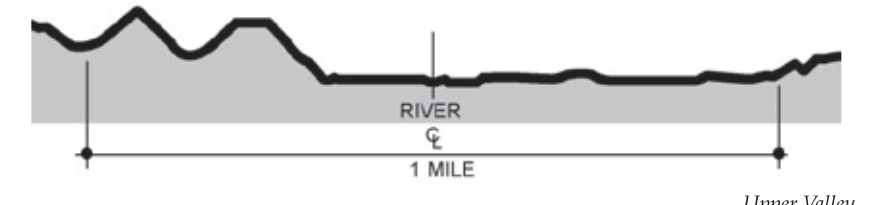
Plateau



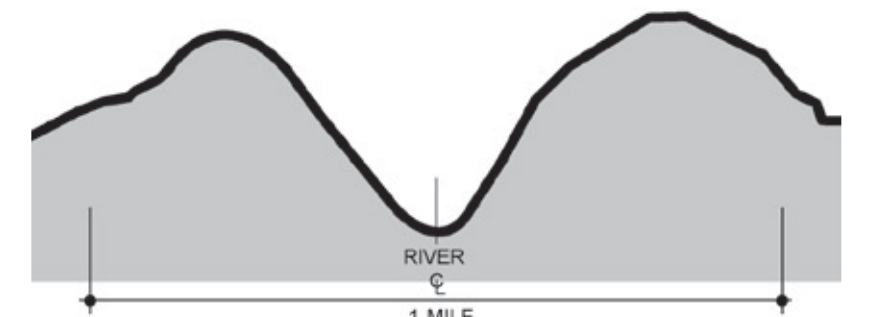
Estuary



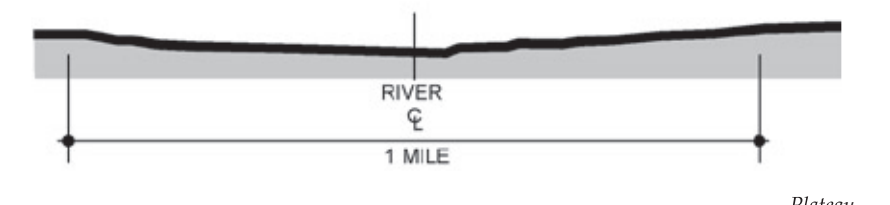
Lower Valley



Upper Valley



Gorge



Plateau

Typical Cross Sections of Reaches

Estuary

Intent: Extending from Mission Valley Preserve to the Pacific Ocean, the Estuary reach offers an astonishing sense of openness, and a sense of release as one moves past the Linda Vista Terrace topped by the University of San Diego and Presidio Park. Only here and at the Plateau above Mission Trails Regional Park does the San Diego River Park have the potential to capitalize on long, picturesque views and the experience of vast, open space. In the Estuary reach, the San Diego River Park must strive to build upon this experience, and to protect and expand the unique wildlife habitats of the estuarine ecosystem. The San Diego River Park should also seek to educate visitors about the sensitivity of these ecosystems.

Condition: 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



The estuary supports rich avian and aquatic species

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 boundlessness once expressed by the estuary and shoreline 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 parks and open spaces including Mission Bay Park, Dog Beach, Robb Field, Southern Wildlife Preserve, Famosa Slough and Mission Valley Preserve.



Diverse estuarine vegetation

Recommendations:

- Support the goals of Mission Bay Park, Dog Beach, Robb Field, Famosa Slough, Southern Wildlife Preserve and Mission Valley Preserve
- Create a continuous multi-use trail
- Improve connections to other open spaces
- Establish a minimum open space corridor equal to present dimensions of dike.
- Create passive component at Mission Bay Park
- Study potential to improve ecologic and possibly hydrologic connection with Mission Bay Park

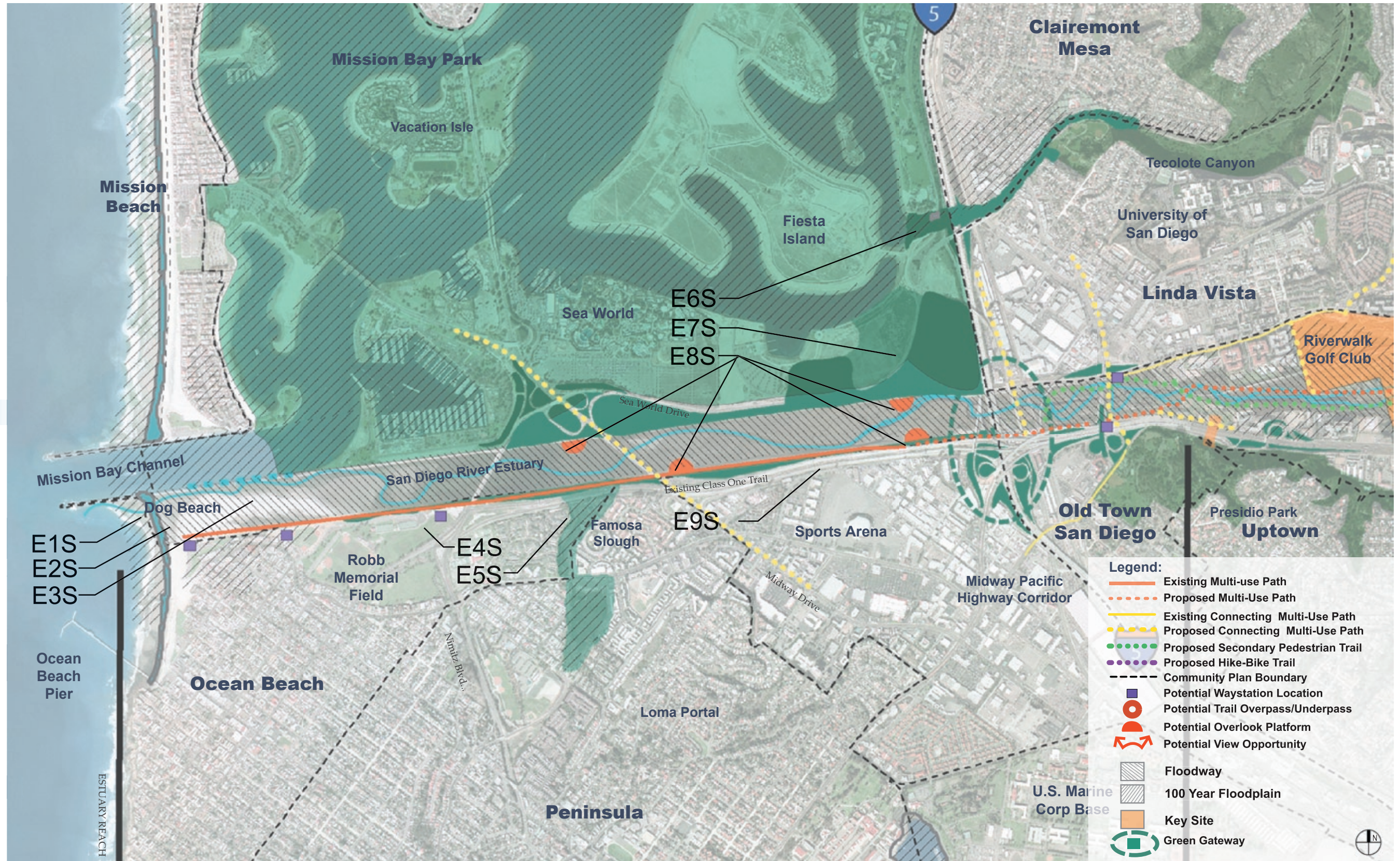
The Estuary Reach of the San Diego River Park must balance two primary needs: human interaction at an educational & experiential level and the protection and maintenance of sensitive habitat. Careful design can accommodate both elements in a manner that benefits the system as a whole. People must be both engaged and isolated within the estuary reach. Greater understanding of the ecosystem through interpretation will instill a sense of ownership and care for this delicate part of the river. A defined trail system and viewing platforms are part of this effort.

A collaborative planning process with Mission Bay Park should also seek to expand the physical area of the estuary, in order to further diversify the wildlife habitat. This potential may exist at Famosa Slough and Mission Bay. 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. Planning efforts should also acknowledge that in the Estuary Reach, the entire corridor, 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 Park should orient itself toward the river, and buffer the river edge with native upland vegetation.

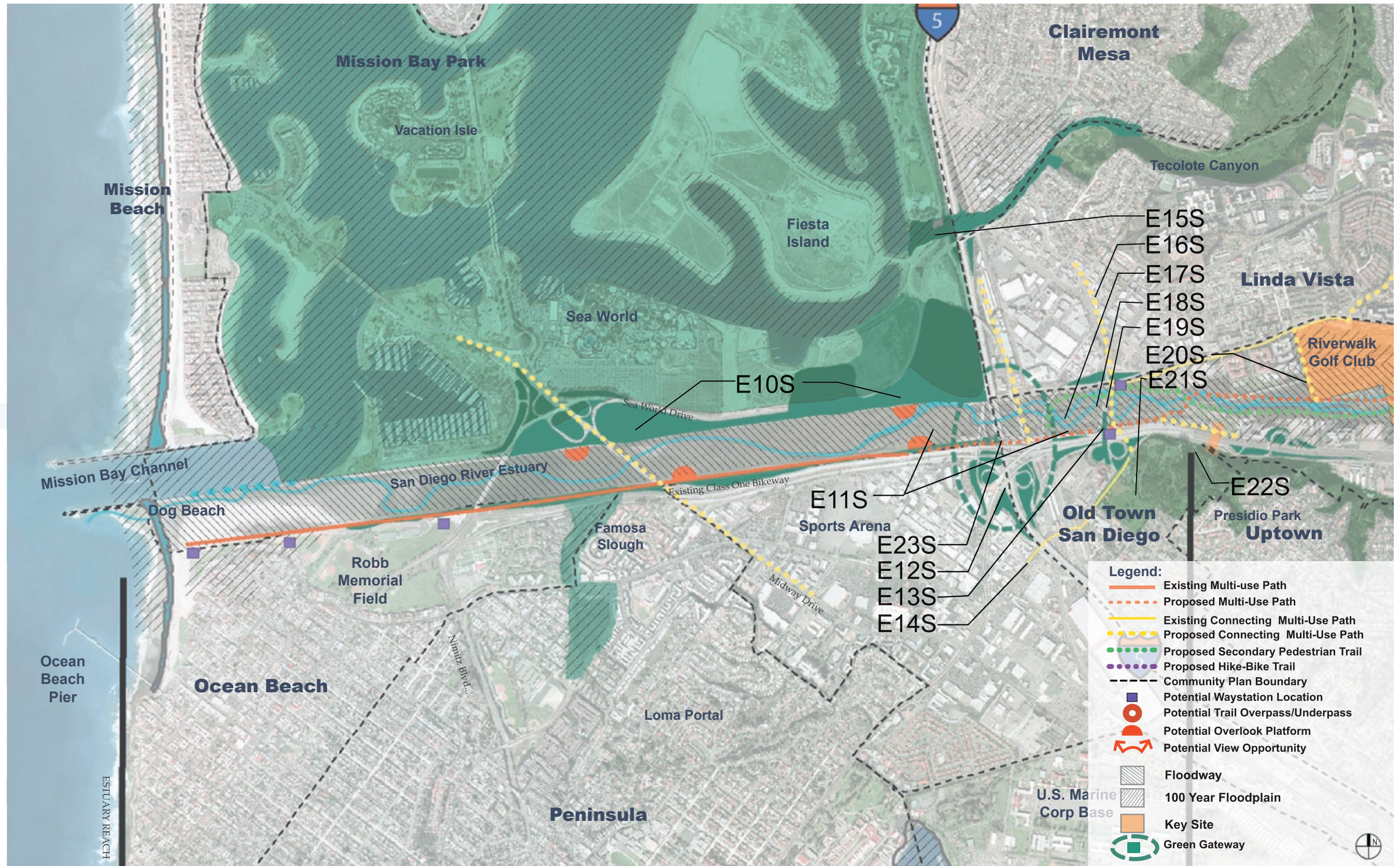


Estuary Reach Section

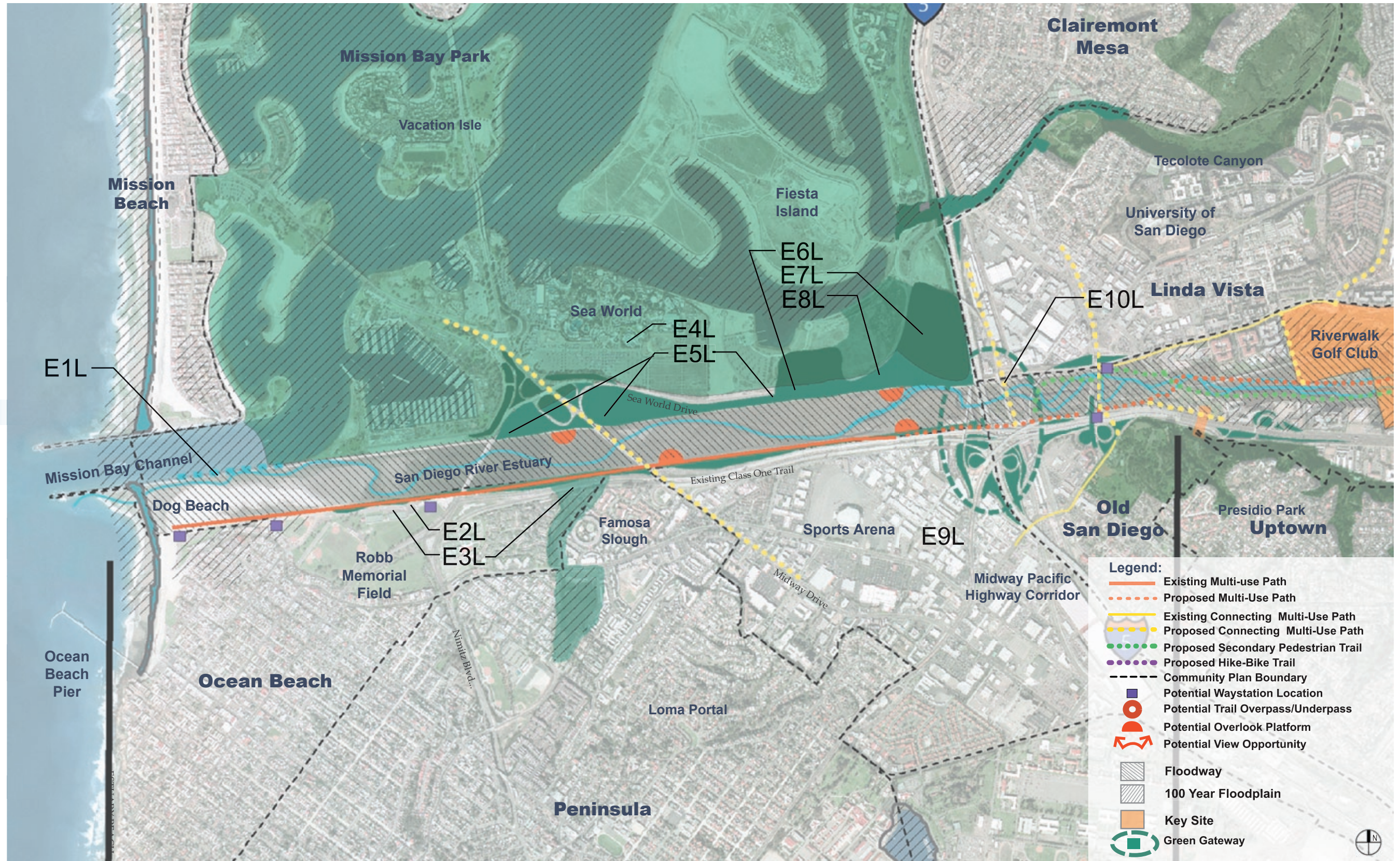


KEYNOTE	RECOMMENDATION	IMPLEMENTATION	BENEFITS				
			HYDROLOGY	ECOLOGY	RECREATION	EDUCATION	
Short Term							
E1S	Create San Diego River Park Trail trail head and waystation at Dog Beach.	Collaborate with appropriate community and special interest groups to install signage, interpretive kiosks and 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.	●	●	●		Executive Summary
E2S	Maintain Dog Beach as an off-leash recreational destination and community asset. Enhance existing Dog Beach signage to include information about the San Diego River Park.	Support appropriate community and special interest groups to manage Dog Beach and integrate it with the San Diego River Park.			●		
E3S	Coordinate with Mission Bay Park to support marsh restoration that is underway.	Collaborate with appropriate community groups to install signage in vicinity to provide information and create awareness about estuary function and wildlife habitat.		●		●	Introduction
E4S	Create San Diego River Park Trail head and waystation and historic and natural interpretation zone at Robb Field.	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.			●	●	Principles
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.	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.	●	●	●	●	
E6S	Coordinate with Mission Bay Master Plan to consider modifications to Mission Bay and Tecolote Treatment Wetlands Plan.	Collaborate with appropriate community and special interest groups to extend feasibility study to explore the potential to modify current plan to consider effect of improving the 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.	●	●			Recommendations
E7S	Develop temporary multi-use programs for under-utilized lands that are proposed for other future uses.	Collaborate with appropriate community and special interest groups to explore opportunities to fully utilize land for ecologic, educational and recreational uses.		●	●		
E8S	Create estuary overlook platforms along the San Diego River Park Trail at estuary surface level.	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.			●	●	Design Guidelines
E9S	Explore potential to create a new park with a recreational connection to the river and neighborhood as the Sports Arena redevelops. If possible, expand river into this area similar to Famosa Slough.	Collaborate with North Bay Redevelopment Plan to integrate its recommendations 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 with the River Park by creating trail connections, installing interpretive kiosks, and potentially a Community Park.		●	●		Implementation

Appendices



KEYNOTE RECOMMENDATION		IMPLEMENTATION STRATEGY	BENEFITS				
			HYDROLOGY	ECOLOGY	RECREATION	EDUCATION	
Short Term							
E10S	Mission Bay Park interface zone.	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.			●	●	Executive Summary
E11S	Continue San Diego River Park multi-use path east of the I-5 and create connections from Friars Road to Pacific Highway.	Coordinate with community plans, North Bay Redevelopment Plan and San Diego Bicycle Master Plan.			●		
E12S	Establish Green Gateway at interchange of I-5 / I-8.	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.		●			
E13S	Create a waystation, trail connection and naturalized open space between Presidio Park and Old Town San Diego and the river corridor.	Prepare detailed design study for locating waystations, trail connections, bicycle staging areas and explore the creation of shuttle links from the trolley at Old Town San Diego/Linda Vista to Ocean Beach, Sea World and Mission Beach. Initiate dialogue with Transportation Department to create shuttle links from trolley at Old Town/ Linda Vista and Ocean Beach/ Sea World/ Mission Beach.		●	●	●	Introduction
E14S	Create recreational trail connection between the San Diego River Park and the San Diego Bay.	Implement Class 2 and Class 3 Bikeways along Rosecrans Street and Taylor Streets as proposed by the Plan Report City of San Diego Bicycle Master Plan			●		Principles
E15S	Improve trail and open space connection between Tecolote Canyon and Mission Bay.	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 recommended Class I Bike Path adjacent to railroad right-of-way.	●	●	●		
E16S	Create connection between the San Diego River Park and adjacent neighborhoods to the north, providing trail connection, way station and study possible interpretive opportunities.	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.			●		Recommendations
E17S	Broaden river channel, meander, and potentially braiding of river through Mission Valley Preserve.	Collaborate with appropriate agencies and community/special interest groups to prepare specific plans and identify funding sources to modify river channel.	●	●	●	●	Design Guidelines
E18S	Connect Morena Boulevard Bikeway and proposed new segment of San Diego River Park trail.	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 trail is down in the river valley.			●		
E19S	Support and build upon access and interpretation zone at Mission Valley Preserve.	As San Diego River Park Trail is implemented, develop trail head with signage, interpretive kiosks and furnishings.			●	●	
E20S	Create short term bike trail alignments through Riverwalk Golf Club in trolley right-of-way.	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.			●		Implementation
E21S	Support efforts to create a Presidio Park Master Plan.	Coordinate with appropriate agencies, community and special interest groups to begin discussions about initiating a master planning effort and to identify potential funding sources.			●	●	Appendices
E22S	Create a Presidio Park entry monument on Taylor Street that incorporates its historic connection with the river.	Coordinate with appropriate agencies and community groups to initiate study to design and locate entry signage on north side of Presidio Park.				●	
E23S	Remove 1.5 acre area of cobble fill on south side of river under I-5.	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.	●	●			



KEYNOTE	RECOMMENDATION	IMPLEMENTATION	BENEFITS				
			HYDROLOGY	ECOLOGY	RECREATION	EDUCATION	
Long Term							
E1L	Explore potential to remove lowered portion of jetty wall. Although not consistent with Mission Bay Master Plan, removal of this barrier has the potential to better integrate the hydrologic function of bay and river.	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. Potential to develop study through a joint science program related to the San Diego River.	●	●		●	Executive Summary
E2L	As Robb Field is improved in the future, create a landscape that relates to estuary and river edge.	Coordinate with appropriate agencies and community/special interest group plans for future improvements.		●			
E3L	Explore potential to realign and terrace south river edge and expand estuary. These areas serve as refuge for wildlife and as seed sources for native re-vegetation in the event of major floods	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.	●	●	●		Introduction
E4L	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.	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.		●	●		
E5L	Explore potential to realign and terrace north river edge and expand estuary.	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.	●	●	●		Principles
E6L	If results of feasibility study proposed in short term recommendations are positive, implement improvements to estuary between Mission Bay and the San Diego River.	Collaborate with appropriate agencies and community/special interest groups to prepare specific plan and identify funding sources to improve estuarine environment.	●	●	●	●	
E7L	Investigate potential for locating a River and Estuary Interpretive Center that supports the Mission Bay Park Master Plan interpretive program.	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.		●		●	Recommendations
E8L	Collaborate with Mission Bay and Land Fill Study to explore the potential to expand estuary.	Collaborate with appropriate agencies and community/special interest groups to initiate feasibility study to create an estuarine link between Mission Bay and the San Diego River. Extensive study and modeling will be required to fully understand the impact of linking the River and the Bay on flows and water quality. Engage the Mission Bay Landfill Study in the process. Could be explored through a joint science coalition.	●	●		●	Design Guidelines
E9L	Explore potential to create a greenway connection with San Diego Bay.	Collaborate with North Bay Redevelopment as it evolves.			●	●	
E10L	Create major San Diego River Park access node at Linda Vista and integrate with potential Green Gateway at I-5 and Friars Road.	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.		●	●		Implementation

Appendices

Lower Valley

Executive Summary

Intent: The Lower Valley extends from the eastern edge of Mission Valley Preserve to Interstate 15. The valley has developed intensely since WWII, and is arguably the most altered section of the river. It is also the most complex.

Introduction

The Lower Valley segment of the San Diego River Park can serve many roles: a focal point for new development and re-development, a link between adjacent uses (stadium, hotels, shopping, library, food and drink) and a common space for neighboring communities. The San Diego River Park may take on its most urban character along this section, with plazas or amphitheaters reaching out from development at the edge of the river.

Principles

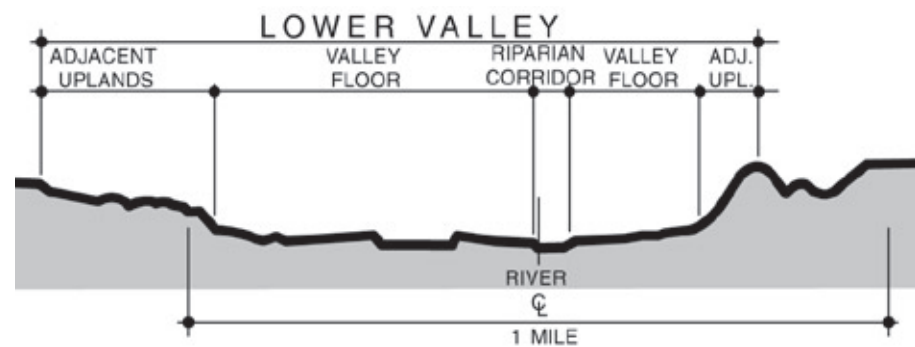
For the San Diego River Park to succeed, however, it is essential that development reorient itself towards the river to provide a synergy with the river corridor, while providing “breathing room” for wildlife habitat, trails, natural open space, and public spaces. By re-vegetating adjacent areas and rights-of-way with native species, the infrastructure that has disconnected the side canyons may serve as the means to reestablish wildlife connections to upland open space.

Recommendations

Design Guidelines

Implementation

Appendices



Lower Valley Section

Condition: The Lower Valley is heavily suburbanized; extensive paving in the form of parking lots and roadways, massive infrastructure projects and relatively low density development surround this reach. The river’s presence is further marginalized by channelization and ponding. Simple lack of space presents a severe hydrological constraint throughout the Lower Valley, and exotic vegetation negatively impacts the reach’s native ecosystems.

The communities of the Lower Valley and above the valley walls are particularly deficient in active recreation space available and the San Diego River Park should play a role in addressing this need. Little undeveloped space or public land exists within this reach, offering limited opportunities for the river to meander, for wildlife habitat to expand, or for the creation of parks and trails.

Recommendations:

- Create a continuous trail.
- Acquire land and/or establish open space easements.
- Establish appropriate open space corridor width
- Pursue opportunities to acquire a portion of Riverwalk Golf Club if it redevelops.
- Create a major park and open space adjacent to the river and the Qualcomm Stadium site.
- Create interpretive opportunities at pedestrian bridge crossings where the river can be seen and experienced.
- Restore river at former water hyacinth water treatment plant and provide interpretive information regarding previous use and river rehabilitation processes.
- Explore potential sites for a Heritage Farm, a historic agriculture interpretive site and community garden; create connections from Farm to surrounding area.



Lower Valley looking northwest

The heavily suburbanized condition of this reach should be seen less as a deterrent for future park scenarios than as a fulcrum upon which innovative park solutions can be leveraged. 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 corridor, 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. Open space easements and property acquisition are necessary for the San Diego River Park to become a success. The future redevelopment of Riverwalk Golf Club and Qualcomm Stadium are two opportunities for creating parks and open space.

The Valley should be considered as a whole, and consistent recommendations regarding new development, streets and landscape should be established. These guidelines should set 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 corridor width. Where little space is available, these corridors should aim to maintain the most adaptable species. Where greater corridor width can be achieved, the San Diego River Park should seek to accommodate more sensitive species that have greater habitat requirements.



Lower Valley from University of San Diego looking southeast

Key Sites:

Riverwalk Golf Club Redevelopment Site

The Levi-Cushman Specific Plan for the Riverwalk Golf Club 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 Draft 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 Plan, increasing the channel width, creating meander and separating the stream flow from any existing ponds.

The San Diego River Park Trail 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 is anticipated to redevelop in the future, there is an opportunity to establish a neighborhood-scale park here. As the site redevelopment plans evolve, 10-15 acres of public space 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 as will Sefton Park little league field. Connection to these facilities could be strengthened with connected open space and a trail head near the YMCA. While the previous 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 community park acreage unlikely.



The river is unprotected from runoff through the golf course



View of Presidio from Riverwalk Golf Club

Potential Neighborhood Park Elements

- 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

Key Points

- Critical location for continuity of the San Diego River Park Trail and for meeting basic park and recreation needs in Mission Valley.
- Acquisition of 10-15 acres is recommended to establish a neighborhood park.
- Existing Specific Plan proposes extensive development, and further ponding and channelization of the river.
- In the short term, the multi-use path should be developed following the trolley alignment, within the trolley right-of way. In the long term, the multi-use path should be developed adjacent to the Open Space Corridor.
- Establish an appropriate open space and habitat corridor width. The open space and habitat corridor should provide adequate width to re-contour the river channel to allow for increased river length and meander and to expand native riparian habitat.



Riverwalk Golf Club



Multi-use path at Riverwalk

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Qualcomm Stadium

The City of San Diego and the San Diego Chargers have been in negotiation regarding the future of Qualcomm Stadium, including the potential to construct a new stadium on the site. The potential redevelopment of the stadium also creates the opportunity for a river-oriented approach that creates significant new open space and park land on this site. Such a park should be a minimum of 20 to 40 acres. The site 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 and the city itself. Careful consideration should be given to the intrinsic value of this place as a public green space. As a regionally scaled, river-oriented park providing naturalized open space adjacent to the river as well as recreation facilities, it can act as a complement to Mission Bay Park, Balboa Park and Mission Trails Regional Park.

Key Points

- Land is currently owned by City of San Diego.
- Critical location for meeting basic park and recreation needs in Mission Valley.
- Critical location for creating continuity in San Diego River Park and San Diego River Park Trail.
- Potential for site to redevelop for more intensive use makes time critical to taking action.
- Develop community scale park with an extensive naturalized component adjacent to the river corridor; this park should have an extensive naturalized component. Locate passive recreation on north and south sides of trolley alignment, active recreation on current stadium site.
- Provide multi-use and pedestrian trails adjacent to river corridor.
- As the site specific development plan is prepared, establish an appropriate open space and habitat corridor that achieves wildlife movement and habitat objectives, varying in width and extending to the trolley alignment. The open space and habitat corridor should provide adequate width to re-contour the river channel to allow for increased river length and meander and to expand native riparian habitat.
- Extend open space corridor between proposed stadium location and I-15 to create new habitat and trail connection to Murphy Canyon.
- The "Mission City" bridge project was proposed by the City in 2002, but was not approved. This project may be reconsidered. In order to insure the goals of the San Diego River Park, it is important to coordinate with any possible bridge proposals.

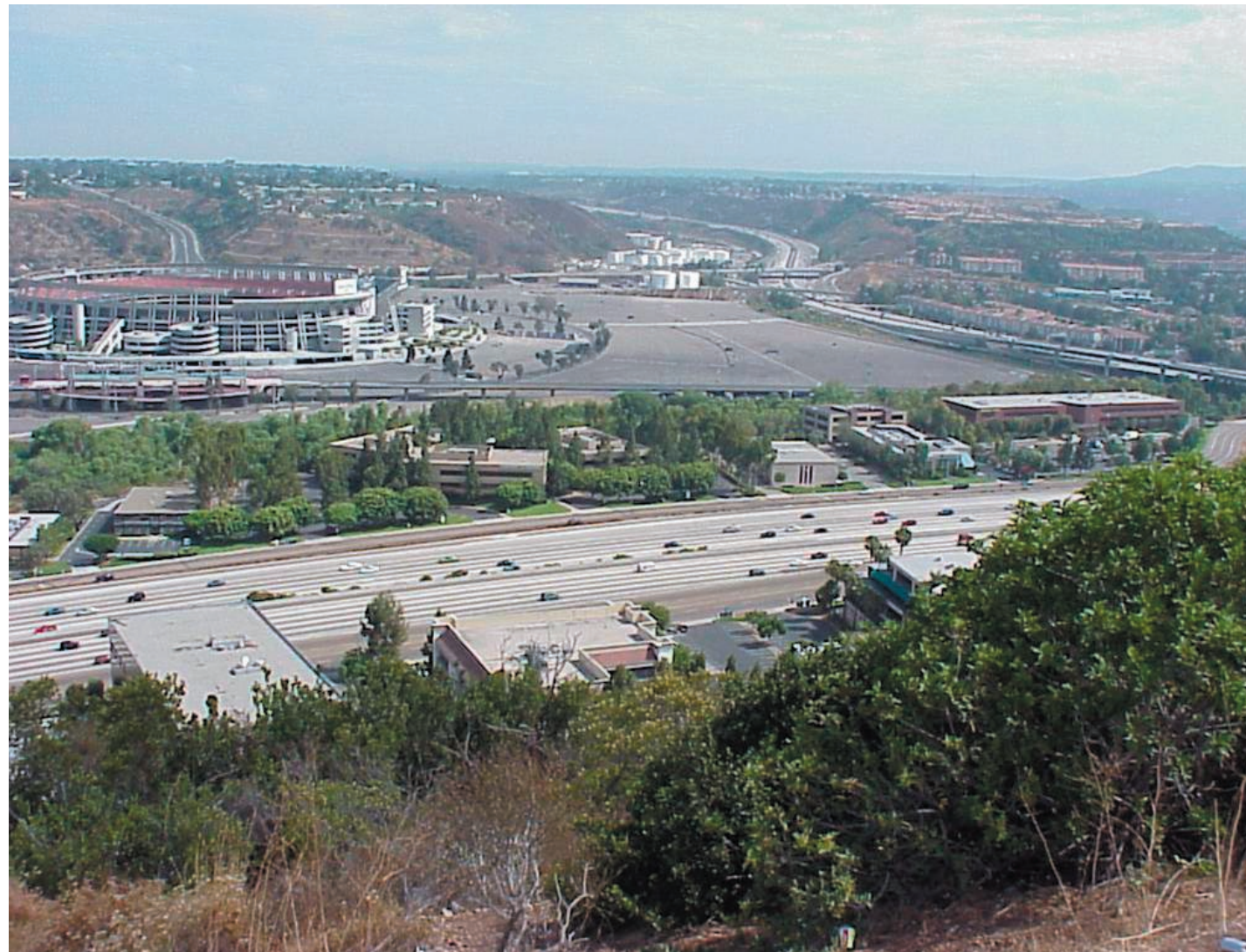
Potential Program Elements

- Natural riparian and upland habitat areas
- Ball fields
- Picnic facilities
- Amphitheater
- Boardwalk/overlooks for fishing
- Boardwalk/overlooks for bird watching
- Play area with "natural" character (wood, boulders, sand)
- Pedestrian linkage: park to river and Murray Canyon
- Focus park toward river

In the event of future redevelopment of the Qualcomm Stadium site, the opportunity would exist for a river-oriented approach that creates significant new open space and parkland on site.

Alternative Scenarios

Four alternative scenarios are explored here to reveal a range of potential approaches to increase open space on the site while accommodating the existing stadium, a new stadium, or no stadium at all. In all scenarios, the land between the trolley line and the river should become naturalized open space, with a wider river channel and expanded riparian habitat; green connections should be created through the site linking Murphy Canyon, Mission Village Drive to the river and reaching toward Ruffin Canyon; and the existing pavement be replaced with a porous pavement that reduces surface runoff and improves groundwater recharge and natural filtration to clean urban runoff before it reaches the river. These are prepared as conceptual ideas only, and are not based upon specific economic and programmatic goals.



Qualcomm Stadium Site

Stadium replaced with a Mission Valley Central Park

This site is the single largest publicly owned land in the valley. It is the only opportunity to create park and open space that is in scale with the City as a whole and the river valley itself. A new regionally oriented park in this location would become a major destination between Mission Bay Park and Mission Trails Regional Park and reestablish a sense of the valley floor as a place. This regional facility would serve many roles, each emphasized by its scale. This 160 acre park would create significant new riparian and upland habitats that link to adjacent canyons, eliminate a significant source of urban runoff and provide adequate space for natural filtration of remaining runoff before it reaches the river, provide adequate land to meet City park, open space and recreation goals for Mission Valley; and provide adequate space to reveal the many roles the valley has played through history, from Kumeyaay villages through Spanish settlement and early American agriculture. As another regionally scaled focus, the Mission Valley Central Park would be a logical location to create a major access point to the river, with a visitor and interpretation center and other community and regionally oriented recreational facilities.



Stadium replaced with a Mission Valley Central Park

Stadium replaced with Park and Mixed Use Development

Removing the stadium creates the opportunity for substantial increase in park and open space in Mission Valley. By allowing a limited extent of mixed use development, the City of San Diego will appreciate economic return from this valuable site. The development should emphasize a river orientation, and serve as a model for sensitive and sustainable design, setting the standard for other redevelopment in the valley. A significant new park of 80 acres is created, allowing for community and regionally oriented recreational facilities and substantial natural open space. This natural open space system can provide for riparian habitat along the river and upland habitat that would extend toward Murphy Canyon, Mission Valley Drive and Ruffin Canyon, thereby giving a natural habitat structure to the park.



Stadium replaced with Park and Mixed Use Development

Existing Stadium Improved

If the existing stadium were to remain, the site can be substantially improved by creating mixed use development along Friars Road that incorporates structured parking, thus reducing the need for existing parking along the river. The development is set within a native upland landscape to create a visual and textural extension of the river corridor. An active park is created in the southwest corner of the site, north of the trolley alignment, set within an upland native landscape. Natural "fingers" extend from the river through the site to Friars Road. These fingers serve as access corridors and storm water filtration channels cleansing runoff before it reaches the river.



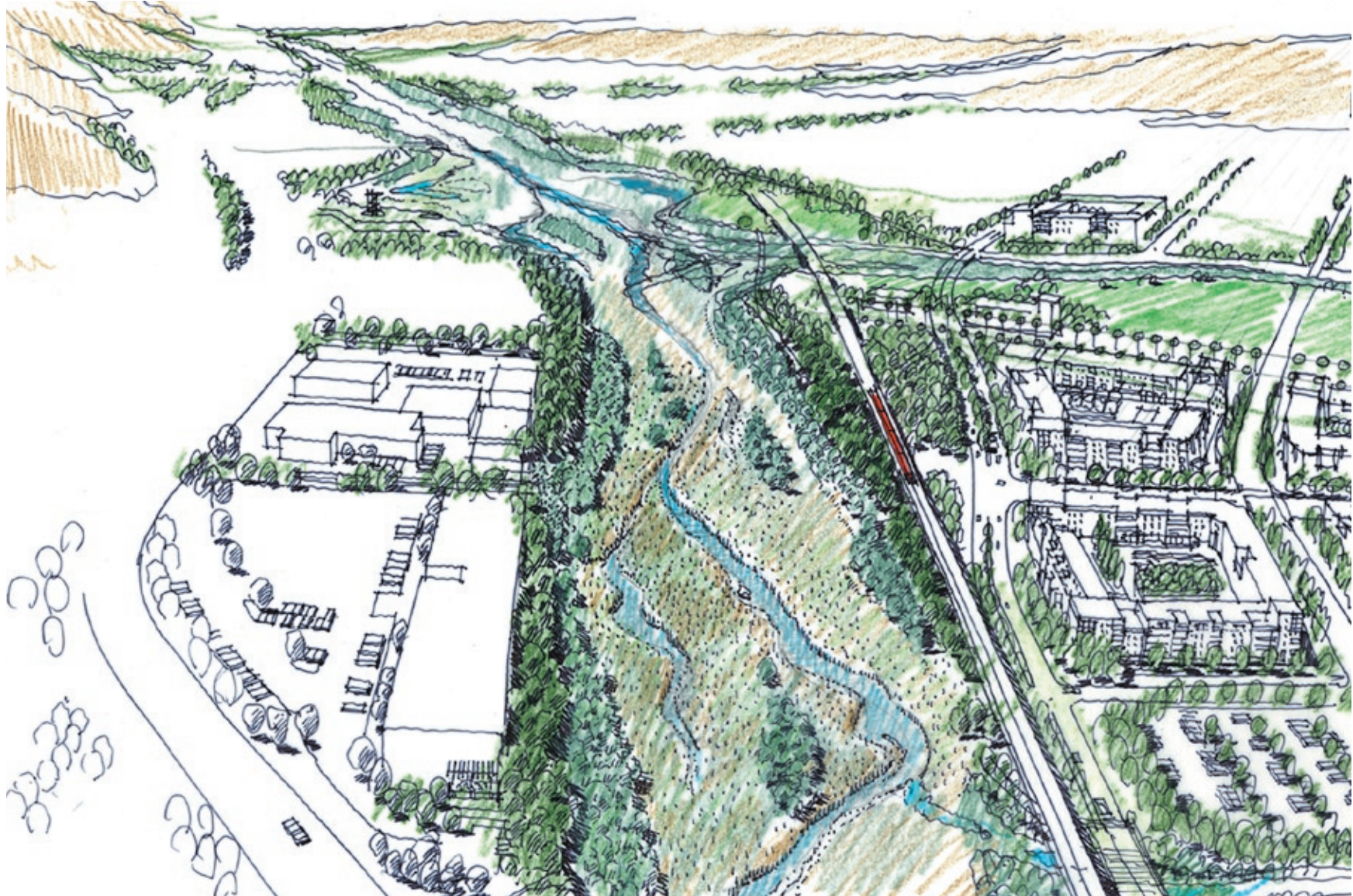
Existing Stadium Improved

New Stadium

This scenario would recommend a new stadium relocated on-site that would support a consolidation of open space. Thereby increasing its function as habitat and its visual continuity and impact. Natural "fingers" extend from the river to link Murphy Canyon and Mission Village Drive with the river and serve as stormwater filtration channels. An active park is created on the site of the existing stadium, linked to the river by the naturalized finger. Green corridors should extend from the river to all proposed new development, creating a sense that the development is nested within the river environment.



New Stadium



San Diego River and Qualcomm Stadium Conceptual Site Redevelopment

Murray Creek Enhancement

Murray Creek currently passes under Friars Road just east of its intersection with SR-163. It is channelized, lined with rip rap (large rocks of a fairly uniform size), then enters four large culverts passing under the alignment of the proposed extension of Hazard Center Drive and drains into the San Diego River.

Enhancing Murray Creek will offer the opportunity to celebrate the confluence of tributary and river, improve water quality flowing into the river and expand wildlife habitat. The Murray Creek channel should be widened where feasible from a flood control standpoint, and the rip rap removed or visually softened with plantings of native vegetation species. Two alternative approaches should be considered, both of which involve removal of the culverts. One alternative that should be explored fully is to consider not extending Hazard Center Drive, and creating a cul-de-sac and small parking area that can serve as an access point to the San Diego River Park and Trail. The other alternative is to extend Hazard Center Drive, and to replace culverts with a bridge structure that is adequate to allow growth of riparian vegetation beneath it, thus increasing the potential for wildlife movement to the river, with adequate space for a spur trail connecting nearby residences and retail development to the San Diego River Trail. The Murray Creek area can support wetland and riparian woodland vegetation, transitioning to Diegan Sage Scrub at higher elevations adjacent to SR-163 and surrounding development. Interpretive signage at the trail and arrival points can increase awareness of the canyon-valley physiography and the presence of side canyon streams. Signage on the bridge should identify Murray Creek. Plantings of trees along SR-163 will buffer the Creek from views to traffic and link it with the "Green Gateway" proposed along SR-163 as it crosses the river valley.



Murray Creek along SR-163

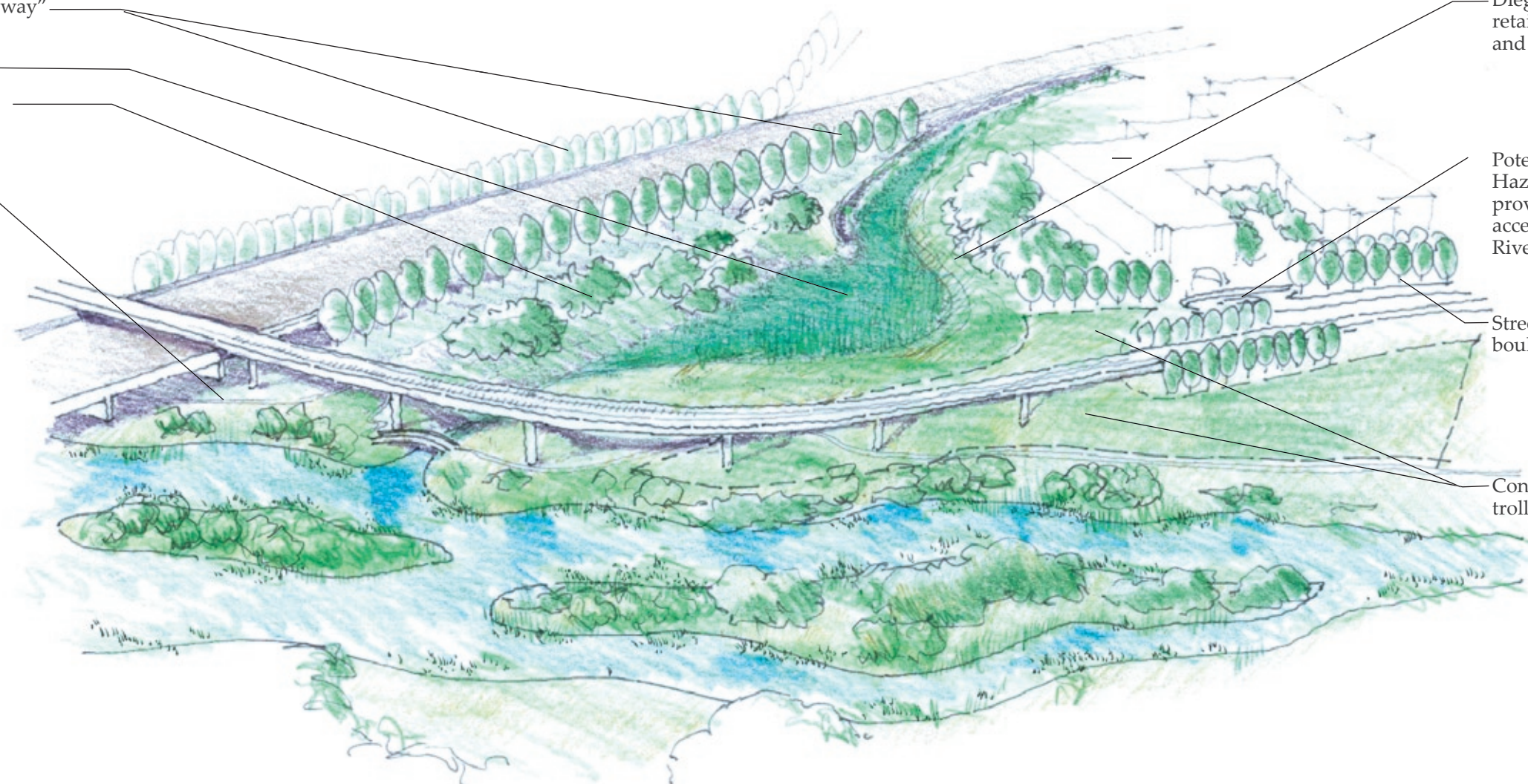


Culverts under alignment of Hazard Center Drive future extension



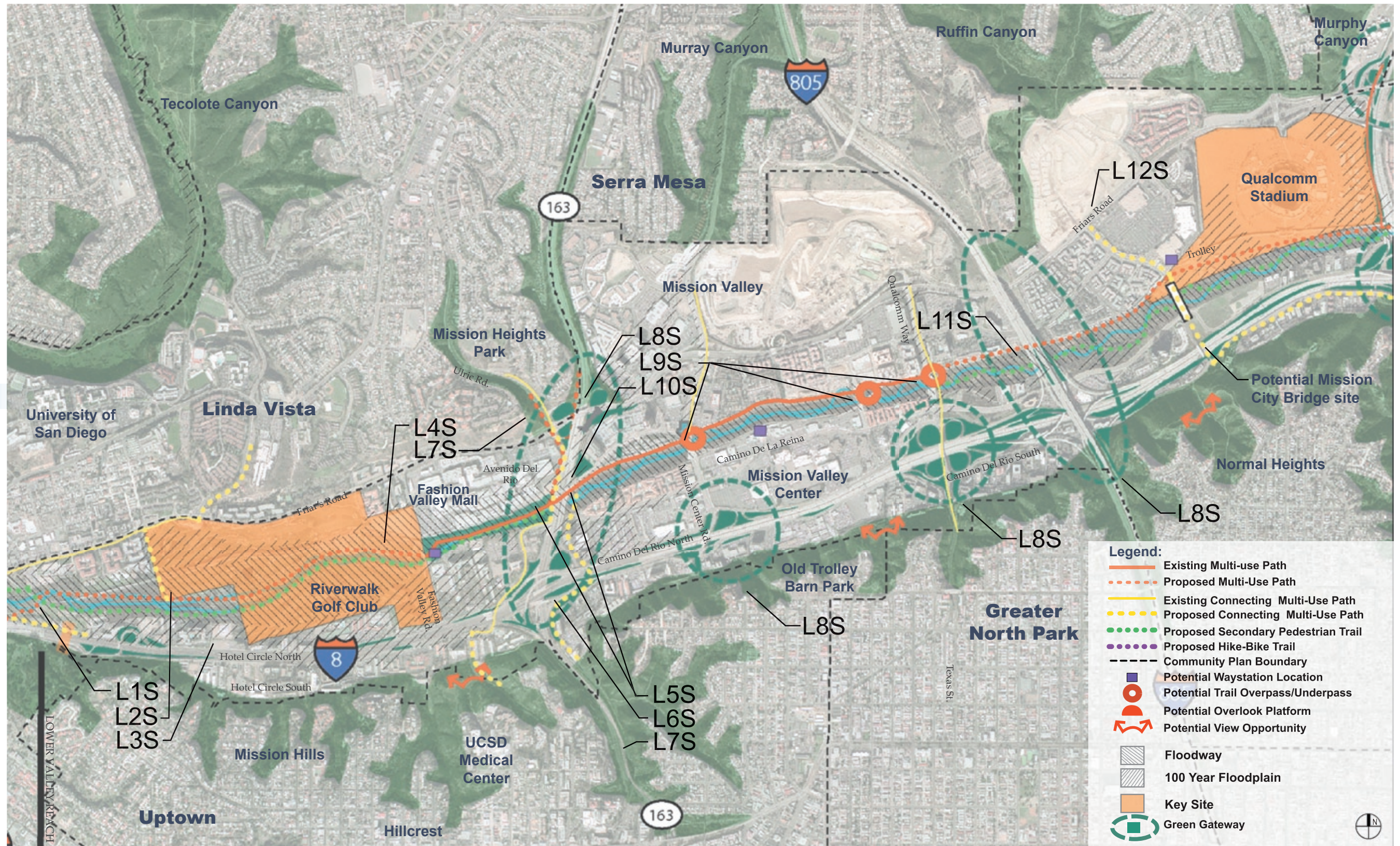
Murray Creek outfalls

SR-163 "Green Gateway"
 Buffer Trees
 Wetland
 Riparian Woodland
 River Trail

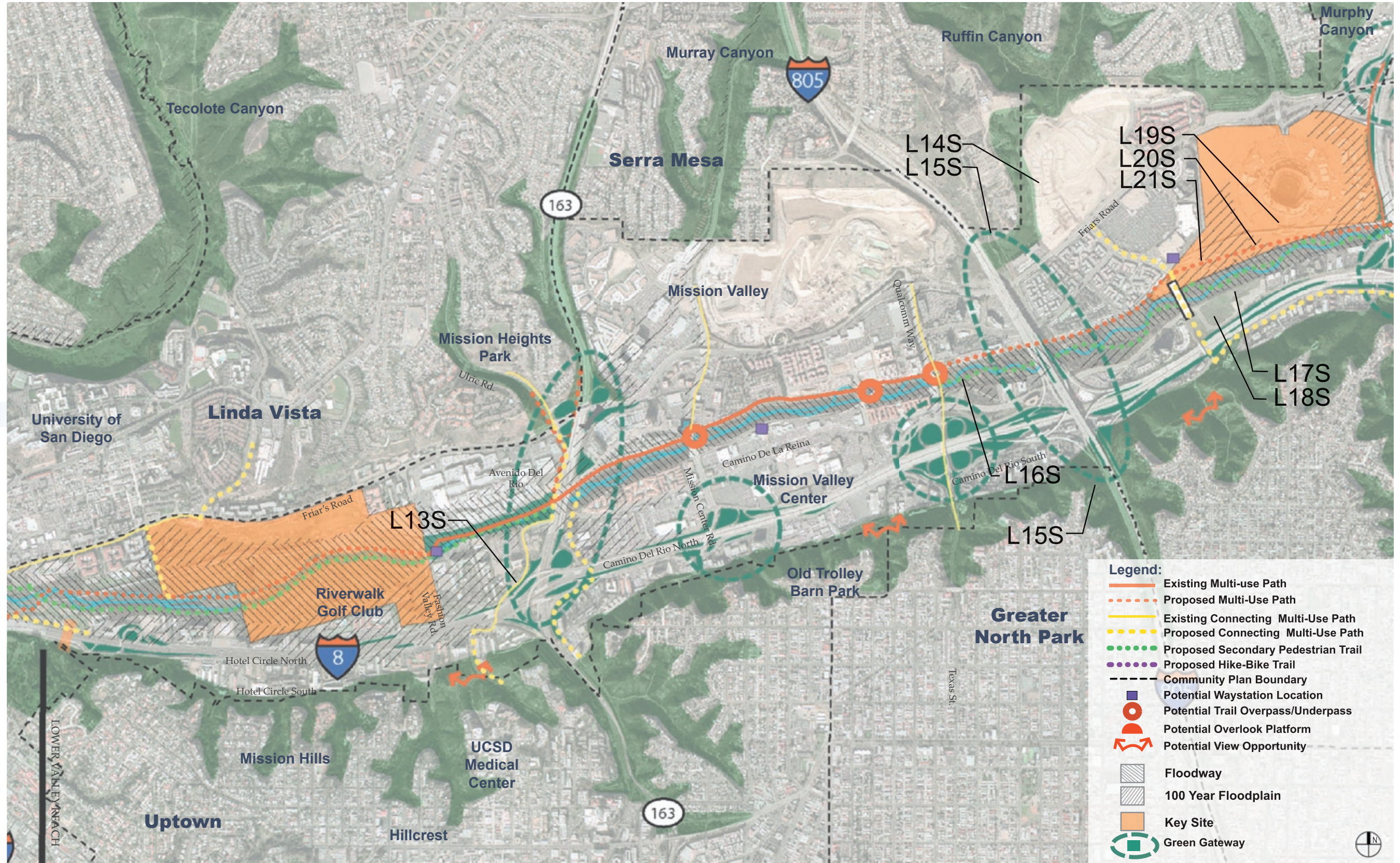


Diegan Sage Scrub along retained creek edge and drop-off
 Potential cul-de-sac on Hazard Center Drive that provides parking and access to the San Diego River Park
 Street median and boulevard trees
 Connect 'Parks' under trolley guideway

Conceptual Daylighting of Murray



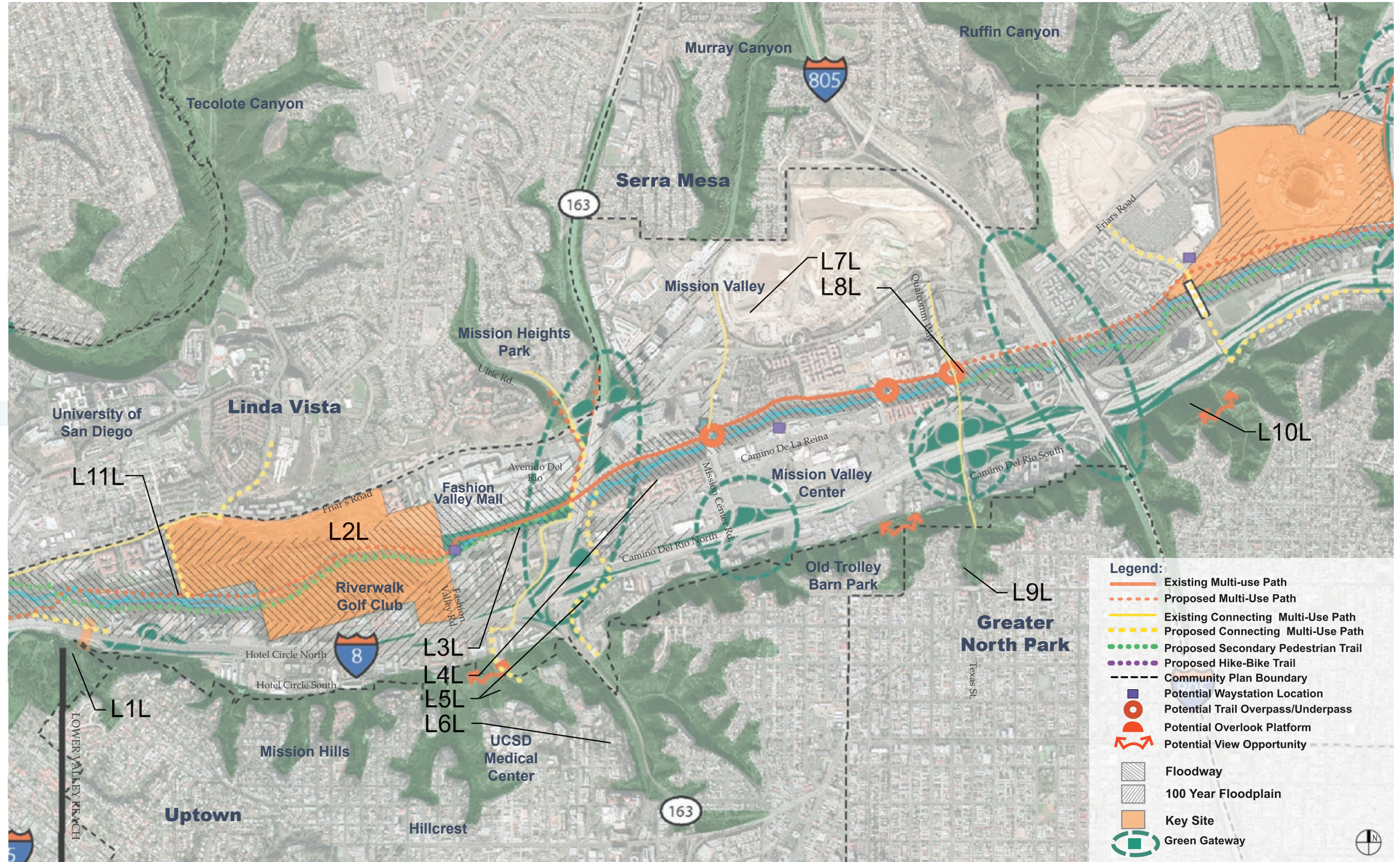
KEYNOTE	RECOMMENDATION	IMPLEMENTATION	BENEFITS				
			HYDROLOGY	ECOLOGY	RECREATION	EDUCATION	
Short Term							
L1S	Aggregate undeveloped land of YMCA, Sefton Fields, and Metropolitan Transit Development Board as open space to broaden river channel and expand habitat.	Coordinate appropriate agencies 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.	●	●	●	●	Executive Summary
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. Refer to the Lower Valley Key Sites section for additional detail.	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.		●	●	●	
L3S	Explore potential to acquire under-developed land site. Vacant parcel is an opportunity to create a new river oriented community amenity.	Engage land owner to discuss potential for land acquisition, easement or to develop a river oriented amenity with a multi-use path connection. Current use is parking / storage. Investigate potential archeological value of the site.			●	●	Principles
L4S	Create historic interpretation of Kosoy Rancheria and agriculture adjacent to trail.	Engage land owner to discuss potential for land acquisition and/or easement for trail connection and interpretive waystation. Integrate with trail implementation project.			●	●	
L5S	Create trail under SR-163 to connect existing Class I Bike Paths to the east and west of SR-163 and improve river channel width and edge condition.	Implement Class I Bike Path below Highway 163 north of the river as proposed by the City of San Diego Bicycle Master Plan and incorporate grading and natural revegetation with construction.	●	●	●		Recommendations
L6S	Establish Green Gateway along SR-163 by introducing native landscapes along roadways.	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.		●			
L7S	Create open space and trail connection to upland communities along Ulric Street.	Coordinate with San Diego Bicycle Master Plan and Mission Valley Community Plan to identify specific route alignment.		●	●		Design Guidelines
L8S	Establish Green Gateway at interchanges throughout the valley by introducing native vegetation along roadways.	Initiate dialogue with Caltrans and appropriate community groups to explore means of changing right-of-way plant palette.		●			
L9S	Explore potential to connect FSDRIP bike trails across intersections with grade separated crossings on north side of river.	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.			●		Implementation
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. Refer to the Lower Valley Key Sites section for additional detail.	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.	●	●	●		
L11S	Create trail connection from Mission City Trolley Station to Qualcomm Way.	Coordinate with San Diego Bicycle Master Plan and Mission Valley Community Plan to identify specific route alignment.			●		Appendices
L12S	Utilize existing underpass as a means of connecting to neighborhoods and canyon north of Friar's Road.	Support City of San Diego and property owners in effort to improve underpass entrances. Provide lighting and potential better pedestrian connections to the underpass.			●		



KEYNOTE	RECOMMENDATION	IMPLEMENTATION	BENEFITS				
			HYDROLOGY	ECOLOGY	RECREATION	EDUCATION	
Short Term							
L13S	Create bike path connection to San Diego River Park Trail from Bachman Place, Camino de la Reina and Avenida del Rio.	Coordinate with San Diego Bicycle Master Plan and develop specific study to confirm route alignment.			●	●	Executive Summary
L14S	Explore potential to reconnect Ruffin Canyon with the River	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.		●	●	●	
L15S	Establish Green Gateway along I-805 across the valley.	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.		●			
L16S	Collaborate with property owners toward creating river park oriented developments and, where possible, explore potential to acquire undeveloped land adjacent to river.	Engage land owners in dialogue to explore potential river park project opportunities and/or purchase of open space lands or easements adjacent to the river. Coordinate with Mission Valley Community Plan to include in update as amendment.	●	●	●		Introduction
L17S	Mission City Parkway Bridge Mitigation Site. Integrate new riparian and sage scrub habitat restoration with San Diego River Park and trail.	Coordinate with appropriate public agencies and community groups.		●	●		
L18S	River Garden site. Connect to San Diego River Park and Trail.	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.		●	●	●	Principles
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. Refer to the Lower Valley Key Sites section for additional detail.	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.	●	●	●	●	Recommendations
L20S	If stadium redevelops, engage developers to integrate open space connections between San Diego River Park and canyons. Refer to the Lower Valley Key Sites section for additional detail.	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.		●	●		
L21S	Create multi-use trail in conjunction with Qualcomm redevelopment.	Coordinate with stadium redevelopment process and San Diego Bicycle Master Plan to identify specific alignment.		●			Design Guidelines

Implementation

Appendices



KEYNOTE	RECOMMENDATION	IMPLEMENTATION	BENEFITS				
			HYDROLOGY	ECOLOGY	RECREATION	EDUCATION	
Long Term							
L1L	Connect to Presidio Park via Taylor Street bridge over I-8.	Coordinate with Caltrans to explore potential to improve pedestrian component of the Taylor Street bridge to better accommodate pedestrians and bicyclists.		●	●		Executive Summary
L2L	Engage landowners to encourage any future redevelopment of Riverwalk GC to address river.	Coordinate with land owners to encourage modifications to current plan to include habitat and open space corridor that follows the 100 year floodway to allow for river meander, native vegetation and San Diego River Park Trail corridor.		●	●	●	
L3L	Engage landowners to explore potential to create urban park oriented to the river on both sides of river.	Initiate dialogue 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.		●	●	●	
L4L	Investigate opportunities to improve water quality in FSDRIP and 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 ponds.	Initiate feasibility study investigate removal of flow restrictions, and add aeration devices, etc. to improve water quality, improve the river environment and to separate stream flow from ponds and improve wildlife habitat and trail experience.	●		●	●	Introduction
L5L	Improve trail connections between river corridor and canyons.	Coordinate with San Diego Bicycle Master Plan to identify specific alignment and connection priorities.			●		Principles
L6L	Create trail and open space connection to Balboa Park.	Initiate feasibility study to identify specific trail alignment. Coordinate with San Diego Bicycle Master Plan and Caltrans to identify potential trail alignment.		●	●		
L7L	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	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.		●	●	●	
L8L	Implement bike path as part of the San Diego River Park Trail.	Coordinate with San Diego Bicycle Master Plan to identify specific alignment and implementation priority.		●	●		
L9L	Create open space and trail connections to uplands via an improved Texas Street.	Coordinate with City of San Diego and the San Diego Bicycle Master Plan to improve Texas Street and create a dedicated multi-use trail separated from streets with a naturalized open space corridor.			●		Recommendations
L10L	Improve Mission City Parkway over crossing to connect river corridor and upland open space	Coordinate with Caltrans to explore the potential to improve Mission City Parkway bridge over I-8 to connect people to the uplands.			●		Design Guidelines
L11L	Create San Diego River Trail on north side of river through Riverwalk development.	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.			●		

Implementation

Appendices

Confluence

Intent: The Confluence reach is the area between I-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. There is opportunity to reveal this junction of canyons and streams in a



Grantville Redevelopment Study could encourage improvement of property adjacent to the river



Gravel mine ponds below Friar's Road bridge

way that celebrates the cultural, ecological, and historical significance of each. This reach also acts as gateway to multiple destinations, allowing users to access Murphy Canyon, Alvarado Canyon, Collwood Canyon, Navajo Canyon and the San Diego River valley.

Condition: This reach is partially enclosed by the steep wall of the knob topped by Mission San Diego de Alcalá. Encroaching development on the east and Interstate 8 on the south further emphasize the sense of enclosure.

The river corridor is also constrained by a series of old gravel mine 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 *arundo* further adds to the river's inaccessibility.

Recommendations:



River is choked by invasive vegetation

- Create a continuous multi-use path and connecting trails
- Create a connection with Alvarado Canyon and on to Collwood and Navajo Canyons.
- Acquire land or establish easements.
- As the site specific development plans for the River Park and for adjacent land are prepared, establish an appropriate open space and habitat corridor width that follows the existing floodplain, varying in width. The open space and habitat corridor should provide adequate width to re-contour the river channel to allow for increased river length and meander and to expand native riparian habitat.
- River corridor is narrow and constrained above the bend. Past sand and gravel operations have resulted in relatively deep ponds. Separating the stream channel from the ponds is recommended, but additional land is likely necessary to achieve this.
- Acquisition of land adjacent to the river corridor is recommended. Trail connection through this narrow corridor will be difficult due to steep side slopes if additional land is not acquired.
- Trail easements to provide connection to Mission San Diego de Alcalá at each end of the Confluence Reach is recommended.
- Coordination with the Grantville Redevelopment Study presents the potential opportunity for the San Diego River Park to positively influence redevelopment as well as to benefit from new activities along the river corridor.

The Grantville Redevelopment Study, now in its early stages, may provide the tools to change the river landscape in the Confluence. By engaging owners of under utilized property on the east edge of the river corridor, the study may create opportunities for the acquisition of land, or establishing easements that could increase corridor width. A wider corridor would allow the river to be separated from the ponds, and offer space to develop a trail corridor. Once the ponds are separated, a complementary action might be improving them for more intensive recreation activity such as fishing and boating.

If the open space corridor in these areas can be expanded to the east, the San Diego River Park Trail can be best accommodated on the east side of the river. The west side of the river is steep and narrow, and does have possibilities for trail construction, however cantilevered construction may be necessary and could have a significant impact on the river.

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

Key Sites:

Enhance Confluence with Alvarado Creek

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, today 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 reestablish the visual continuity of the canyon system with the valley. A green connection will also benefit the river by providing natural filtration of surface runoff, increase riparian habitat and allow space for trail connections to communities and open space to the east.

Key Points

- Critical location for reconnecting San Diego River with its most significant tributary canyon within the City of San Diego.
- Although beyond the bounds of this Plan, daylighting and dechannelizing 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. Similar to enhancing Murray Creek, such improvements are a model for the treatment of all canyons that connect to the San Diego River.



Channelized Alvarado Creek above Grantville Post Office



Channelized Alvarado Creek behind Medical Center



100' Min.
A naturalized Alvarado Creek and its Greenway can be at the heart of the Grantville redevelopment

Upper Valley

Executive Summary

Intent: The Upper Valley reach extends from Friars Road Bridge to the west 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 broad and open near Admiral Baker Golf Course. Heavily impacted by human activity, conditions in this reach range from the severe character of a surface mine to the exotic landscape of a golf course, bracketed alternately with dense development and sage scrub habitat. This reach is particularly significant for habitat, offering the potential to extend the diverse habitats of Mission Trails Regional Park further into the valley. This reach also offers tremendous potential to transform the landscape dramatically and improve the health of riparian and terrestrial ecosystems.

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Condition: The Upper Valley 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.*).

Recommendations:

- Establish a continuous open space and viable habitat corridor in the Upper Valley that achieves wildlife movement and habitat objectives. The appropriate design and layout of the corridor should be determined during site specific planning processes that consider habitat, water quality, hydraulic, recreation, and access and development opportunities
- Identify land appropriate for an open space amenity that is accessible and usable by the public.
- Improve interface between Admiral Baker Golf Course and the river.
- Explore opportunities to improve water quality and river pattern.
- Create sites at waystations to interpret the history of the valley settlement and the Old Mission Dam flume.

- Balance the improvement of water quality, the movement of wildlife, the movement of people with high quality development within the Upper Valley.

The San Diego River Park passes through the Grantville Redevelopment Study area. Collaboration between the River Park planning effort and the Grantville study should continue to find opportunities for shared benefits and to ensure compatibility between the two efforts. The redevelopment study presents an important means of implementing the Park through the Upper Valley.

As redevelopment occurs, consideration should be given to separating the river from ponds throughout the Upper Valley, as this action will likely improve 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.

Key Sites:

Admiral Baker Golf Course

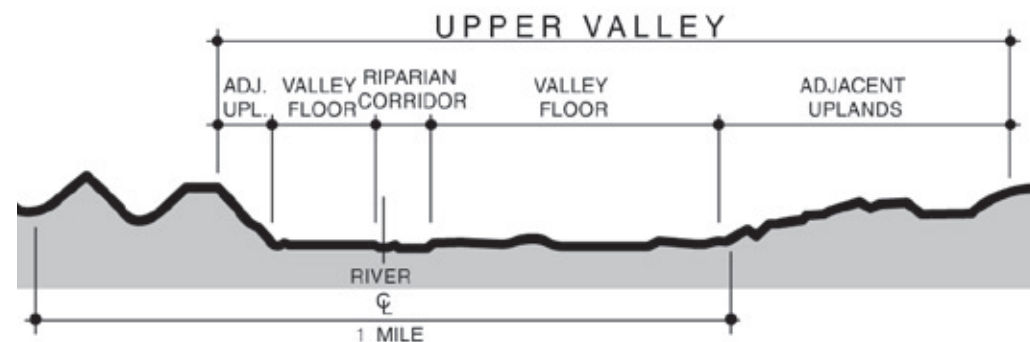
There are no plans to close or redevelop the course, but there are opportunities to integrate the course in the river corridor. Methods of meshing the two landscapes might include pedestrian trail connections across the course or the redevelopment of the golf course as a “links” or target course with native landscaping between tee and green. 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

- Continuing ongoing discussions with Navy Planners is essential to finding an appropriate level and means of integrating the golf course with the San Diego River Park.
- This is a critical location for expanding habitat area and connections to the upper canyon north of the golf course.
- The potential exists to 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 San Diego River Park Trail with an overlook at the upper elevation and a waystation at its intersection.



Upper Valley looking east over Admiral Baker Golf Course



Upper Valley Section

Superior Mine Redevelopment

Evolution of the landscape within the Upper Valley hinges upon successfully engaging the land owners, developers and planners of Superior Mine and adjacent lands with the River Park planning process. As these lands move toward reclamation and redevelopment, collaboration between both planning efforts can bring about benefits to all parties. Creating adequate corridor width for habitat and trail is a minimum requirement. A broad natural corridor through the mine site could serve as a strong organizing feature of the development. This corridor might include trail, 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 creates the potential of increasing property values and 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 commuter bicycle connection to adjacent communities and trolley service.

In the San Diego River Park Illustrative Concept sketch below, an approach is suggested that expands both native riparian and upland vegetation communities. In this concept the ponds are separated from the river. This concept illustrates only one approach and is not intended to propose a specific design for the site. The best solution can only be determined by studying the specific conditions of the pond and the river in conjunction with the site specific planning effort of the adjacent properties.



San Diego River Park Illustrative Concept

Key Points

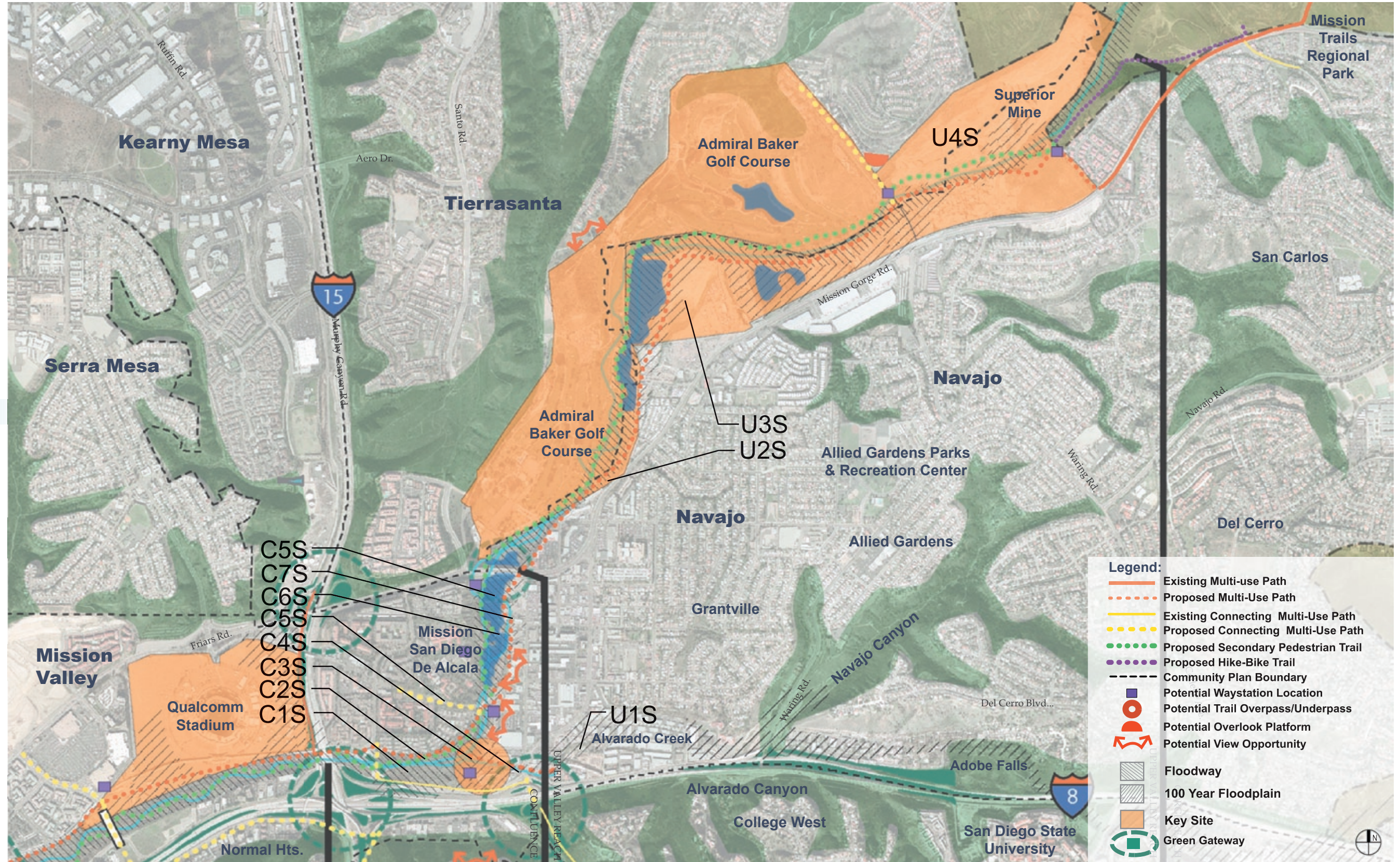
- Ongoing discussions with Superior Mine land owners and developers is essential to finding an appropriate balance between development and open space.
- Potential for the site to redevelop for more intensive use makes time critical to taking action at the planning level. While mining operations are scheduled to continue for another 20 years, potential redevelopment value may reduce this time frame.
- Create an open space amenity that is accessible and usable by the public that provides access to the river as well as value to the development project. The location, size and use of this amenity should be studied as part of the specific land planning studies for the River Park and the development.
- The 100 foot buffer indicated in the Land Development Code - Biological Guidelines should be of such variable width as to protect the habitat and provide adequate areas for redevelopment.



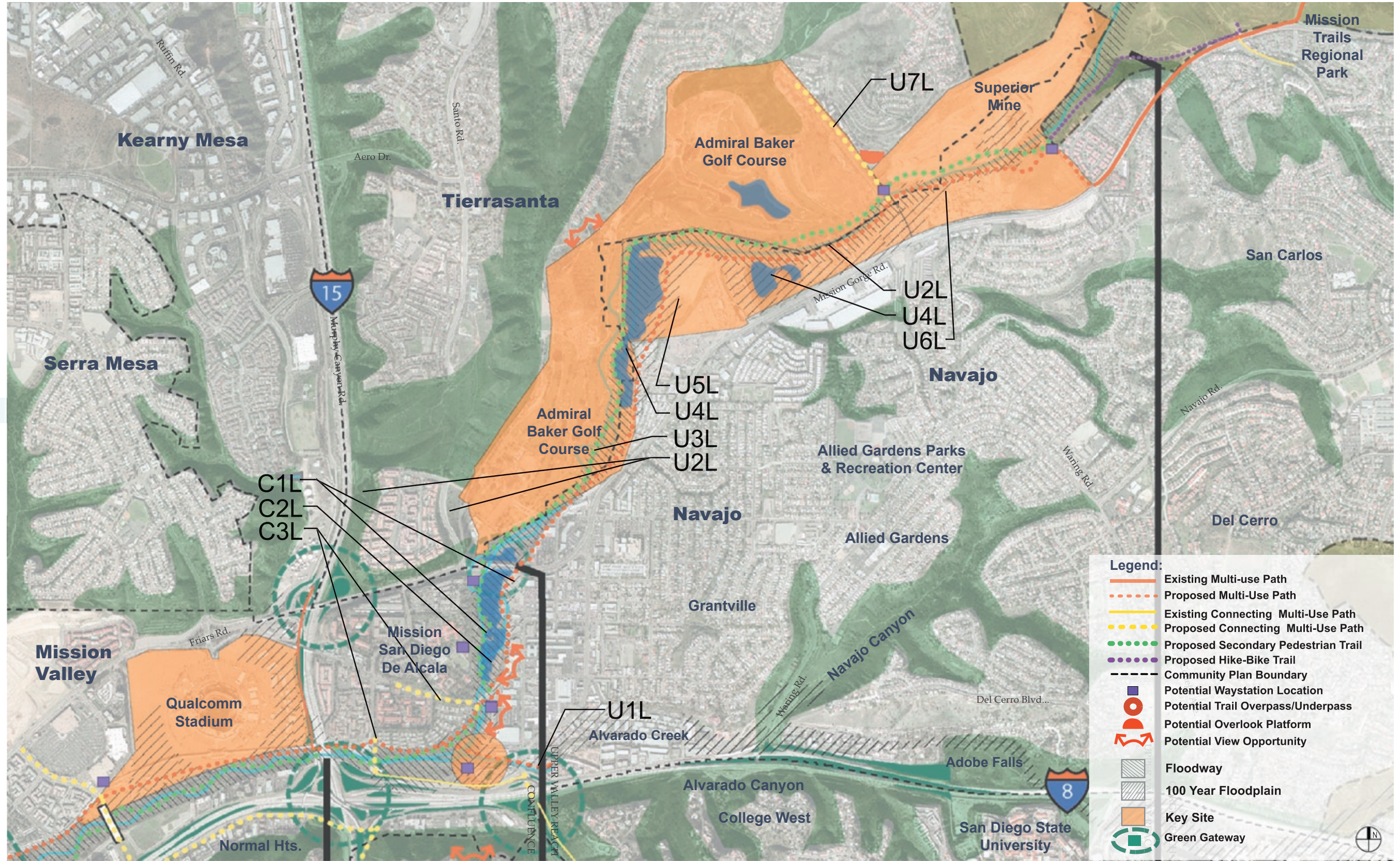
Admiral Baker Golf Course



Superior Mine



KEYNOTE	RECOMMENDATION	IMPLEMENTATION	BENEFITS				
			HYDROLOGY	ECOLOGY	RECREATION	EDUCATION	
Short Term - Confluence							
C1S	Develop city owned property as wetland habitat preserve and coordinate with potential water reclamation plant. Potential for Caltrans property to be developed for habitat and areas for the San Diego River Park Trail.	Integrate Caltrans property as part of riparian open space and pursue dedication of new river open space preserve.	●	●	●	●	Executive Summary
C2S	Create San Diego River Park Trail along north edge of river.	Coordinate with the appropriate agencies, community groups and the Grantville Redevelopment Study to identify specific route alignment of potential multi-use trail on north side of the river.			●		
C3S	Coordinate with proposed Grantville redevelopment to create improved open space at the bend in the river.	Coordinate with Grantville Redevelopment Study to identify potential land for park or open space through acquisition or open space easements.	●	●	●	●	Introduction
C4S	Improve open space and trail connection with Alvarado Canyon and Navajo Canyon.	Coordinate with appropriate agencies and community/special interest groups to study potential and to identify specific route alignment of potential multi-use trail on south side of Alvarado Creek. Coordinate with public agencies to explore potential to aggregate public lands under a single management.	●	●	●		
C5S	Create connection between San Diego River Park Trail and Mission San Diego De Alcala.	Coordinate with appropriate agencies to improve on-street bike lane and provide signage.			●		Principles
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.	Coordinate with Grantville Redevelopment 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.	●		●		
C7S	Create San Diego River Park Trail along east edge of river.	Coordinate with appropriate agencies, community groups and the Grantville Redevelopment Study to study potential and to identify specific route alignment of potential multi-use trail 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 Alcala. If land cannot be acquired study alternative alignment on west side of river.			●		Recommendations
Short Term - Upper Valley							
U1S	Coordinate with proposed Grantville redevelopment to preserve additional open space along Alvarado Creek Corridor at the confluence with the San Diego River.	Coordinate with appropriate agencies, community groups and the Grantville Redevelopment 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.	●	●			Design Guidelines
U2S	Create habitat and continuous multi-use trail near river adjacent to Admiral Baker 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.	●	●	●	●	
U3S	Engage land owner and ongoing planning effort to explore potential to acquire land as improved open space.	Initiate dialogue with Superior Mine land owners and planners to explore potential to establish naturalized open space and habitat areas adequate to achieve wildlife habitat and path corridor objectives within the undeveloped land. Coordinate with site specific planning processes to explore opportunities to broaden the river channel, create additional meander and locate a continuous multi-use path.		●			Implementation
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.	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.				●	



KEYNOTE	RECOMMENDATION	IMPLEMENTATION	BENEFITS				
			HYDROLOGY	ECOLOGY	RECREATION	EDUCATION	
Long Term - Confluence							
C1L	Implement trail and open space plans.	Prepare specific plan for design of trail alignment and natural open space as land or easement is acquired	●	●	●		
C2L	Implement open space identified through Grantville Redevelopment Study to improve habitat and recreation.	It is anticipated that the Grantville Redevelopment 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.	●	●	●		Executive Summary
C3L	Implement trail connection and interpretive signage to Mission San Diego De Alcala connecting via Rancho Mission Road and San Diego Mission Road.	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.			●	●	
Long Term - Upper Valley							Introduction
U1L	Implement potential improvements to trail and habitat connections with Alvarado Canyon and Navajo Canyon.	Prepare specific plan for design of trail alignment, natural open space and day-lighting Alvarado Creek	●	●	●		
U2L	Improve open space and trail connection to Elanus Canyon north of Admiral Baker Golf Course.	Continue dialogue with appropriate agencies, community groups and Navy planners to identify potential locations.		●	●		
U3L	Continue to collaborate with Navy planners to integrate Admiral Baker Golf Course with the river to create expanded riparian corridor, habitat and trail connections.	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	●	●	●		Principles
U4L	Separate stream flow from ponds as land is redeveloped.	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.	●	●			
U5L	If land is acquired, develop improved open space with views and access to ponds as habitat and recreation areas.	Coordinate with appropriate agencies and community groups to prepare specific plan and implement improved open space parks.	●	●	●	●	Recommendations
U6L	As Superior Mine redevelops, implement plan to focus development on river corridor and to create riparian habitat and multi-use trail as component of redevelopment plan.	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.		●	●		
U7L	Create trail connection to Tierrasanta neighborhood with the San Diego River Park. This would include an overlook at the higher elevation.	Coordinate with appropriate agencies, community/special interest groups and land owners to identify specific alignment and access points.		●	●	●	Design Guidelines

Implementation

Appendices

Gorge

Executive Summary

Intent: For the purposes of this planning effort, the Gorge is defined primarily as coincident with the Mission Trails Regional Park (MTRP) boundary but also includes privately owned land between MTRP and Mast Boulevard. The Gorge reach offers a strong sense of enclosure reinforced by the rising walls of Fortuna Mountain and Kwaay Paay Mountain. Mission Trails Regional Park is one of the “jewels” of the San Diego River watershed, and the San Diego River Park offers a

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

means of linking this stunning resource to the area’s other principal natural features.

Condition: Established in 1974, Mission Trails Regional Park has preserved the valley’s original landscape of sage scrub, chaparral, oak woodland and riparian habitats in exceptional condition. At 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.

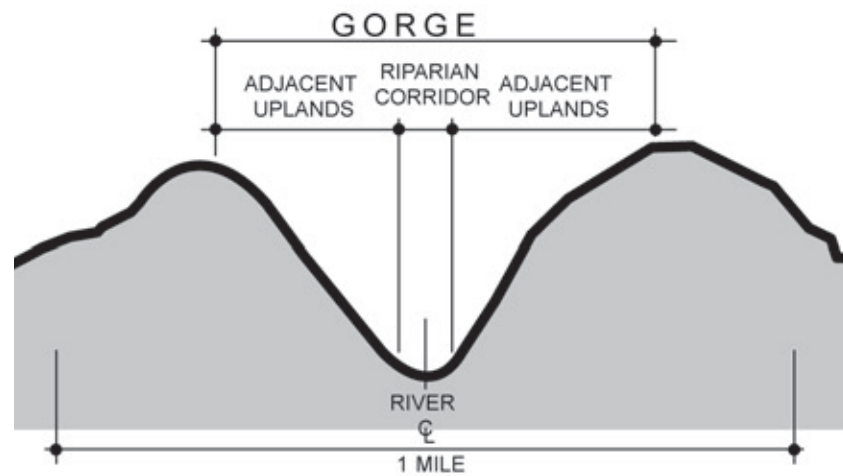
Recommendations:

- Support the Mission Trails Regional Park Master Development Plan.
- When Superior Mine redevelops, create a unpaved hike/bike trail at the west end of MTRP that will link the proposed multi-use path through the Superior Mine site with existing hike/bike trails in MTRP
- Create an unpaved hike/bike trail linking the Mast Boulevard trail head with the proposed multi-use trail adjacent to Carlton Oaks Golf Course that will ultimately connect MTRP with Mast Park and Santee Lakes in the City of Santee

Efforts in the Gorge should align with and support the mission of Mission Trails Regional Park. The goals of the San Diego River Park Master Plan are in harmony with those of the Mission Trails Regional Park Master Development Plan and focus on continually improving hydrology and habitat along the length of the river. The San Diego River Park Plan should seek collaborative opportunities with MTRP 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 MTRP Visitor Center. Planning efforts should also consider improving the bike lanes or creating a trail if impossible within the Mission Gorge Road right-of-way; this trail would create internal and external connection, within the park and with up-stream communities.



Old Mission Dam



Gorge Section



South Fortuna Mountain



The Gorge in Mission Trails Regional Park

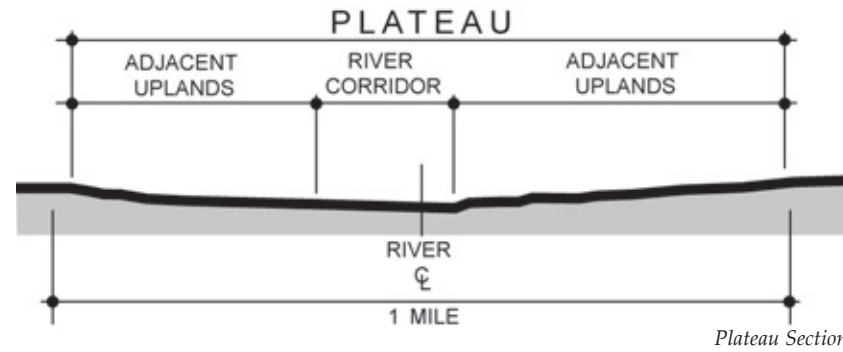
Plateau

Intent: East of Mission Trails Regional Park, the terrain again opens 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 Plateau is an opportunity to integrate the river experience with adjacent development and the City of Santee. The San Diego River Park should focus on connecting Mission Trails Regional Park with Mast Park and Santee Lakes. These points should be linked by a multi-use path system integrated within a larger habitat corridor.

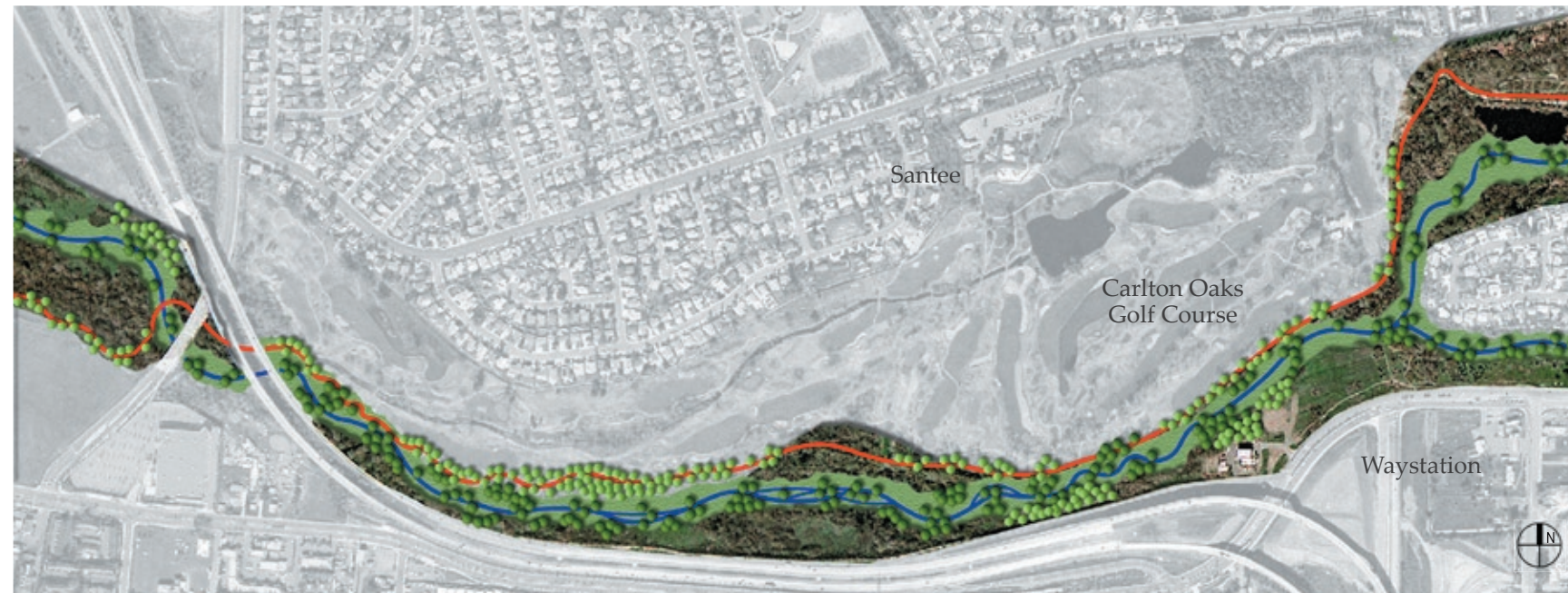
Condition: The San Diego River is negatively impacted by a variety of physical constraints. A dike along the southern edge of the Carlton Oaks Golf Course and SR-52 to the south and west separates the river and the golf course. Heavy infestations of Giant Reed, Brazilian pepper, and fountain grass (*Pennisetum 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 at the east end of Carlton Oaks Golf Course through Environmental Trust land and to the City of Santee.

Recommendations:

- Create a trail head and gateway to the City of San Diego sections of the San Diego River Park.
- Build trail along the south edge of Carlton Oaks Golf Course.
- Establish a minimum open space corridor that follows the 100 year floodway.
- Create a connection under SR-52 leading to Mission Trails Regional Park.



Invasive vegetation management project in progress



Conceptual San Diego River Park at Carlton Oaks Golf Course

Key Sites:

Carlton Oaks Golf Course

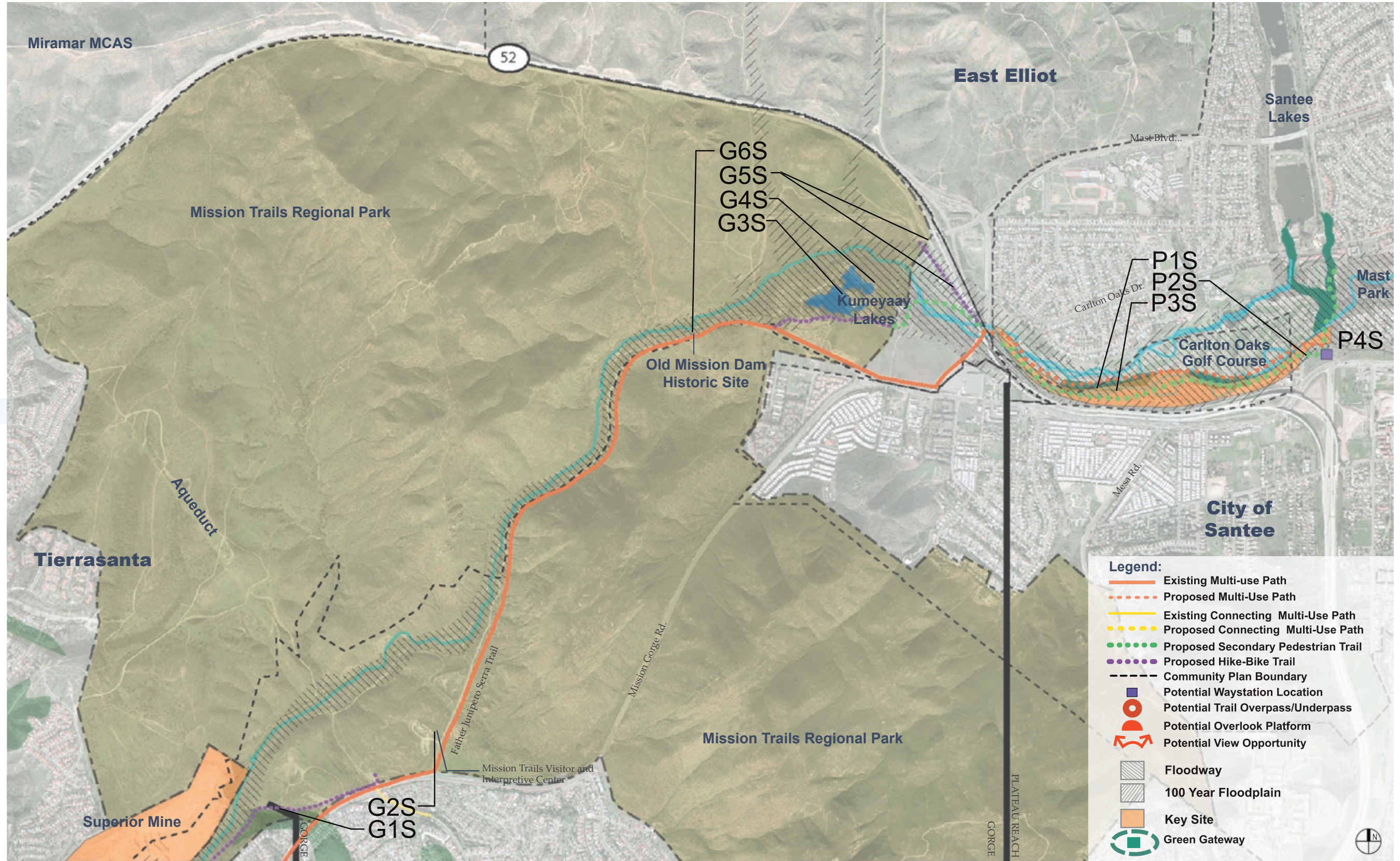
There is potential for the golf course to accommodate a trail on its southern edge near the river; this possibility should be explored when the Carlton Oaks Golf Course lease comes due for renewal. Land currently not used as golf course should be negotiated out of the lease to be for trail and open space. The long term potential for this area to evolve to become 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 course may accommodate multiple user groups.

Key Points

- Critical location for connecting the City of San Diego segment of the San Diego River Park with Santee and upstream segments of the Park.
- River corridor is channelized, narrow and constrained on the south side of the golf course. Open space corridor will provide adequate width to re-contour the river channel. Improved channel should allow increased river length and meander, increased riparian habitat, and run-off buffering at the golf course.
- An open space corridor that follows the 100 year floodway alignment is recommended, with trail corridor/buffer adjacent to golf course.
- Connection under SR-52 is necessary to achieve continuity of San Diego River Park, and to connect trail with City of Santee's Mast Park.
- Build upon vegetation management projects already underway.



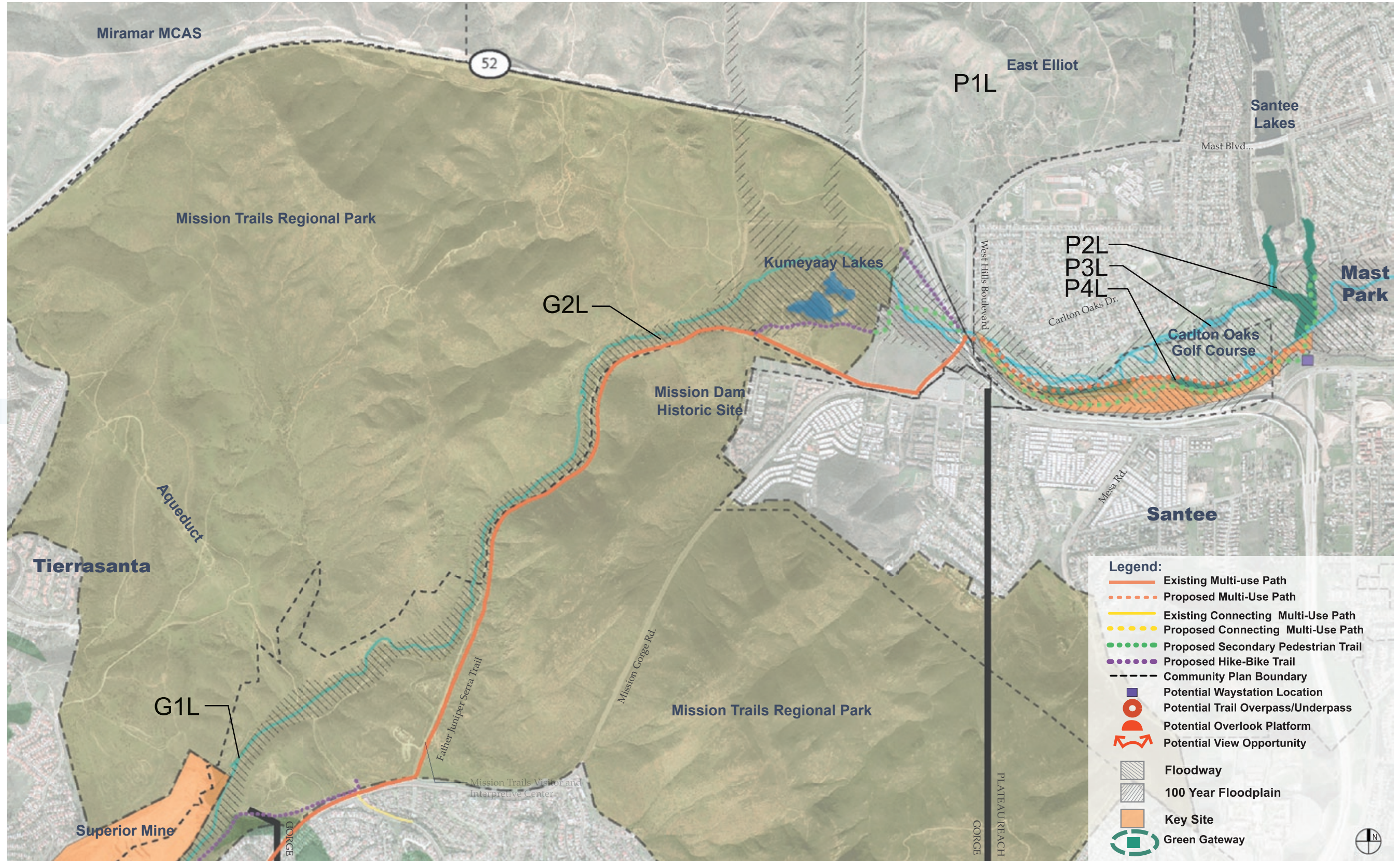
Cottonwood Gallery and secondary stream channel on Carlton Oaks Golf Course



KEYNOTE	RECOMMENDATION	IMPLEMENTATION	BENEFITS				
			HYDROLOGY	ECOLOGY	RECREATION	EDUCATION	
Short Term - Gorge							
G1S	Support Mission Trails Regional Park efforts to create a continuous trail system and identify potential connections between the San Diego River Park Trail and existing hike/bike trails in MTRP.	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.	●		●		Executive Summary
G2S	Support existing and proposed interpretation of the river and history of the park at Mission Trails Visitor and Interpretive Center.	Continue dialogue with Mission Trails Regional Park Master Plan and Citizens Advisory Committee.				●	
G3S	Support existing interpretation of the river and the history of valley at campground and Kumeyaay lakes.	Continue dialogue with Mission Trails Regional Park Master Plan and Citizens Advisory Committee.				●	
G4S	Support the implementation of the Kumeyaay Lakes Dredging and Berm Restoration Capital Improvement Project.	Continue dialogue with Mission Trails Regional Park Master Plan and Citizens Advisory Committee.	●	●		●	Introduction
G5S	Create an unpaved hike/bike segment of the San Diego River Park Trail between MTRP at the MTRP East Fortuna trail head and the proposed multi-use path segment on the south edge of Carlton Oaks Golf Course. Connect the trail to Father Junipero Serra Trail following West Hills Parkway and Mission Gorge Road.	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 of implementation.	●		●	●	Principles
G6S	Support the implementation of the Old Mission Dam Dredging Capital Improvement Project.	Continue dialogue with Mission Trails Regional Park Master Plan and Citizens Advisory Committee.	●	●		●	
Short Term - Plateau							
P1S	Create San Diego River Park Trail segment along south edge of Carlton Oaks Golf Course and improve native vegetation and habitat along proposed trail corridor.	Coordinate with appropriate agencies, community groups and land owners to identify potential trail alignment adjacent to golf course. Initiate dialogue with Caltrans and golf course owners to identify potential alignment and methods to create trail connection under SR-52 and West Hills Boulevard.			●		Recommendations
P2S	Create historic interpretation zone.	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.			●	●	
P3S	Capitalize on existing tree galleries in golf course to create buffer along river and remove exotic vegetation from river corridor.	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.		●		●	Design Guidelines
P4S	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.	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.		●	●		

Implementation

Appendices



KEYNOTE	RECOMMENDATION	IMPLEMENTATION	BENEFITS			
			HYDROLOGY	ECOLOGY	RECREATION	EDUCATION
Long Term - Gorge						
G1L	Collaborate with Mission Trails Regional Park to create waystation at edge of Mission Trails Regional Park with interpretive information.	Install signage, interpretive kiosk and furnishings with implementation of San Diego River Park Trail segment as part of the Superior Mine redevelopment.			●	●
G2L	Continue to support maintenance of the Old Mission Dam dredging. This project may need to recur in the future on a regular basis.	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.	●			●
Long Term - Plateau						
P1L	Explore potential to connect with new open space to north and east.	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.	●	●	●	●
P2L	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.	Monitor future action related to potential land use change.	●	●	●	
P3L	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.	Initiate dialogue with Carlton Oaks Golf Course to identify methods to modify golf course to be more environmentally compatible with river corridor.	●	●		
P4L	Explore potential to realign some golf holes to eliminate dike, recreate stream meander, realign multi-use trails and expand native wildlife habitat. Consider a new concept for the golf course as a links or target course that is substantially native vegetation.	Initiate dialogue with appropriate agencies, community/special interest groups and Carlton Oaks Golf Course to explore potential changes to course.	●	●	●	●

Executive Summary

Introduction

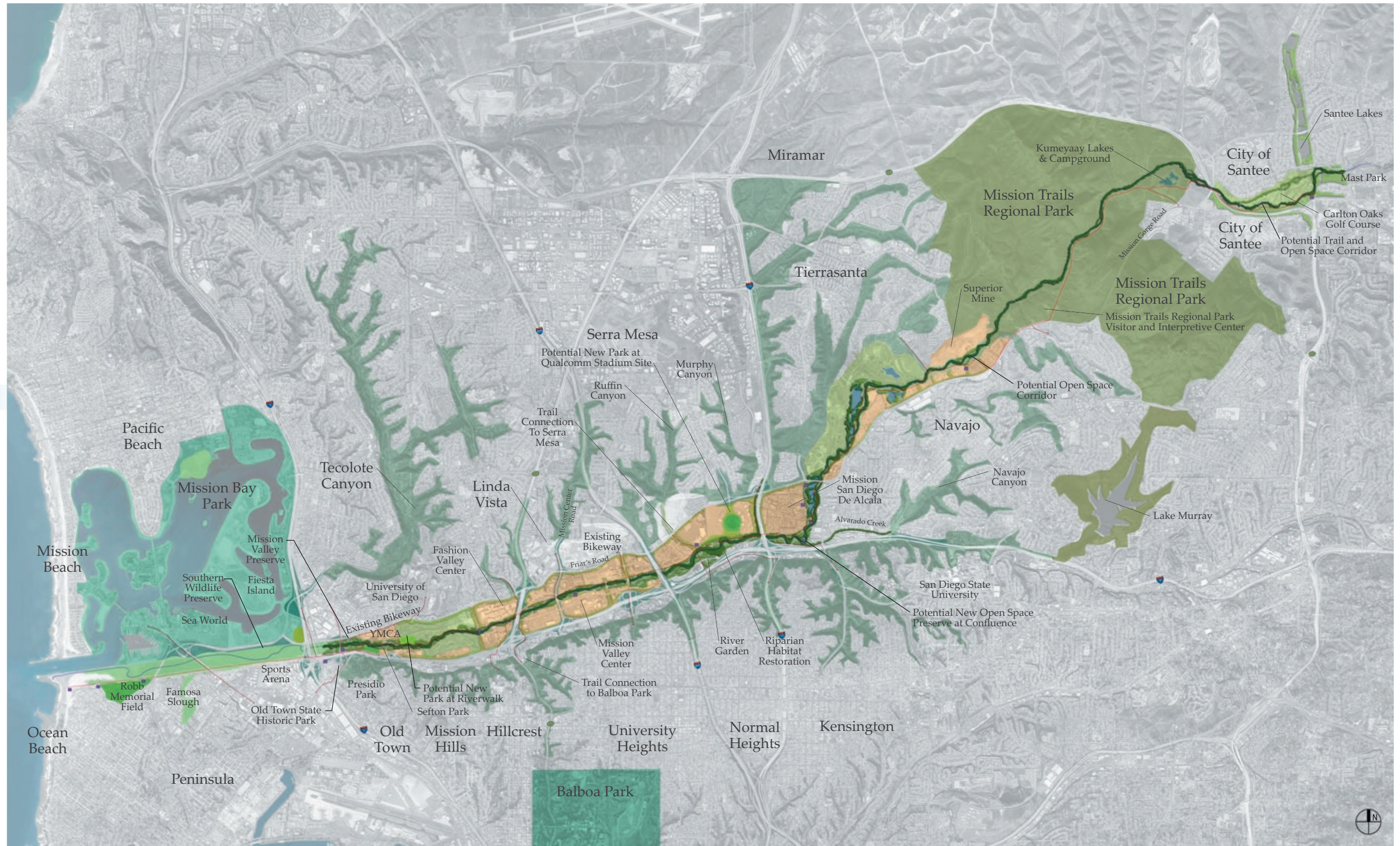
Principles

Recommendations

Design Guidelines

Implementation

Appendices



Illustrative Master Plan

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Design Guidelines

The following Design Guidelines have their basis in existing City of San Diego documents, including the San Diego Bicycle Master Plan, and the Mission Valley, Navajo, and Tierrasanta Community Plans. The ideas developed through the public process of the Conceptual Plan and of this Draft Master Plan have also been incorporated into the recommendations for the San Diego River Park. Each Guideline category is applicable to each reach of the San Diego River Park, but certain elements described within the Guidelines are modified to specifically respond to the character and issues in each reach.

Principles of sustainability are inherent in every aspect of the San Diego River Park. The planning principles and recommendations guide the evolution of the valley toward a regionally appropriate landscape that is sensitive to the cultural, physical and climatic conditions. Implementing the ideas of this plan will lead to increased bio-diversity in the valley, cleaner water in the river through increased filtration and decreased water use through the planting of appropriate native species. The use of local, reusable and recycled materials is encouraged. Each step toward implementation of the San Diego River Park should strive to be a model of a 'green' approach to development. The application of guidelines such as the U.S. Green Building Council's Leadership in Energy and Environmental Design are encouraged.

Ultimately, the San Diego River Park and Trail will provide connectivity between communities, between neighborhoods and transit stops and between residential areas and work places creating the opportunity for many San Diegans to consider alternative modes of transportation.

Corridors/Buffers

Three corridor types are recommended for the San Diego River Park: A Habitat and Open Space Corridor that serves to primarily protect and create wildlife habitat; a Path Corridor that is parallel to the open space corridor to provide buffer space for a multi-use path; and a Water Quality Buffer located within the open space corridor that filtrates surface runoff draining toward the river. A minimum Habitat and Open Space Corridor should be preserved for the river. This corridor is generally within the existing river floodway, and should provide adequate space for improving river hydrologic function by allowing the channel to be separated from ponds, to be widened to allow for recreating meanders in some locations, and to provide functioning habitat for a variety of species.

The Habitat and Open Space Corridor may not be centered on the river channel itself and should vary in width, reaching beyond the native riparian zone to provide a diversity of native vegetation and habitat to provide for a viable ecosystem. Between Mission Trails Regional Park and Friars Road, there is an opportunity to benefit a greater diversity of species including larger animals because of the connection to the significant reservoirs of contiguous native landscape in MTRP and Elanus Canyon. Downstream of Friars Road Bridge to Mission Valley Preserve, it may not be realistic to expect a broad range of larger species because of the impact of highways, bridges, traffic noise, isolation from canyons and the encroachment of development on the valley floor.

A paved multi-use trail should be located outside of the Habitat and Open Space Corridor. The alignment of the Habitat and Open Space Corridor should allow for the multi-use trail to occasionally cross over the river and run parallel to it for short distances of less than 1/8 mile. In such instances the minimum Habitat and Open Space Corridor width should be provided near the river but opposite the trail alignment. Soft paved pedestrian trails may be located within the Open Space Corridor.

Vegetation within the Habitat and Open Space Corridor should include a range of native plant communities, forming a continuum from riparian, freshwater marsh in the lowlands, to coast live oak woodland and chaparral in the uplands; reaching into side canyons that include coastal sage scrub. Vegetation should allow a variety of views and access to the river, particularly near trails, with areas of dense riparian and upland under story to provide wildlife habitat and buffer from adjacent uses:



Walkers along the San Diego River

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Habitat and Open Space Corridor, San Diego River, minimum total widths

- Estuary: Equal to present dimensions of dike, expand should opportunity arise to realign and terrace dike edges to incorporate additional estuarine and upland native vegetation.
- Lower Valley: Equal to 100 year floodway alignment. Expand where possible with redevelopment opportunities to incorporate additional riparian and upland native plant communities.
- Confluence: Equal to 100 year floodway alignment. Expand where possible by integrating with new development and redevelopment to incorporate additional riparian and upland native plant communities.
- Upper Valley: Follow 100 year floodway alignment. Expand where possible by integrating with new development and redevelopment to incorporate additional riparian and upland native plant communities.
- Gorge: As exists in Mission Trails Regional Park. Coordinate with private land owners to improve native vegetation.
- Plateau: Follow 100 year floodway alignment and integrate with Carlton Oaks Golf Course to encourage transition to native plant communities. Expand where possible by integrating with new development and redevelopment to incorporate additional riparian and upland native plant communities.

Open Space Corridor, Canyon Tributaries

The canyons provide important refuge to wildlife species that may access the river. The extent to which the canyons can remain undisturbed native vegetation with connection to the river's riparian corridor will be of benefit to the success of the River Park in providing for wildlife habitat and encouraging wildlife movement. Establish a continuous open space and viable habitat corridor in the canyons that achieves wildlife movement and habitat objectives. The appropriate design and layout of the corridor should be determined during site specific planning processes that consider habitat, water quality, hydraulic, recreation, and access and development opportunities.

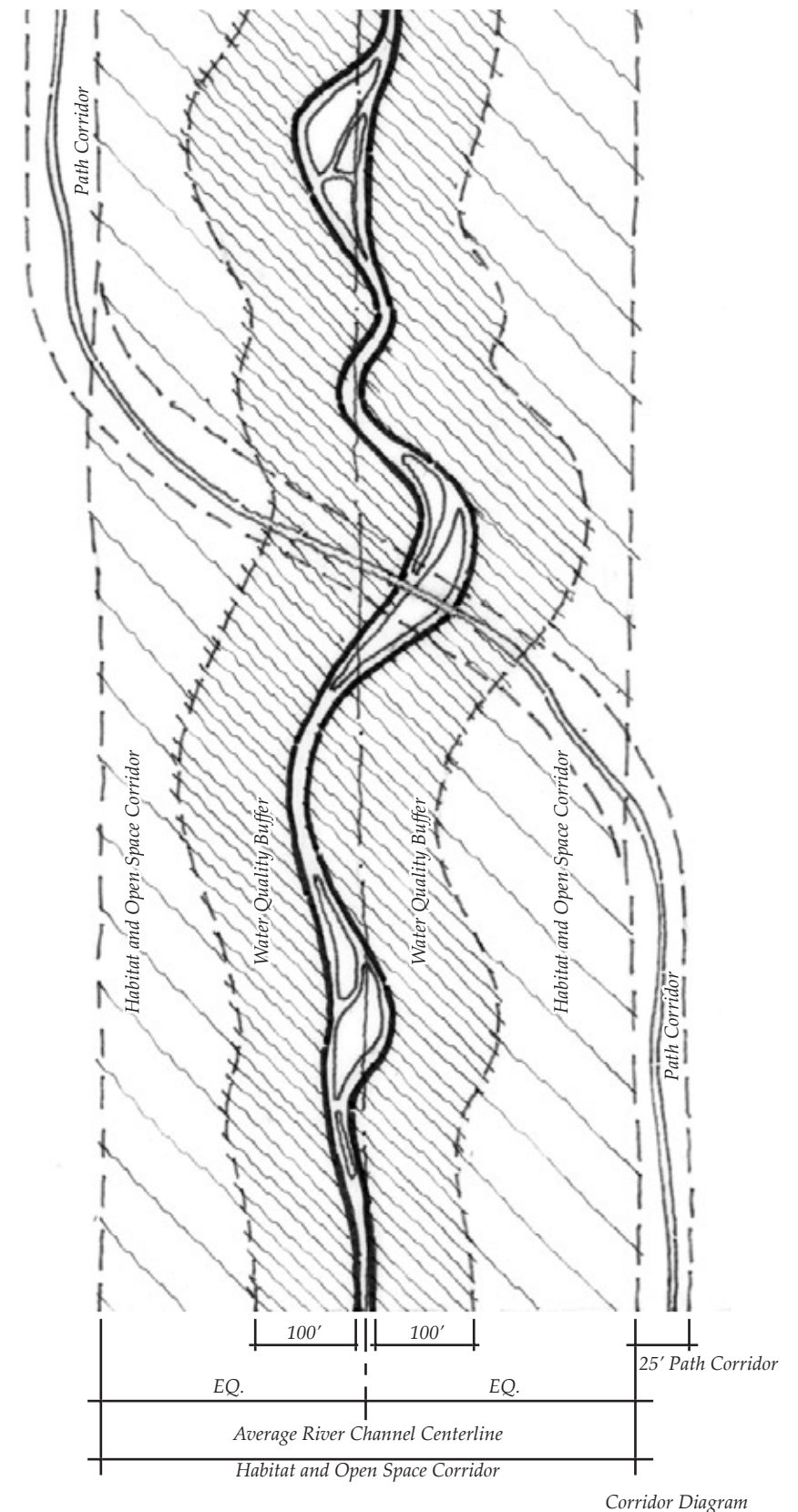
Path Corridor, minimum width (in addition to open space corridor)

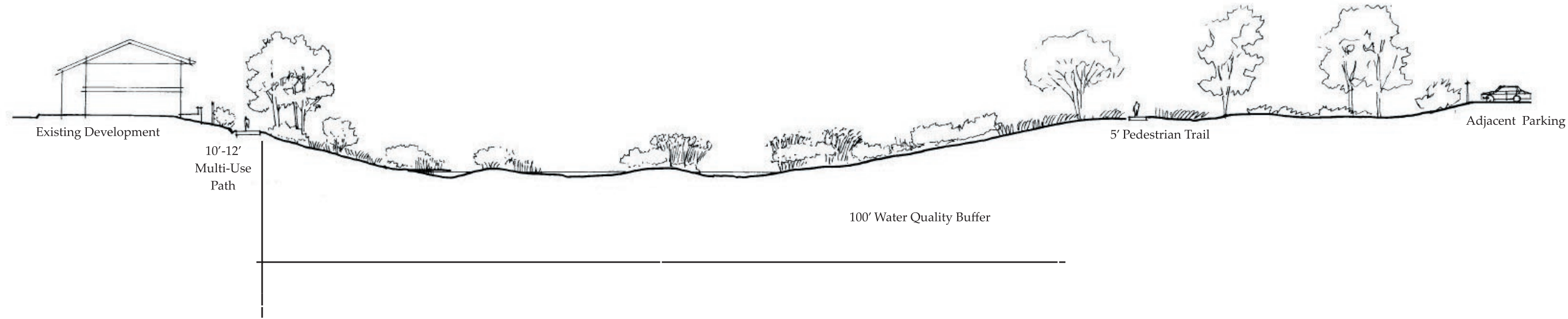
All Reaches: 25'

Water Quality Buffer, minimum width (within open space corridor)

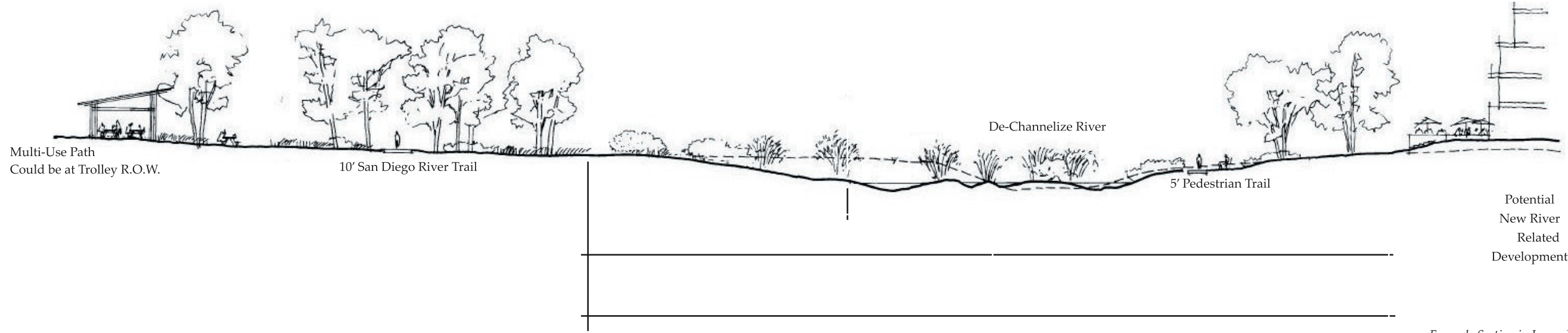
All Reaches: Preferred 100' (from edge of low flow channel)

A vegetative buffer adjacent to the river is important to provide filtration of runoff from adjacent development. The preferred width for such a buffer is 100' from the edge of the river as measured at low flow condition (the edge of water flowing at capacity but below flood stage). This buffer is included within the Open Space and Habitat Corridor, and therefore within the boundaries of the floodway. In some locations, the edge of the floodway is less than 100' from the edge of the river. As development and redevelopment occur in such locations, it is encouraged that appropriate measures be included in the site specific planning process to consider management of runoff to protect and improve the water quality of the river.





Example of Section in Confluence
View to East



Example Section in Lower Valley
View to East

Path and Trail Design

The path and trail system consists of three primary components: the San Diego River Park Trail, Connecting Paths, and Secondary Pedestrian Trails. In addition, unpaved hike/bike connecting trails are proposed in and adjacent to the Mission Trails Regional Park trail system.

The San Diego River Park Trail is an east-west, primarily hard-paved surface trail that will link the ocean trail system through Mission Valley to the City of Santee trail system in Mast Park. This trail builds upon existing Class 1 Bicycle Path and Multi-Use Paths within Mission Bay Park, FSDRIP, Mission Valley and MTRP. The San Diego River Park Trail proposes linking these segments and creating grade separated crossings at difficult intersections. Except as noted, the San Diego River Trail is consistent with the San Diego Bicycle Master Plan. Design standards for multi-use paths are consistent with the Caltrans Highway Design Manual and the City of San Diego Street Design Manual. Trail connections should also be coordinated with the San Diego County Bicycle Transportation Plan and the City of Santee Trail System

Trails within the City of San Diego should be managed in accordance with city standards.

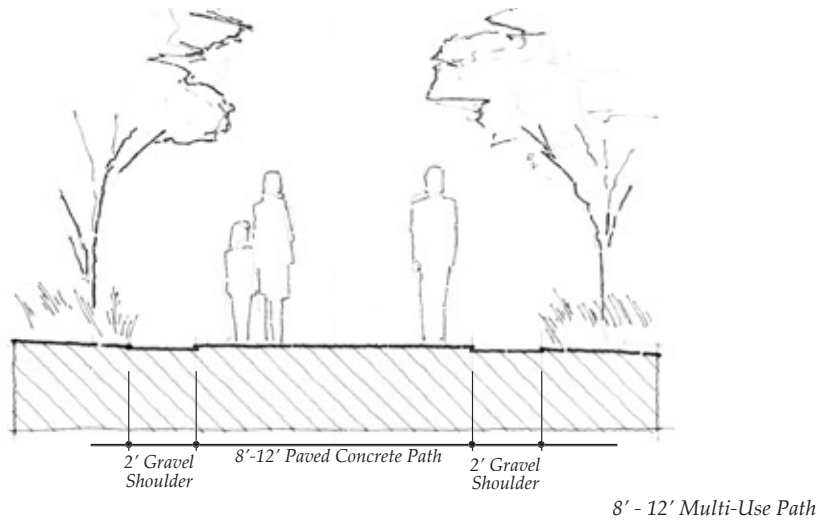
Connecting trails will link to the San Diego River Park Trail with trails and recreation facilities in communities beyond the river valley. These should follow the multi-use trail standard with a minimum width of 8'.

Secondary Pedestrian Trails are proposed within the river valley Open Space Corridor, to encourage a pedestrian experience that allows close engagement with the river and the experience of the valley native landscape. This class of trail permits only pedestrian travel.

Multi-Use Path:

- 8-12 feet wide paved concrete path with 2 foot wide crusher fines shoulders on each side
- Minimum radii and grade per standards
- Sawcut controls joints @ 10' intervals recommended
- San Diego River Park Trail: 10' wide

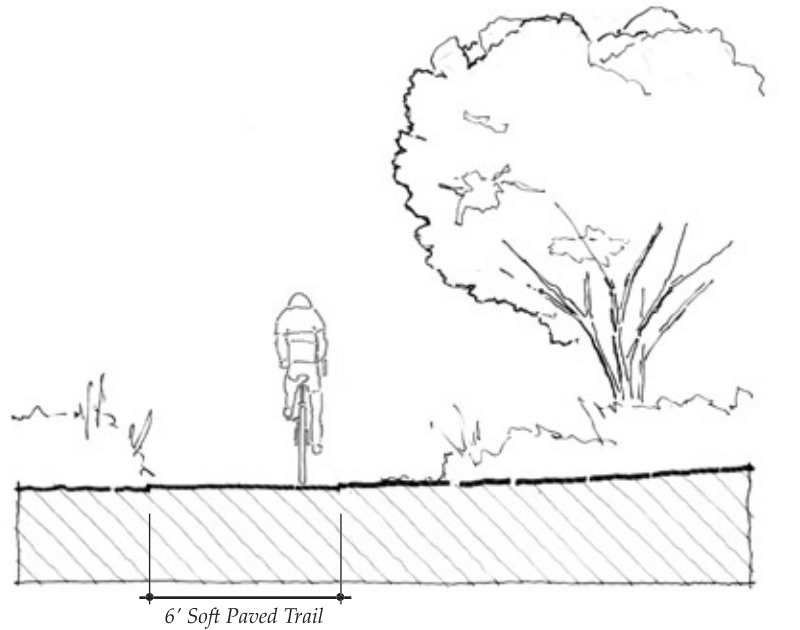
Connecting Multi-Use Path: 8' min. to 12' wide



Hike/Bike Trail:

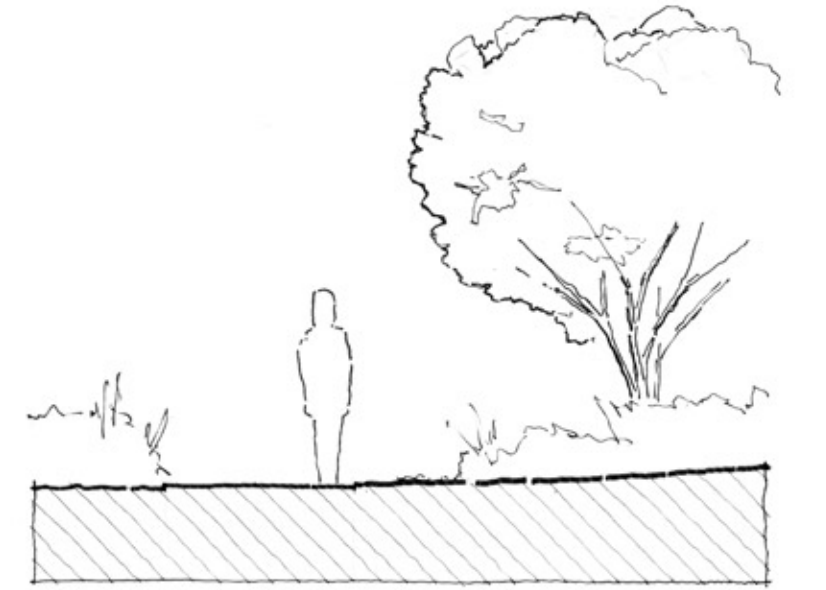
Soft paved trail (gravel fines)
No minimum radii, alignment responds to natural conditions with no disturbance to existing vegetation and minimal grading.

San Diego River Park Trail in MTRP:
In accordance with MTRP standards



Secondary Pedestrian Trail:

5' wide soft surface trail (gravel fines)
No minimum radii, alignment responds to natural conditions with no disturbance to existing vegetation and minimal grading.



Trail Furnishings and Lighting

Furnishings

The San Diego River Park Trail should provide seating, trash receptacles and bicycle racks at all trail heads, corridor access points, waystations and rest areas.

Seating:

- Seating should be durable, comfortable, attractive and securely anchored
- Seating surfaces should generally be 16-18 inches high with a minimum depth of 16 inches
- Seating should generally be offset a minimum of 3 feet from the edge of trails wherever possible; the offset area may vary in surface materials, but should reflect the materials used around it
- Seats with backs should be a dark painted steel, and consistent through out the corridor
- Seats without backs should be dark painted steel with wood or recycled, simulated wood seating surface and consistent throughout the corridor
- Where appropriate, low walls of material appropriate to each reach should be provided at seat height in lieu of, or in addition to benches

Trash Receptacles:

- Locate to allow convenient access for maintenance
- Locate conveniently near (but not next to) seating, trail intersections and at all access points
- Trash receptacles should relate in appearance and color to other furnishings
- Attach firmly to pavement or a footing to minimize vandalism

Bicycle Racks:

- Locate bicycle racks near access points, rest areas and pedestrian trail intersections
- Bicycle racks should be of “inverted U” type
- Bicycle racks should relate in color to other furnishings

Water Features:

- Integrate at entrances and urban edges
- Coordinate with public art elements
- Important opportunity to interpret and express the river and the value and precious nature of water in the arid west.



Bike Rack by SiteScapes, Inc.

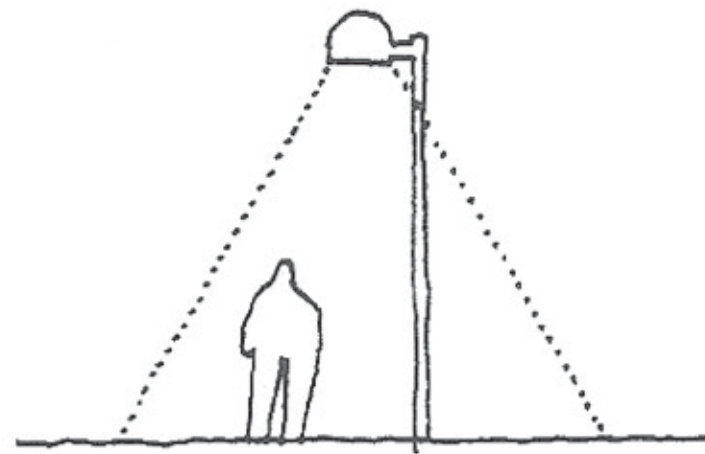
Lighting

The San Diego River Park Trail will generally not be lighted, except where it engages urban edges. Developed parks that are located within the river corridor should be lighted in a manner that meets or exceeds typical Park and Recreation standards. Where lighting is appropriate and provided, it should be treated consistently throughout the City of San Diego segment of the river corridor, in light source, fixture type, and fixture finish and color. The overall conceptual approach to illuminating the trail should 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, particularly into adjacent habitat and residential areas. Lighting design should identify aspects of the goals of the International Dark Sky Association (IDSA) and Illuminating Engineering Society of North America (IESNA) that are appropriate to the San Diego River Park.

The overall lighting approach, including light source type (color) and fixture types, will be solidified as San Diego River Park planning advances to a more detailed level of design. Lighting design should emphasize uniform, unobtrusive illumination with a subtle emphasis on trail intersections and access points.

Determine light source color

Metal halide (MH) is recommended for its true color rendering; this type of light source does not cast a ‘color’ over the objects it lights. Reaction time and color recognition are considerably higher under white light sources such as metal halide. In addition, metal halide lighting generally requires lower light levels than other non-white light sources, because of the true color it offers. Transitioning between white and non-white light sources presents concerns regarding safety, function and aesthetics, and should be considered if more than one light source is considered.



Pole Lights should be full cut-off

Select standard high-performance light fixtures

A fixture palette that allows lighting to respond to adjacent conditions (urban, naturalized) should be selected for each application: pedestrian pole lighting, pedestrian walk lights, step and wall lights, etc. These fixtures may be standard or custom-designed, but should coordinate with each other. Fixtures should create an unobtrusive appearance that allows the focus to remain on the Park, rather than the furnishings in it. Round fixtures and round metal poles are recommended for their relative unobtrusiveness in daylight. Bollard-type light fixtures can present significant problems of glare and cut-off, and for this reason are strongly discouraged.

In addition to a specific fixture, each application should also have a specified mounting height. To control glare, spill light, and ‘sky glow’, all fixtures should be rated full cut-off by the Illuminating Engineering Society of North America (IESNA).

In remote locations, solar powered lighting should be used. Consider use of solar generated power for lighting throughout the San Diego River Park.

Luminaire reflectors should be faceted rather than hydro-formed, to ensure high reflectivity and high performance control of light distribution patterns. High performance luminaires will require fewer fixtures and less overall energy use.

Material finish and color should be determined and used consistently throughout the City of San Diego section of the San Diego River Park. Finish and color should be subdued, consistent with other San Diego River Park metal work along the corridor, and consistent with City of San Diego Park and Recreation standards for developed parks.

Recommended standards:

- Pedestrian Pole Lights: 12’ mounting height
- Pedestrian Walk Wash Lights: “drive-over” style low surface mounted
- Special walk conditions: step and wall mounted



Drive over light example

Signage

The invisibility of the river is striking, and the Foundation's simple initiative to sign the road crossings of the river has greatly increased awareness of the river in the community. Other opportunities exist to support the increased awareness, perhaps the I-8 should be renamed the San Diego River Freeway. At the very least every crossing and every creek and canyon should be identified.

Three general types of signage are anticipated within the San Diego River Park and along the San Diego River Park Trail. These types include Identity & Interpretive Signage, Directional Signage, and Regulatory Signage.

Identification of the San Diego River at crossings should continue and be expanded to identify the river at both edges and both sides of each crossing, and where they are not yet been installed, in cooperation and assistance with local government and Caltrans. If funding is not available from these agencies, private funding should be raised. The signs should highlight the presence of the river and include the San Diego River Park logo consistent with the existing signs. This program should be expanded to identify each canyon and creek where they intersect with roads and where they flow into the San Diego River.

Identity & Interpretive Signage:

- Consistent graphics and symbols
- Expand as needed to provide additional depth of information
- Consistent mounting height and sign surface material
- Consistent mounting system, based upon standard kiosk
- Establish a poster program to provide public information about the San Diego River Park at all trolley stations near the San Diego River

The signage system should reflect a consistency that links individual signs into a larger system and creates an immediate recognition in the user. Consistent graphics, type styles and signage structure offer this consistency.

Directional Signage:

- Consistent graphics and symbols
- Consistent detail of information
- Consistent size, mounting height and sign surface material
- Variety of mounting systems, appropriate to location
- Mount on 2" dia. galvanized steel pipe

Regulatory Signage:

- Manual Uniform Traffic Control Device graphic symbology system for standard signs
- Consistent graphics and symbols for San Diego River Park specific signage
- Mounting heights per code where applicable, or consistent with directional signage
- Variety of mounting systems consistent with directional signage



San Diego River Signage



City of San Diego Kiosk

Kiosks, Waystations, and Site Furnishings

Kiosks should be installed at key entry points along the San Diego River Trail. They should be of a consistent design to identify the kiosk as part of the San Diego River Park and include a location map and appropriate information. To ensure that the kiosks will be maintained and updated, as necessary, signs should be sponsored by local community groups or the San Diego River Park Foundation. Initial efforts should concentrate placement on the multi-use path on the south side of the river from the Robb Field Skate Board Park to Pacific Highway. The San Diego River Park Foundation and the Friends of Mission Valley Preserve have received funding to install an additional kiosk (or possibly two) at Mission Valley Preserve.

The City of San Diego Park and Recreation standard kiosk is recommended for San Diego River Park use, offering immediate recognition and connection with the City's other parks.

Incorporate the following materials suggested in the conceptual plan as detail elements into the standard kiosk design to better integrate the standard kiosk into the distinct character of each reach.

Estuary:

- Natural finished wood or recycled wood product, bleached
- Sand, ceramic tile, glass and small rock

Lower Valley:

- Painted or galvanized steel in urban locations.
- Natural finished wood or recycled wood product, similar to kiosks
- Sand, ceramic tile, glass and small rock

Confluence and Upper Valley:

- Natural finished wood or recycled wood product, similar to kiosks
- Painted or galvanized steel in urban locations
- Ceramic tile and glass

Gorge:

- Wood to match Mission Trails Regional Park system
- Native sandstone where applicable
- River Rock

Plateau:

- Natural finished wood, similar to kiosks
- Painted or galvanized steel in urban locations
- Sand and native boulders

Maintenance

Maintenance is essential to the long term success of the San Diego River Park. Visible, ongoing maintenance activities demonstrate a high degree of care and ownership, underlining a level of attention that discourages vandalism and increases security. Maintenance includes day-to-day activities such as trash pick-up, landscape care, habitat management, and repair of damaged furnishings such as trash containers, bicycle racks and benches, and event-responsive activities such as flood damage repair.

It is anticipated that public agencies will provide maintenance activities on portions of the river corridor that are within their ownership. Land in private ownership may require alternative approaches, such as donations from adjacent development, volunteer efforts, and/or maintenance assessment districts. One maintenance assessment district, the First San Diego River Improvement Project (FSDRIP) already exists in the river valley. FSDRIP funds maintenance through assessment of adjacent properties within the district boundaries. This mechanism may provide a model for other parts of the valley to fund ongoing maintenance of the river, trails, and San Diego River Park furnishings.

Volunteers are another key component of an overall maintenance strategy for the San Diego River Park. The San Diego River Park Foundation has spearheaded many volunteer efforts throughout the valley to restore, enhance and maintain the area. Such volunteers are a key component of an overall maintenance strategy for the San Diego River Park, and will require ongoing coordination by public agencies and volunteer organizations. Developing a comprehensive maintenance program, including potential funding mechanisms, should be a part of the development of each implementation project.

Sustainable Design

A sustainable design approach seeks to reduce the negative impacts of development on the environment while providing for the health and comfort of people. The basic objectives are to reduce consumption of non-renewable resources, minimize waste and create healthy environments. Strategies for sustainable design include a focus on site, energy, materials, waste management and building environments. Applying a sustainable approach means that decisions made at each step of the design process consider the overall impacts of the project on the environment over time. By taking an integrated approach, all phases of the life cycle of a project are considered, from design through construction, operation and maintenance.

Sustainability is vital to the future health of the San Diego River and is at the essence of creating the San Diego River Park. Incorporating sustainable design principles into all new public and private development along the river will go along way toward ensuring the future health and vitality of the river and the valley. Sustainable practices such as capturing and treating run-off on-site before releasing it into the river system, reducing surface parking and paved surface areas, green architecture, and energy saving elements such as wind and solar energy and shade devices.

The use of recycled and local materials in all construction, and limiting irrigation in landscaping and parks through the use of native and xeriscape planting schemes is also encouraged.



A community clean-up at Mission Valley Preserve

Plant Groups

The use of native plants should be encouraged. The color and texture of these materials are important to unify the valley as a place. In the Open Space Corridor, all non-native vegetation should be eliminated. Re-vegetation should use only native plant species.

Three types of planting groups are proposed to establish a hierarchy of vegetation from a pure native community to a hybrid community appropriate for developed areas. These three groups include a Native Habitat Species List, a Buffer Species List, and an Urban Species List. A complete listing of each group can be found in the Appendices.

The Native Habitat Species List is designed for the open space corridor, and includes mixed willow woodland and chaparral/coastal sage scrub species. The Buffer Species List is appropriate for the zone between the open space corridor and bordering development; this selection of plants may also be used in the trail corridor. The Buffer Species List includes riparian and chaparral transition species. The Urban Species List should be used in developed areas, including streetscapes. This group focuses on native species, but also incorporates appropriate non-invasive ornamentals for shade, diversity and interest.

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Implementation

Implementation Priorities

For the recommendations described on the previous pages to become a reality, clear direction for the next step toward implementation is essential. The implementation strategies identify key steps to be taken early on, and must be flexible enough to accommodate an extended timeline to achieve the improvements. A phased approach will allow both flexibility and prioritization of implementation. This approach is intended to be conceptual, as many of the elements cannot be implemented until specific projects are further defined and approved.

Phasing

Proposed implementation consists of two phases. Several factors influence and determine phasing, including relative importance, ability to proceed and current ownership of land.

Phase One identifies steps that may be taken immediately and builds upon existing momentum to create visible change within the river corridor. The reach-specific Short Term Recommendations identified earlier in this document provide further information on more immediate actions. It also identifies priority sites where action should be taken in the near term, due to development pressures, or the long lead time necessary to initiate change.

Phase Two addresses elements of the Park that are likely to require substantial funding and/or land acquisition to implement. Many of these projects may also require significant physical infrastructure improvements. It also includes elements that will require substantial study to confirm the feasibility of the recommended action.

Phase One

Phase One includes some of the most immediate and identifiable actions toward developing the San Diego River Park and Trail. This effort focuses on developing specific projects on publicly owned land, initiating discussions toward acquisition of new lands, and establishing easements on key sites held in private ownership. Phase One projects are organized into the following categories: River Pattern and Water Quality Improvement, Habitat/Natural Area Enhancement, Park Development, Trail Development, and Land Acquisition. This phase also seeks to create a distinct, unique identity for the San Diego River Park and the San Diego River Park Trail.

Water Quality and Hydrologic Improvement

Improving water quality and the hydraulics of the river are closely associated with the development of parks and open space. As land within the corridor redevelops, or is acquired for public use, specific river improvements can be designed and implemented.

Incorporate Planning Principles in all future documents

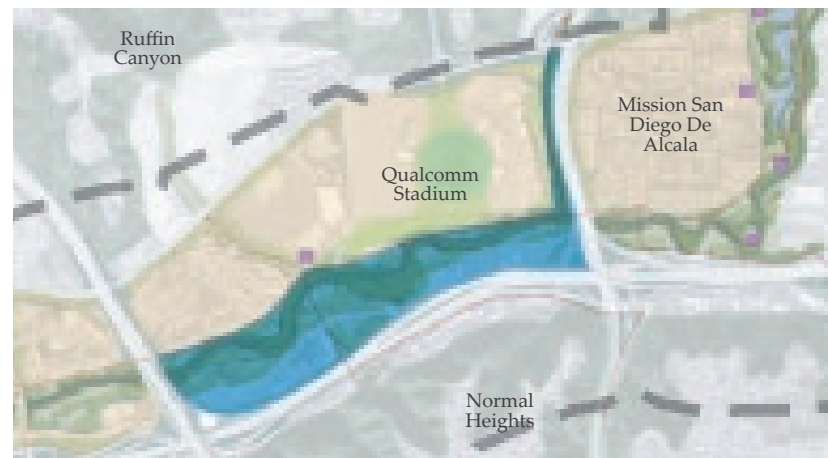
- Reduce/eliminate areas of impervious surfaces
- Enforce pollution elimination programs that have already been created such as the San Diego Watershed Urban Runoff Management Plan and the City's Municipal Separate Storm Sewer Service Program components
- New development planning should incorporate Best Management Practices for all aspects of impacts to hydrology and water quality

Develop specific study within Mission Valley Preserve to improve river hydraulics.

- Coordinate with Mission Valley Preserve to re-contour the river channel as a broad corridor to lengthen the river, reintroduce meander and braiding, and increase the riparian zone of the river.

If Qualcomm Stadium redevelops, improve river channel through proposed park.

- Coordinate with Qualcomm redevelopment and San Diego River Natural Resources Master Plan.
- Incorporate channel improvements in the park and open space design. Re-contour the river channel as a broad corridor to increase the river length, reintroduce meander, and increase the riparian zone of the river corridor.



Coordinate with Mission Bay and Landfill study to prepare feasibility study to investigate the relationship between Mission Bay and the River and identify opportunities to improve water quality and hydrologic function for both.

- The San Diego River historically terminated at the Pacific Ocean with a tidal estuary delta that stretched from Mission Bay to San Diego Bay. The location of the main channel mouth varied as

conditions in the delta changed, with the river's mouth shifting between San Diego Bay, False Bay (now Mission Bay), and the Pacific Ocean itself. Today, the channelization of the San Diego River has restricted movement of the mouth and reduced the tidal estuary to only a fraction of its former size, severely limiting opportunities for continued renewal of the tidal estuary.

- This Master Plan recommends a feasibility study to evaluate the reconnection of the San Diego River and Mission Bay.

Potential benefits of reconnection:

- Increased water circulation within Mission Bay
- Increased opportunities to expand critical estuary habitat
- Increased opportunities to expand biodiversity and biomass
- Increased recreational opportunities via trails and interpretive areas

Potential impacts of reconnection:

- Increased sedimentation rates within Mission Bay
- Increased contribution of pollutants to Mission Bay from the river
- Lack of consistency with Mission Bay Park Master Plan

The feasibility study must address these key issues. The study should include a detailed hydrologic/hydraulic simulation of various connections as well as a simulation of anticipated sedimentation and water quality change. A hydrologic circulation model of Mission Bay should be constructed in order to evaluate inputs from a new connection. The study should also include estimates of habitat increases and suggested methodologies of restoration actions.



Habitat/Natural Area Enhancement

Expanding and enhancing wildlife habitat is closely associated with river pattern, water improvement, park development, open space and trail easements, and the removal of exotic plant species. A corridor-wide vegetation management approach will minimize weed seed sources and help to control expansion of non-natives. Increasing awareness of the impact of non-native species is critical to expanding support for implementation of vegetation management plans.

Coordinate with ongoing development plans to integrate the San Diego River Park into these Plans.

- Superior Mine
- Riverwalk Golf Club

Incorporate vegetation management issues into interpretive programs throughout the corridor.

- Coordinate with Mission Bay Park and Mission Trails Regional Park interpretive systems to include information regarding the impacts of invasive non-native species.

Continue to remove exotic vegetation and replant with native species

- Support implementation of the San Diego River Natural Resources Management Plan
- Coordinate resources to support the San Diego River Park Foundation efforts to implement vegetation management plans and removal of exotic vegetation and further research.

Create a specific plan for Mission Valley Preserve to improve riparian and upland native plant environments.

- Support existing actions already underway with Mission Valley Preserve
- Prepare detailed plan to coordinate San Diego River Park Trail alignment, wildlife habitat and expanded interpretation within the Mission Valley Preserve

Coordinate development of vegetation management plans with private landowners.

- Develop management plan that can be provided to private land owners throughout the corridor to be incorporated into their landscape maintenance programs
- Provide support to private land owners to implement vegetation management plans

Establish a River Open Space Preserve in the river corridor on public lands between I-805 and I-15

- Coordinate with Caltrans and other public agencies to aggregate land as protected open space.
- Initiate specific study to identify means and design

Park Development

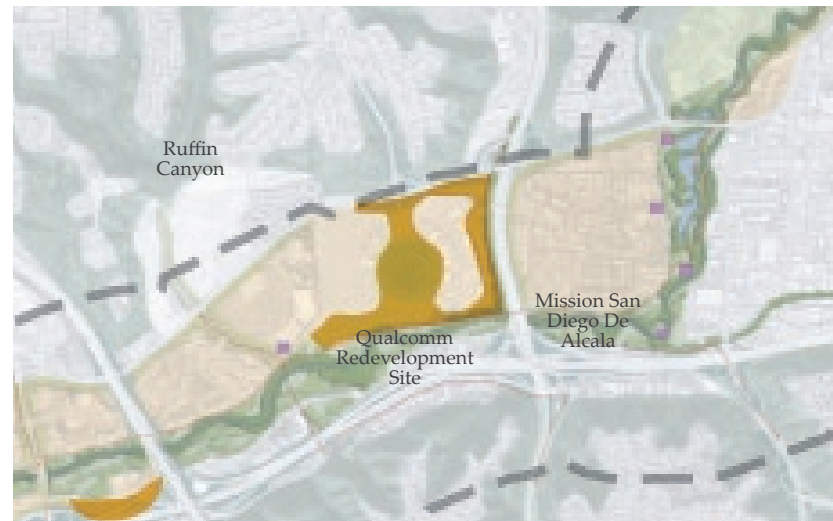
With the exception of Qualcomm Stadium, all land in preferred park locations and with high potential for park development is in private ownership. If the stadium redevelops, land for open space and park uses should be set aside adjacent to the river, adjacent to I-15 and internal to the site. The Lower Valley Reach Recommendations treat this topic in further detail.

Develop conceptual plan for active/passive recreation and natural park at Qualcomm Stadium.

- Coordinate with Qualcomm Stadium redevelopment plans to include active park uses (i.e. on the existing stadium site) with passive uses closer to the trolley alignment and primarily natural open space between the trolley and the river

Begin dialogue with landowners to negotiate acquisition of land within the corridor.

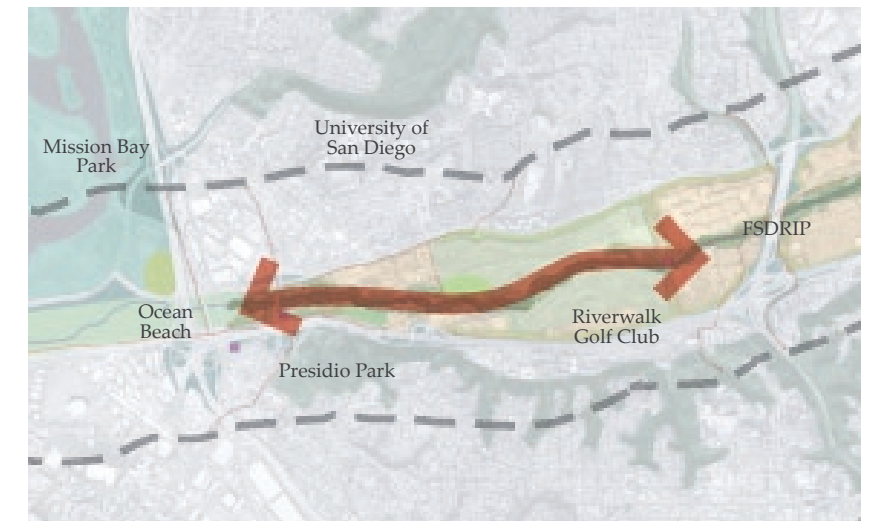
- Seek a 10 to 15-acre site within the proposed Riverwalk redevelopment of Riverwalk Golf Club for a neighborhood park serving the development and adjacent neighborhoods
- Seek a minimum twenty-acre site for passive/natural park use near Admiral Baker Golf Course and Superior Mine to serve adjacent neighborhoods and to be a major identity site for the San Diego River Park

**Trail Development**

Establishing a continuous trail within the river corridor from the ocean to the City of Santee is a critical component of the Plan. This trail is the best means for people to access and learn about the river, the wildlife habitat it provides and the vision of the San Diego River Park.

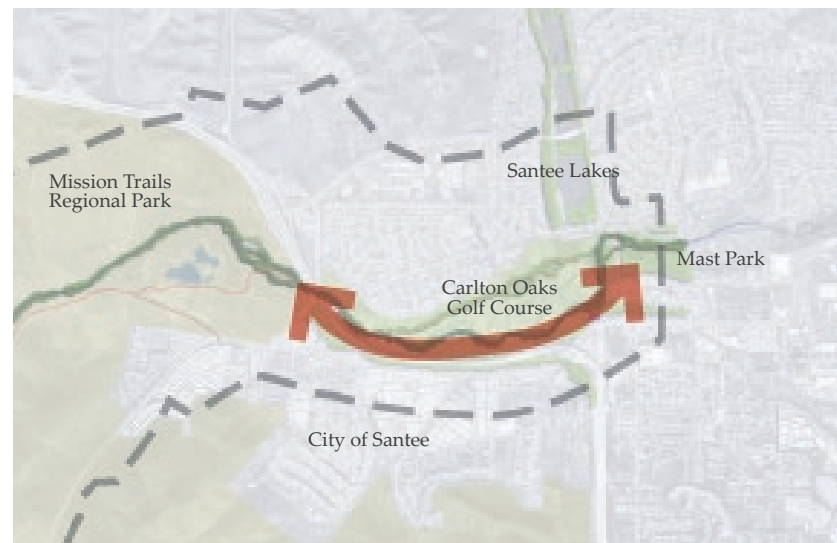
Construct trail segment linking Ocean Beach Bicycle Path with existing First San Diego River Improvement Project (FSDRIP) Bicycle Path.

- Coordinate with San Diego Bicycle Master Plan and Mission Valley Community Plan
- Key connection between Mission Bay Park and Mission Valley residences and businesses including hotels.
- Initiate specific study of alignment through Mission Valley Preserve following the trolley bridge alignment with connections to the existing trail head.
- Initiate dialogue with land owners and Mission Valley Transportation Development Board to negotiate trail easement following trolley alignment through Riverwalk Golf Club



Design and construct trail segment from Mission Trails Regional Park to Mast Park.

- Coordinate with San Diego Bicycle Master Plan and Navajo Community Plan.
- Negotiate with Carlton Oaks Golf Course to set aside adequate land area for development of multi-use path between golf course and the river on the existing berm.
- Initiate dialogue with landowners of Midwest Television property to identify potential easement or land acquisition to link with bicycle trail in Mission Trails Regional park.
- Coordinate with Mission Trails Regional Park to identify alignment connecting Father Junipero Serra Trail with proposed Carlton Oaks link.
- Prepare specific study to detail trail alignment and identify means of crossing SR-52 to establish connection to Mast Boulevard Trail head. Develop a hard surface Multi-Use Path adjacent to Carlton Oaks Golf Course, and a soft surface Secondary Recreation Trail within Mission Trails Regional Park.



If Qualcomm Stadium redevelops, construct trail from FSDRIP to I-15.

- Coordinate with San Diego Bicycle Master Plan and Mission Valley Community Plan
- Initiate specific study of alignment from FSDRIP to I-805 in the short term
- If Qualcomm redevelopment plans move forward, integrate trail design effort to identify specific alignments in coordination with park and open space development. Include link north to Friars Road and Murphy Canyon

Develop a signage system identifying the San Diego River Park Trail.

- Build upon existing trails. Where historically or locally important trail names exist, incorporate existing name as “part of the San Diego River Trail”
- Install signage at all trail intersections, access points and road crossings
- Graphics should be similar to, and incorporate design elements of, the San Diego River identification signs



Land Acquisition

The majority of the land between Mission Bay Park and Mission Trails Regional Park is privately owned, making open space easements and land acquisition a priority throughout the river corridor. The intent of the Plan is to work with interested and willing land owners to establish the continuity and connectivity that is essential to the San Diego River Park. The Plan identifies several key sites for parks and open space, as well as a general alignment of trails and open space throughout the river corridor. Much of this land is in the floodway and offers limited development potential, such that an easement or purchase could benefit both parties. The Plan is also flexible enough to accommodate opportunities to acquire parcels beyond those identified as open space priorities.

Phase Two

Phase Two identifies longer term actions necessary to develop the San Diego River Park and Trail. This section outlines actions that require further study, may be long term in development due to external factors or long lead times. The Long-Term Recommendations matrices contained in each reach section contains additional information and supporting actions.

Coordinate with implementation of development to integrate the San Diego River Park into these private development planning efforts.

Superior Mine Site

While ongoing mining operations may continue for as long as twenty years, increased property values, possibly due to the amenity offered by an adjacent San Diego River Park, may encourage earlier redevelopment of this site. Preliminary planning efforts are studying the economic and physical potential of the site. Preliminary planning efforts have identified this location as a potential technology-oriented office/manufacturing site; this use would create a large number of jobs within the surrounding community, a benefit that has garnered public support for such redevelopment. Residential development has met with less favor, due in large part to concerns regarding increased vehicle traffic.

The Superior Mine planning process should be closely monitored and coordinated with the goals of the San Diego River Park. Opportunities for acquisition of land in this area should be explored as part of this process.

Riverwalk Golf Club Site

The Riverwalk Golf Club has been under consideration for redevelopment for many years. The Levi-Cushman Specific Plan was approved in 1987, and although some portions of the plan have been implemented, it is likely that changing economic and environmental conditions will require significant modifications to the plan prior to full implementation. The site is important to creating a continuous San Diego River Park Trail for protecting water quality and expanding habitat.

Coordination with the developers and land owners should begin in the short term, with the goal of finding a long-term solution to the challenge of protecting the river and adjacent habitat, improving water quality, providing recreational opportunities, and trail access.

Coordinate with Mission Trails Regional Park to implement trail segment connecting Father Junipero Serra Trail with new trail in Superior Mine redevelopment.

- Prepare specific design of soft surface Pedestrian Trail segment in MTRP.
- Coordinate construction with MTRP.

Future Steps

Environmental Compliance Requirements

The San Diego River Park Draft Master Plan proposes a planning framework that includes guidelines and principles for future planning efforts, as well as an enumeration of necessary studies. The Plan also identifies specific actions and projects that will ultimately lead to a recreation and habitat corridor paralleling the length of the river. These projects are both short and long-term, including immediately implementable actions as well as projects reaching into future decades.

The California Environmental Quality Act (CEQA) requires that a lead agency, the City of San Diego in this case, comply with this Act when considering a discretionary action such as adopting this Plan and amending the City's General Plan. The basic purpose of CEQA is:

- To inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities;
- Identify ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds that changes are feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The implementation of the Plan must integrate the existing regulatory framework, and respond to the Clean Water Act and California Porter Cologne Water Quality Act, the primary federal and state water quality statutes. In the San Diego River Watershed, these statutes are administered by the San Diego Regional Water Quality Control Board. The San Diego Municipal Storm Water NPDES and Regional Water Quality Control Board Basin Plan must also be considered.

The majority of elements proposed in the Plan are presented at a conceptual level. The most appropriate CEQA document that could be prepared for the Plan is a Programmatic Environmental Impact Report (PEIR). The PEIR provides the City with the flexibility to analyze the potential impacts of Plan components that are conceptual and those that are ready to be implemented. The elements of the Plan that should be developed to a more specific level of detail include:

- Bike/multi-use trails, various locations
- Way stations, multiple park entry points
- Cultural interpretation stations/kiosks
- Redevelopment of Qualcomm
- Redevelopment of Superior Mine

Incorporate the San Diego River Park Master Plan into the City's Policies & Regulations

An essential step is to determine the right strategy to implement the San Diego River Park within the City of San Diego. Several options are available for incorporating the River Park Master Plan into the City's policies and regulations. Unlike other City park master plans, the adoption and implementation of the master plan is complicated by the fact that most of the subject property is privately owned. The potential options identified to date, which can be combined, are to 1) adopt the master plan to be part of the Progress Guide and General Plan, 2) amend the affected community plans, park plans, and zoning code, and 3) apply an overlay zone. Further analysis is needed to determine the proper course of action, which includes working with affected community groups and public and regulatory agencies to resolve conflicts with community plans and other relevant documents. For this reason, this Master Plan does not advocate the initiation of any of the implementation steps in this document at this time.

Adopt the Master Plan to be part of the Progress Guide and General Plan

The Master Plan could be adopted as part of the Progress Guide and General Plan, just as the Bicycle Master Plan was recently adopted. The potential problem with this course is that there are some conflicts with the applicable community plans, park master plans, and zoning. The fact that the San Diego River Park Master Plan acknowledges that amendments to those plans are necessary to align these policy documents before some recommendations can be implemented may resolve these issues, particularly for long range projects for which there is time to amend the relevant community and park plans. In other cases where there is more detail in the Master Plan than in community or park plans, such as recommendations on the design or location of a pathway, this detail could be considered a further refinement of existing plan recommendations rather than a conflict.

Amend affected Community Plan, Park Plans, and Zoning Codes

In spite of the potential conflicts, adopting the Master Plan as a whole to be part of the General Plan has benefits. The various affected community plans, park plans, and zoning can then be amended as needed. Adopting the document as a whole ensures that it does not lose its continuity or otherwise become diluted in only writing relevant sections into the various documents, and it ensures the immediate implementation of the bulk of the document. Affected community plans include Linda Vista, Mission Valley, Navajo, Tierrasanta, and East Elliott; affected park master plans include Mission Bay Park Master Plan and Mission Trails Regional Park Master Plan; the Mission Valley Planned District zoning may also be affected.

Apply an Overlay Zone

An additional tool that could be considered to implement the master plan is an overlay zone, as used in the Mission Trails Design District surrounding Mission Trails Regional Park. In this case the master plan could be adopted as guidelines for an overlay zone. An overlay zone can require some projects to obtain a discretionary permit and would require that the projects conform to the River Park Master Plan. The boundaries of the overlay zone would need to be determined in conjunction with the affected communities.

Economic Analysis

It is essential that the existing and potential economic value of properties within the valley be understood. Analysis of the San Diego River Park economic issues should study the project on several levels, including the cost to acquire land and the cost to develop the park itself. In particular, analysis should identify parcels that are undervalued, assess their true economic value and determine their highest and best use. The study should also project how the San Diego River Park may potentially affect property values and return value to the city.

The analysis should address the following:

- direct costs of developing the San Diego River Park and Trail
- direct return benefit to the City
- anticipated benefit of private reinvestment

The analysis should further estimate the secondary economic benefits of developing the San Diego River Park. This study should examine the additional activity the Park will generate, the number of people who will use the Park, and how those users will contribute to the economy the river valley.

Scientific Based Master Plan

The San Diego River Park presents the opportunity for the river and the river corridor to serve as a study area for local and regional science institutions. Scientific undertakings often depend upon shared infrastructure and shared knowledge to develop new fields of study, and the river presents the potential for ongoing, multi-institutional programs.

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

The Scripps Institution of Oceanography, with the assistance of the Regional Workbench Consortium and the support of the San Diego River Park Foundation may be the right organization to lead a multi-institutional science task force. This task force would be charged with developing a framework plan for a science-based decision support system for the San Diego River. The framework plan would structure a multi-disciplinary study program and the basic infrastructure necessary to initiate it. Potential areas of study might include hydrology (water quality, seasonal flow patterns, identify sources of flow, modeling of potential changes to the river course), biology (vegetative and wildlife correlations, wildlife movement, modeling of how these patterns change with the implementation of the San Diego River Park) and climate (wind and temperature patterns and correlation with changes within the valley).

The scientific infrastructure might include monitoring instruments and wireless transmission equipment for real time and off-site access to information. Real-time information could also be made available to San Diego River Park users, so that visitors could understand and interpret conditions as they experience them.

Such joint study programs create the opportunity to engage the wealth of scientific knowledge in the San Diego area in the rejuvenation of the river corridor and to explore the relationship of the river to the Pacific Ocean. These cooperative efforts combine resources toward a whole that is greater than what individual institutions might achieve on their own. A broad scientific program can create a record of the existing condition of the river corridor, and track water quality and habitat improvements as the San Diego River Park becomes reality.

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Appendices

Appendices

- a. Existing Conditions
- b. Hydrology and Water Quality Inventory
- c. Habitat and Wildlife Inventory
- d. Recreation Inventory
- e. Historic and Cultural Resources Inventory
- f. Utilities Inventory
- g. Transportation Inventory
- h. Recommendation Benefit Matrices
- i. Recommended Plant Species
- j. Glossary
- k. References

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Existing Conditions

Introduction

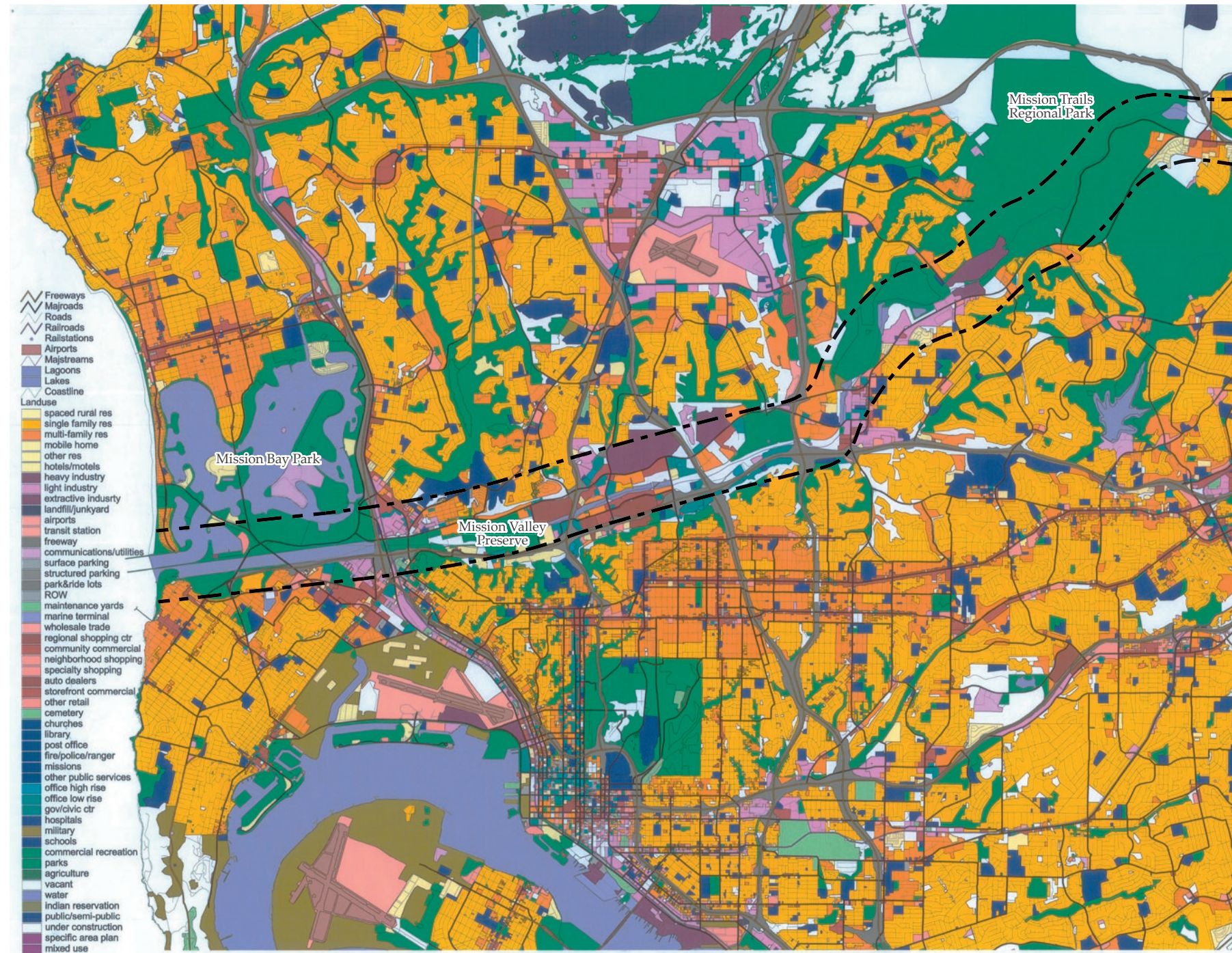
The San Diego River within the boundaries of the City of San Diego exists as a series of diverse habitats, bookended by two major parks, Mission Bay Park and Mission Trails Regional Park. Between these two large open spaces, the river has been impacted and severely altered by mining, flood control and 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 arrundo 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 focussed efforts. A dramatic decrease in property crimes is anticipated as a result of their current operation.



Existing land use map

Executive Summary

Introduction

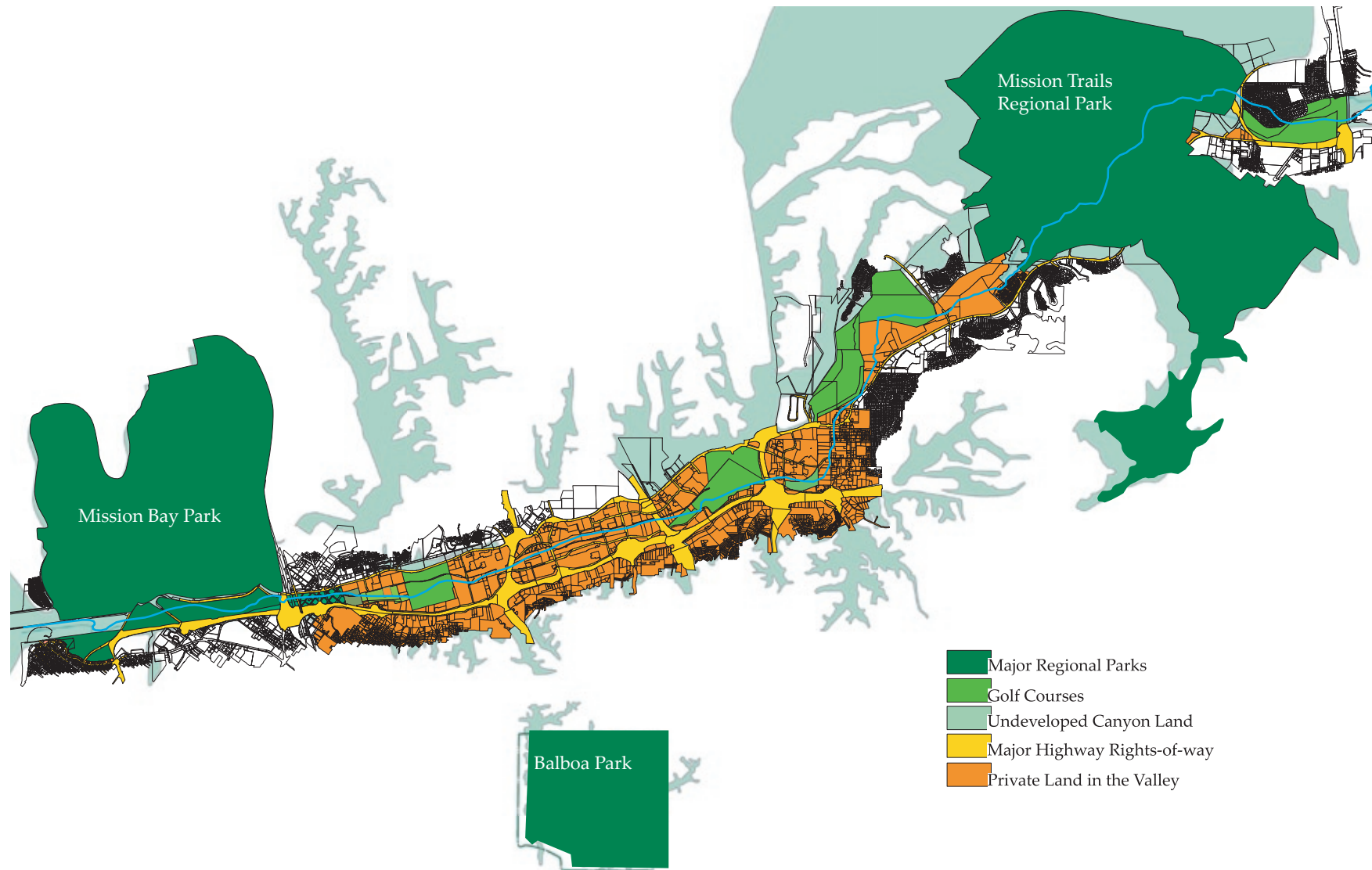
Principles

Recommendations

Design Guidelines

Implementation

Appendices



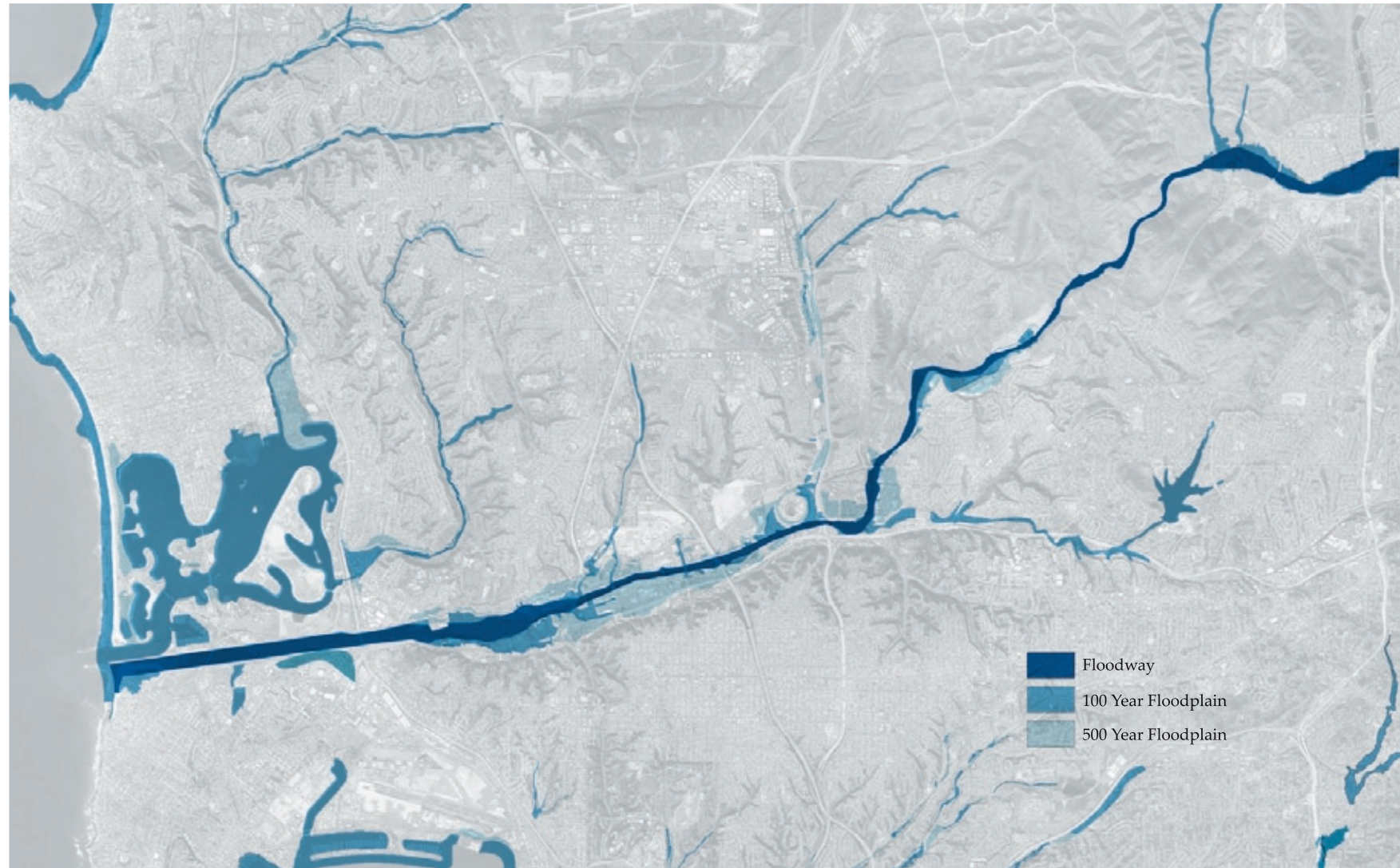
Existing land ownership

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.

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 streamflow and the channel.



Existing floodway and floodplain

Executive Summary

Introduction

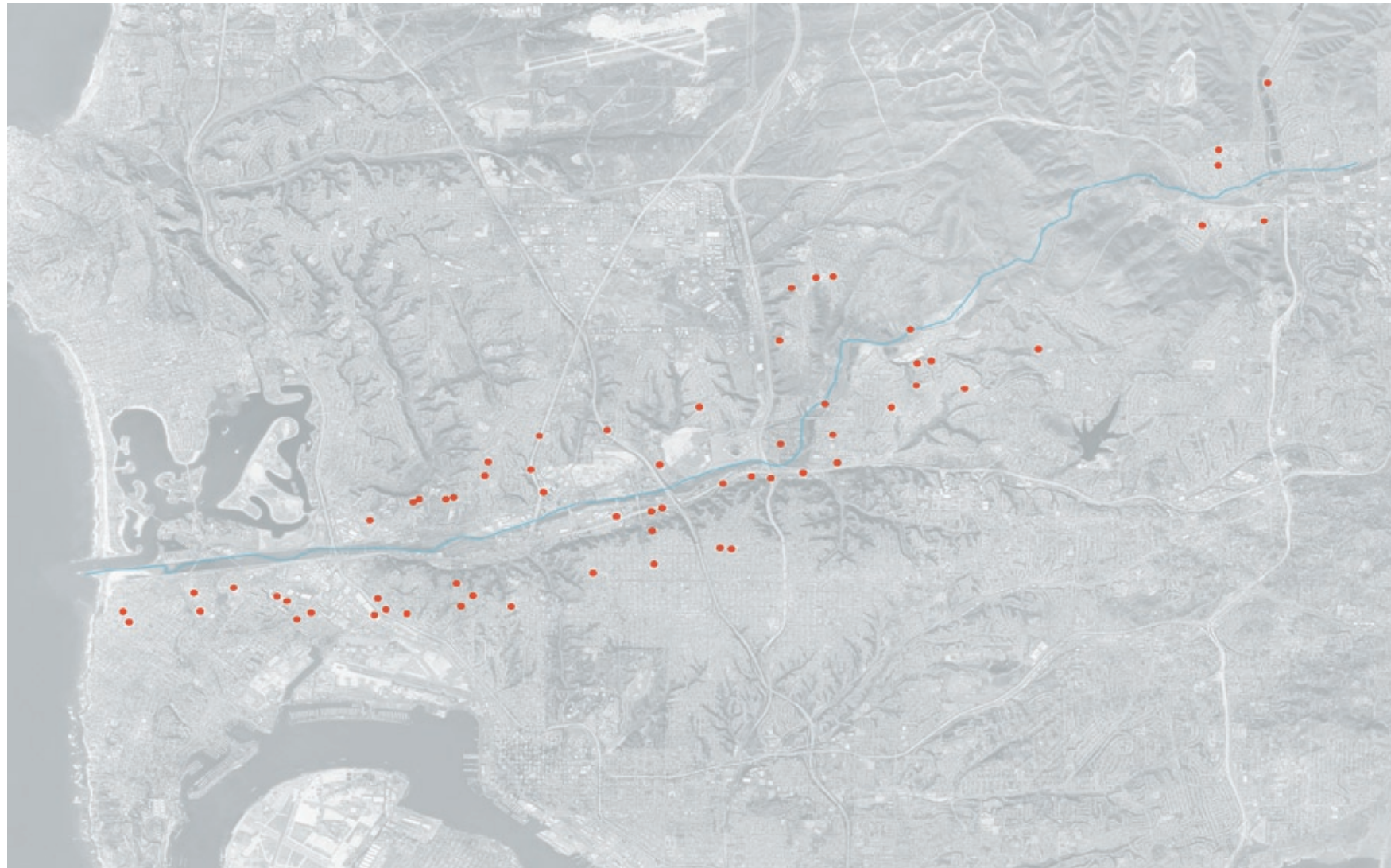
Principles

Recommendations

Design Guidelines

Implementation

Appendices



Existing schools within 1 mile from river

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.

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.



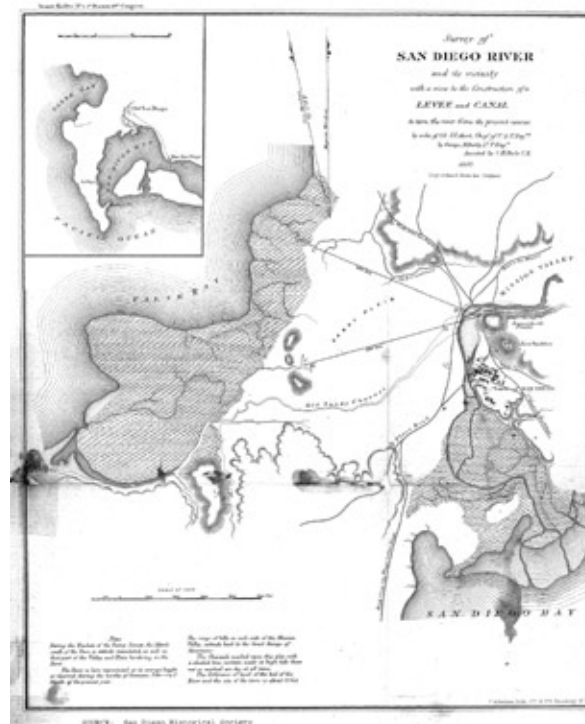
Mission Valley Agriculture in 1916
Source: San Diego Historical Society

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).

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 channelizing 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.

Despite the efforts to control flooding, it still occurs in San Diego because



San Diego River survey 1853



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

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 stormwater 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).

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.

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

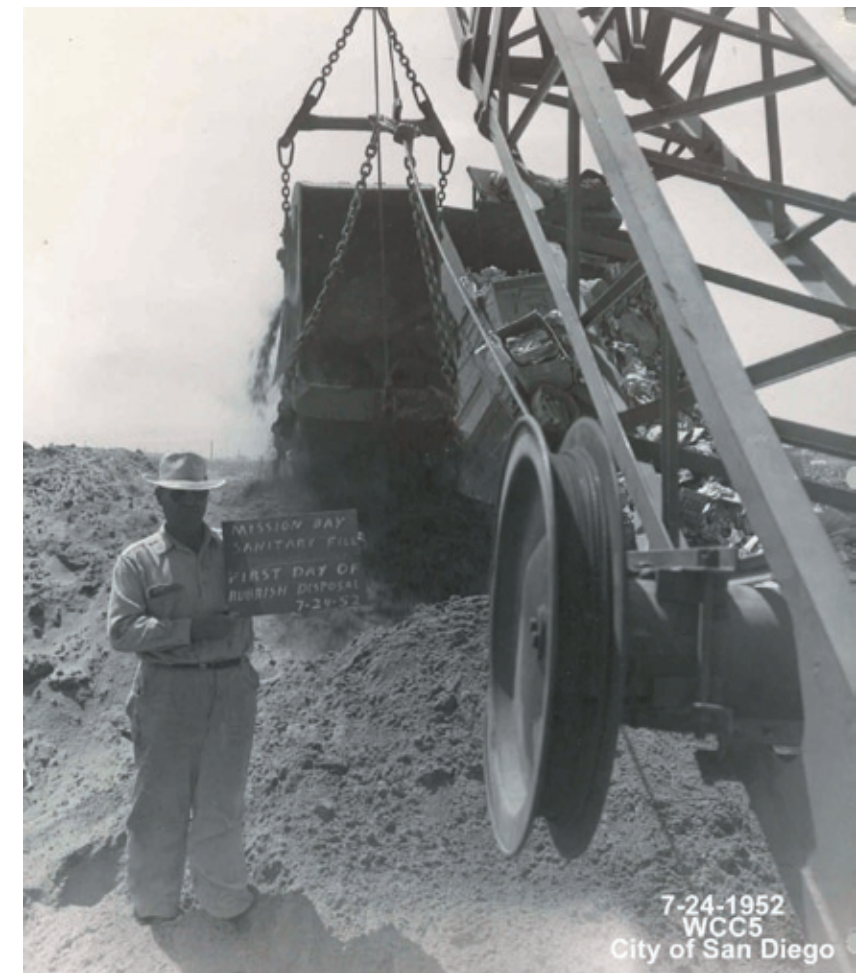
Water Quality and Land Use

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.



Pre-Sanitary Fill Site
Source: 7-17-52 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



MTBE Isocentration Contours
 Source: Levine Fricke - Mission Valley Terminal
 Project No. 002-10143-02
 MTBE Isoconcentration Map and Well Section (A-A') August 2003
 Figure No. 9

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.



Habitat and Wildlife Inventory

Ecosystem Characterization

Executive Summary

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.

Introduction

Principles

Flood Disturbance

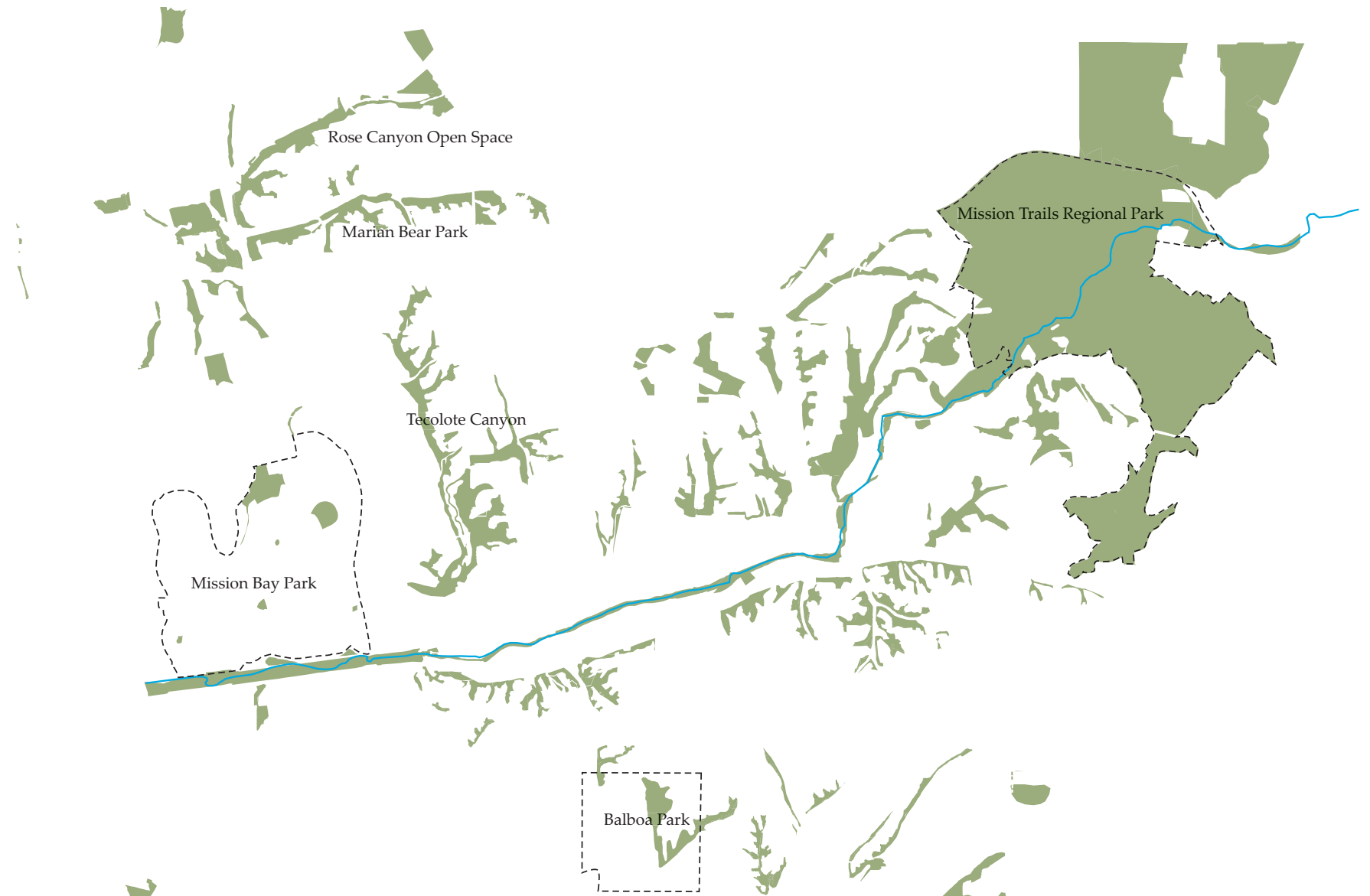
Recommendations

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 overstory 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.

Design Guidelines

Implementation

Appendices



Multiple Habitat Planning Areas

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.

Plant Communities

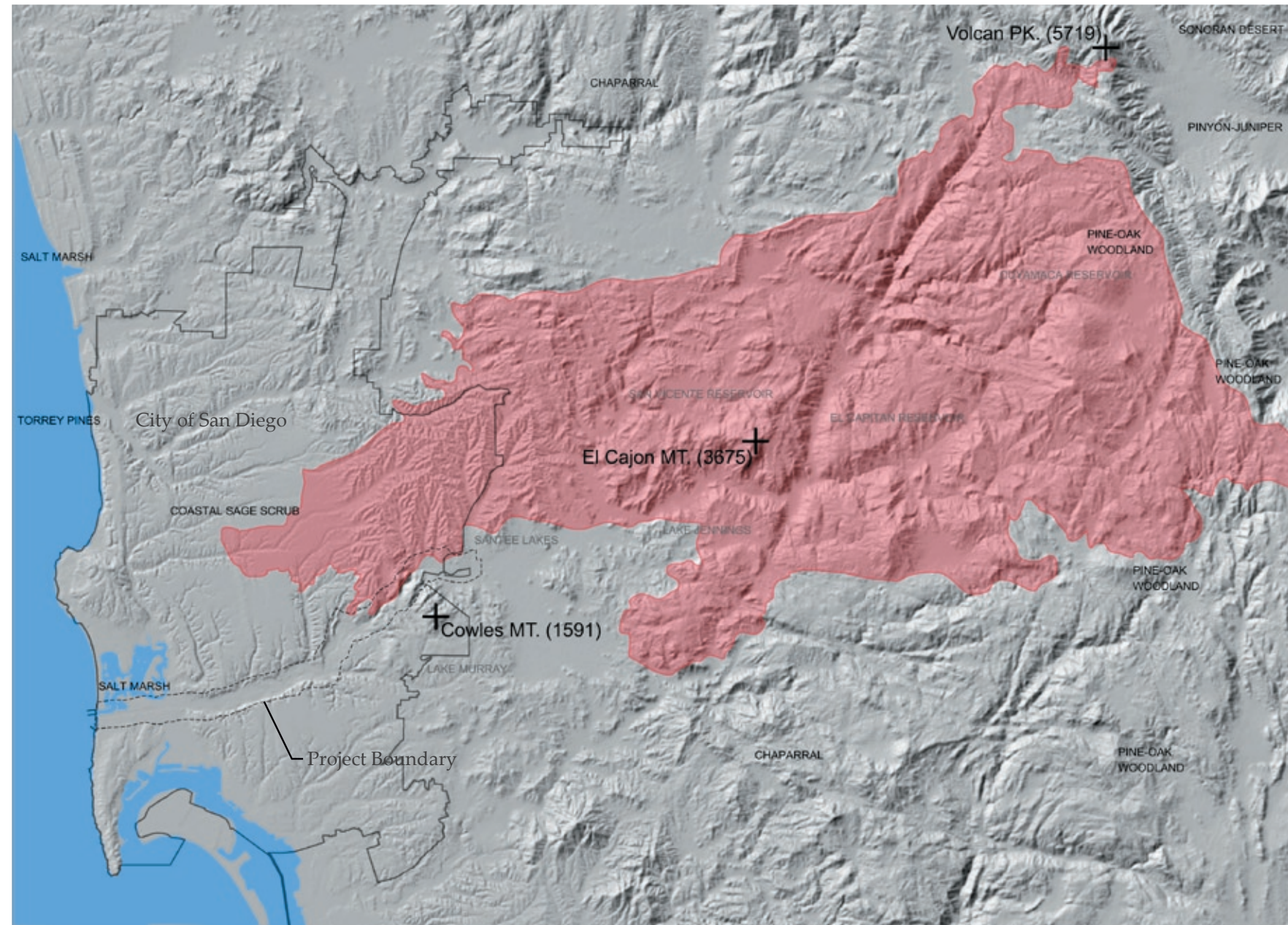
The condition of native vegetation and associated plant communities within the study area falls into three general categories. In the first category are relatively healthy native plant communities in undisturbed areas. The second category consists of developed or disturbed areas with native vegetation, 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.



Cedar Fire Disturbance Area

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.

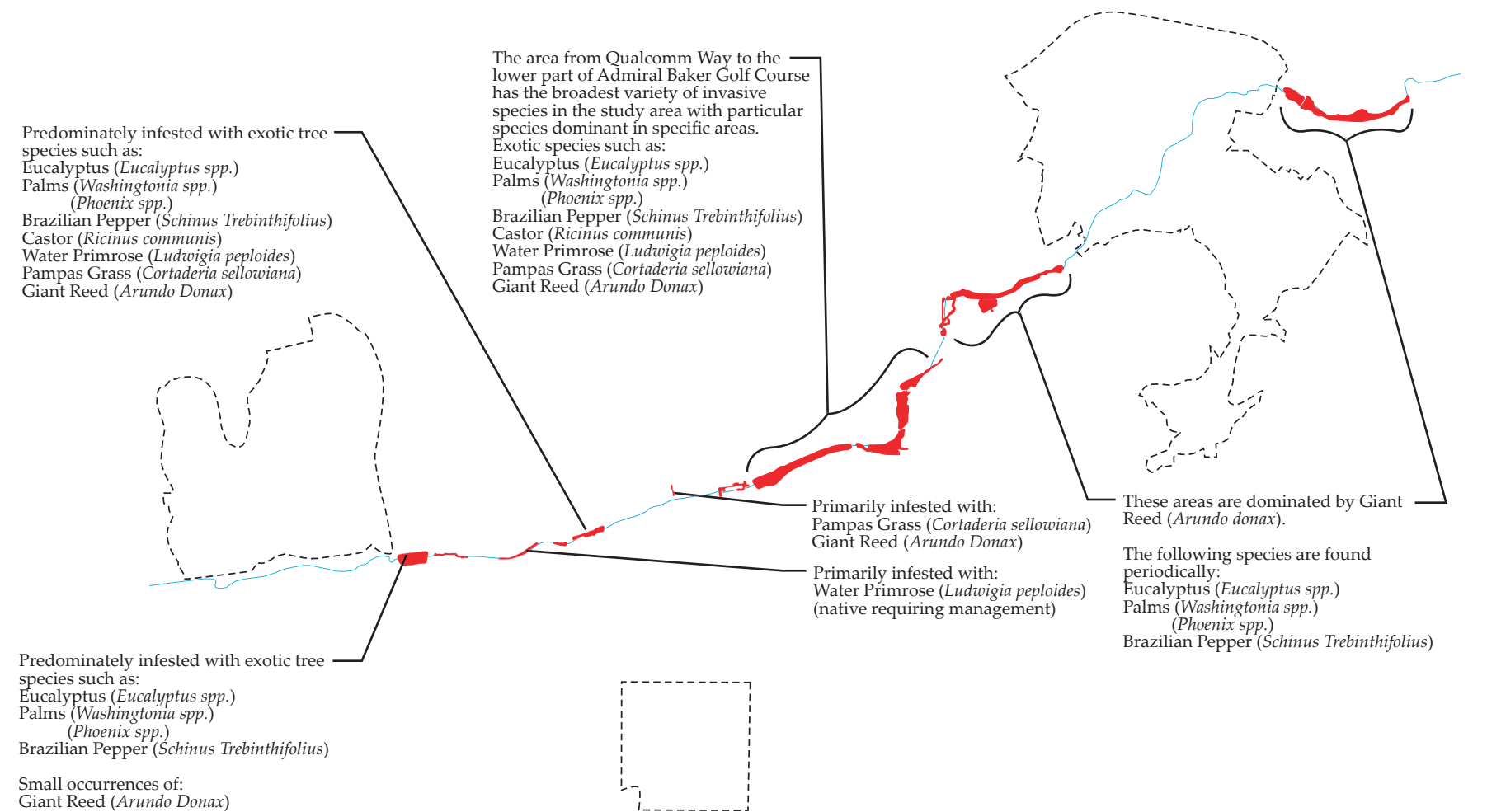
The plant communities identified within the limits of study area—one half mile to either side of the river—are listed below. The descriptions follow the format used by SANGIS, which used the Holland 1995 classification for this dataset. This classification has a broad range of descriptions, including 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.

Plant communities within the study area

- Beach
- Chaparral
- Cismontane Alkali Marsh*
- Coastal and Valley Freshwater Marsh*
- Dense Coast Live Oak Woodland
- Diegan Coastal Sage Scrub*
- Disturbed Habitat*
- Disturbed Wetland*
- Estuarine
- Eucalyptus Woodland*
- Extensive Agriculture
- Freshwater*
- Intensive Agriculture
- Non-Native Grassland*
- Non-Vegetated channel/Floodway/Lakeshore Fringe*
- Riparian and Bottomland Habitat

- Saltpan/Mudflats
- Shallow Bay
- Southern Coast Live Oak Riparian Forest
- Southern Coastal Salt Marsh
- Southern Cottonwood-willow Riparian Forest*
- Southern Foredunes
- Southern Riparian Forest
- Southern Riparian Scrub*
- Southern Sycamore-alder Riparian Woodland
- Subtidal
- Urban/Developed*
- Valley Needlegrass Grassland
- Valley and Foothill Grassland

* Denotes communities that are also in the San Diego River Natural Resources Management Plan



Exotic Vegetation Map



Species of Concern	
Belding's Savannah sparrow	2
California gnatcatcher	47
Grasshopper sparrow	3
Least Bell's vireo	48
Light-footed clapper rail	1
Little mouse-tail	1
Orange-throated whistail	20
Orcutt's brodiaea	2
Quino checkerspot	1
San Diego Mesa-mint	1
San Diego ambrosia	4
San Diego barrel cactus	9
San Diego goldenstar	1
San Diego horned lizard	1
Slender-pod jawflower	1
Tricolored blackbird	1
Variigated dudleya	3
SoC outside of Study Area	*

Plant Communities	
Beach	
Chaparral	
Cismontane Alkali Marsh	
Coastal and Valley Freshwater Marsh	
Dense Coast Live Oak Woodland	
Diegan Coastal Sage Scrub	
Disturbed Habitat	
Disturbed Wetland	
Estuarine	
Eucalyptus Woodland	
Extensive Agriculture	
Freshwater	
Intensive Agriculture	
Non-Native Grassland	
Non-Vegetated channel	
Riparian and Bottomland Habitat	
Saltpan/Mudflats	
Shallow Bay	
Southern Coast Live Oak Riparian Forest	
Southern Coastal Salt Marsh	
Southern Cottonwood-willow Riparian Forest	
Southern Foredunes	
Southern Riparian Forest	
Southern Riparian Scrub	
Southern Sycamore-acer Riparian Woodland	
Subtidal	
Urban/Developed	
Valley Needlegrass Grassland	
Valley and Foothill Grassland	

Species Of Concern

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.

Studies of wildlife movement and resident populations (Integrated Natural Resources Management Plan for Marine Corps Air Station Miramar) suggest that a corridor width of 300' is generally adequate to support resident species of birds and small mammals, while a corridor width of 500' is generally optimum to allow movement of larger, as well as increased resident populations of birds and small mammals. The City of San Diego Land Development Code – Biology Guidelines, Section III Biological Impact Analysis and Mitigation Procedures, recommends that areas of native vegetation that are less than 400 feet wide for a length greater than 500' are considered isolated (p.21). The guidelines further reference the MSCP recommendation that at urban interface edge conditions range from 200 to 600 feet depending on adjacent land uses (p. 21).

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.

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.



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 mouselink	<i>Myosurus minimus ssp. apus</i>
Orange-throated whiptail	<i>Cnemidophorus hyperythrus beldingi</i>
Orcutt's brodiaea	<i>Brodiaea orcuttii</i>
Quino checkerspot	<i>Euphydryas editha 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 blainvillei</i>
Slender-pod jewelflower	<i>Caulanthus stenocarpus</i>
Southwestern pond turtle	<i>Clemmys marmorata pallida</i>
Southwestern willow flycatcher	<i>Empidonax extimus traillii</i>
Tricolored blackbird	<i>Agelaius tricolor</i>
Variiegated dudleya	<i>Dudleya variegata</i>
White-faced ibis	<i>Plegadis chihi</i>

Recreation Inventory

Active Recreation

Recreation Introduction

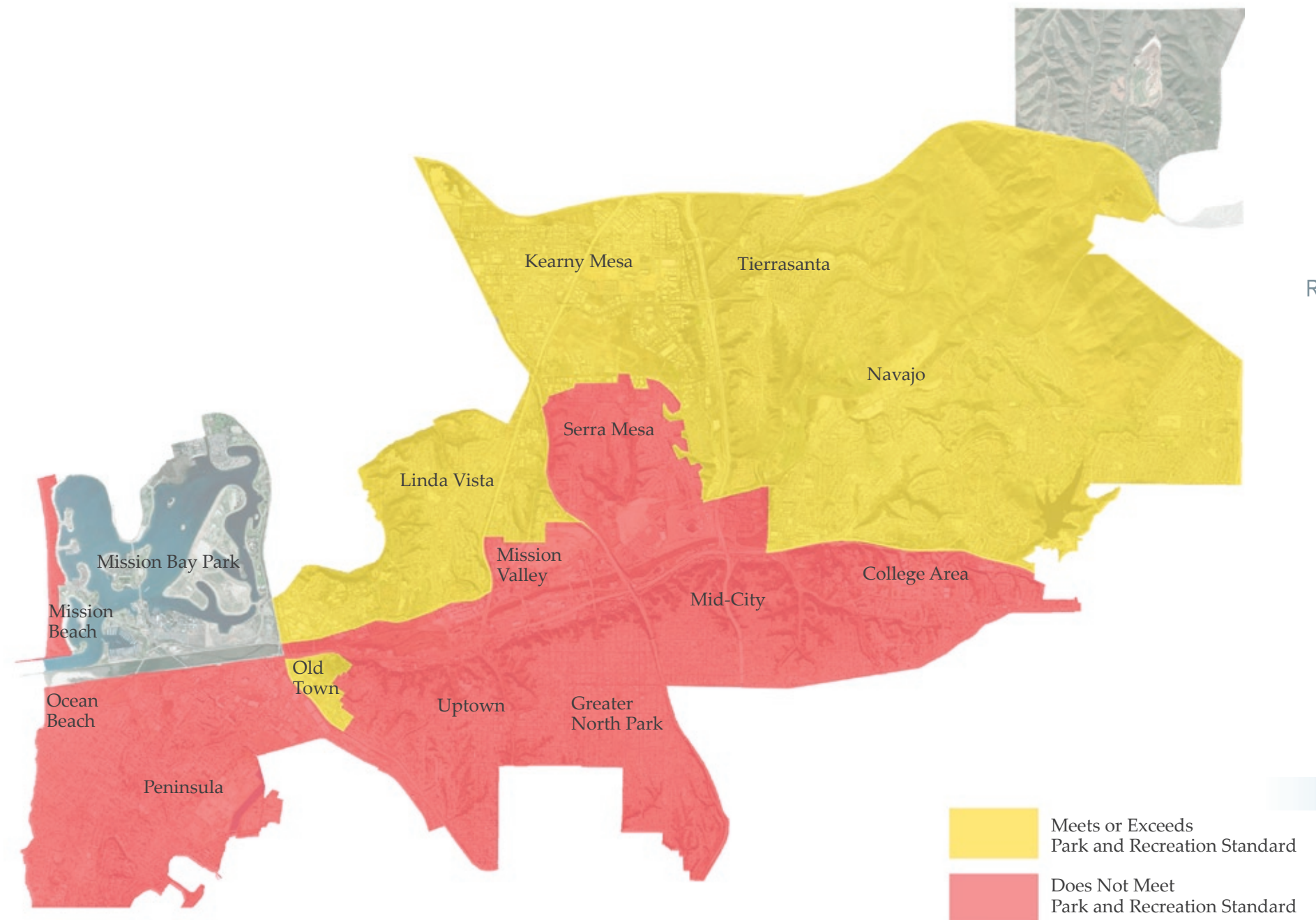
A major objective of the study is to identify the range of recreation opportunities in the river corridor. This section focuses on Active Programmed Recreation—defined as sports facilities, sports fields and parks—parkland suitable for organized sport activities, as well as major circulation trails. Passive recreation, such as nature study, hiking trails, interpretation of cultural sites and other activities related to specific resources are discussed separately in those specific resource sections. To supplement public 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 recreational resource should be a fundamental part of recreation and land use planning in the river valley.

Active 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 fifteen adjacent community planning areas of the City of San Diego. The Progress Guide and General Plan has established 2.8 acres per 1,000 residents as the active park required acreage goal throughout the City. Recommendations for new open space and recreational facilities are focused within corridor. Open, developable land for new parks is very limited throughout these fifteen communities and many of them are at a deficit for active recreation acreage, according to Park and Recreation Department calculations. The river corridor is in concept an appropriate place to provide additional active and passive 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.

An overall goal is to balance active 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 trail, as well as lateral bike and pedestrian paths, can link neighborhoods to the proposed parks and regional recreation facilities.



Executive Summary

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 active recreation planning include the following:

- Define criteria for locating active recreation sites relative to other objectives.
- Identify potential locations for active and passive 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.

Introduction

Principles

Recommendations

Analysis of Recreation within Community Plan Areas

The City of San Diego "Progress Guide and General Plan" provides population-based acreage goals of 2.8 acres per 1,000 citizens, and the Land Development Code sets a standard of 2.8 acres of parkland per 1,000 people. "Community parks", "neighborhood parks" and "mini-parks" are included in the population-based acreage in each community planning area. Community parks are a minimum of 20 acres, but can be reduced to 13 acres if located adjacent to a school with a joint-use agreement. Community parks serve a 1-1/2 mile radius area and contain facilities such as ball fields, playgrounds, hard-courts, gymnasiums, swimming pools and recreation center buildings. Neighborhood parks are ideally 10 acres, although the size can be as small as 5 acres if located adjacent to a joint-use school facility. Neighborhood parks serve a 1/2 mile radius area. Neighborhood parks have smaller play fields, children's play areas, multi-purpose courts and passive park space such as picnic facilities. Mini-parks, defined under San Diego Council policy (Policy #700-34, 1990) as Vest Pocket parks, are small parks designed to provide park facilities in areas "which substantially do not meet General Plan standards". An additional requirement from the General Plan is that one city swimming pool shall be provided per each 50,000 residents. Each city swimming pool serves an area within a 1-1/2 to 2 miles radius.

Design Guidelines

Implementation

Appendices

Using 2.8 acres 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.

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.

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 active recreation needs 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 (Its service area of 1-1/2 mile does not extend to the river corridor study area, but its swimming pool service area of 2 miles does)
- 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 corridor study area:

- Collier Park
- Dusty Rhodes Park
- Mission Heights Park
- Mission Hills Park
- Old Trolley Barn Park
- Grantville Park
- Roadrunner Park
- Rancho Mission Canyon Park
- West Hills Park, Santee

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 are included in the park and recreation inventory.

Regional parks, such as Mission Bay Park and Balboa Park, are not counted in population-based park inventory. City property defined as "Open Space" are areas generally free from development or developed with low intensity uses that respect natural environmental characteristics. Open space 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

The City has over 30,000 acres of City-owned open space, consisting of major open space regional parks, urban canyons and slopes. For instance, significant acreage is under the jurisdiction of the Park and Recreation Department in the Mission Valley north-facing valley slopes.

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

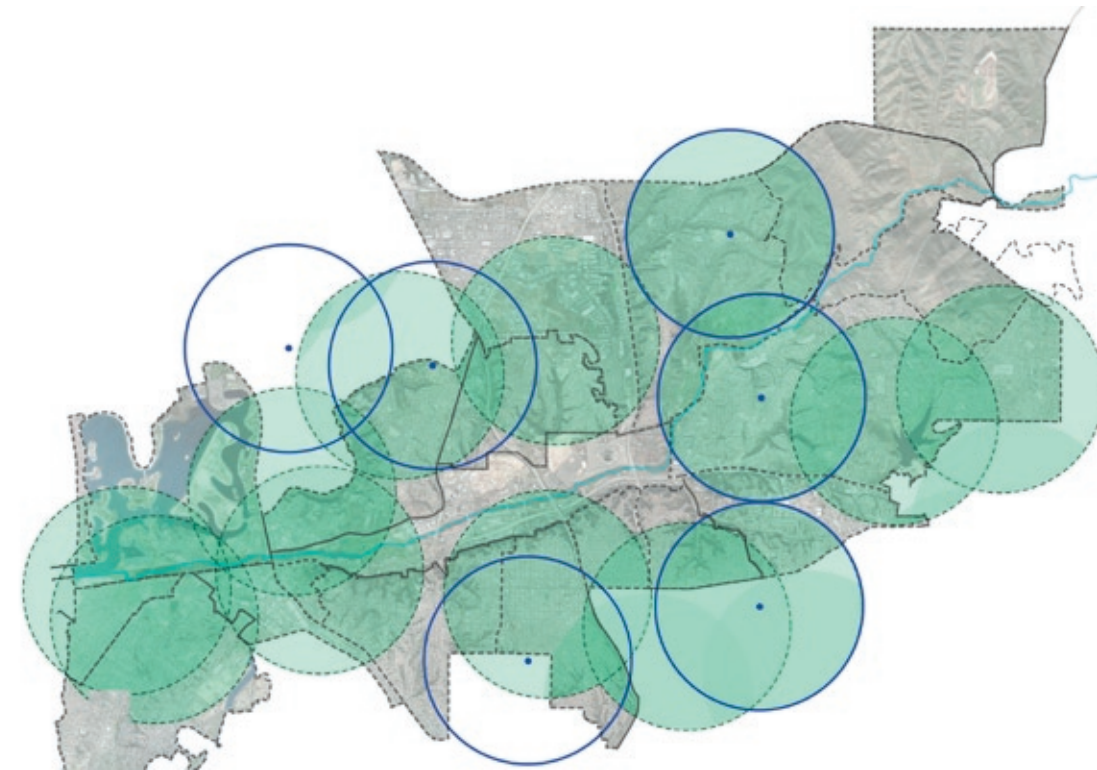
- Caltrans rights-of-way (State, freeway and interchange landscape areas)
- Admiral Baker Golf Course and Park (Federal, Navy golf course, swimming pool, picnic area, community building, gym)
- Army Corps of Engineers (Federal, river and tributary channels, floodways and structures)

Regional or Area-wide need

Although recreation need is currently evaluated within individual communities, the unmet opportunities adjacent to the river produce an overall need for active recreation land of more than 200 acres (even considering proposals within the community plans for new recreation facilities). Using other regional parks as examples—Mission Bay Park, Mission Trails Regional Park and Balboa Park—could a major sports park at Qualcomm or a resource based park in Grantville be justified based on regional opportunities not identified within individual community plans?

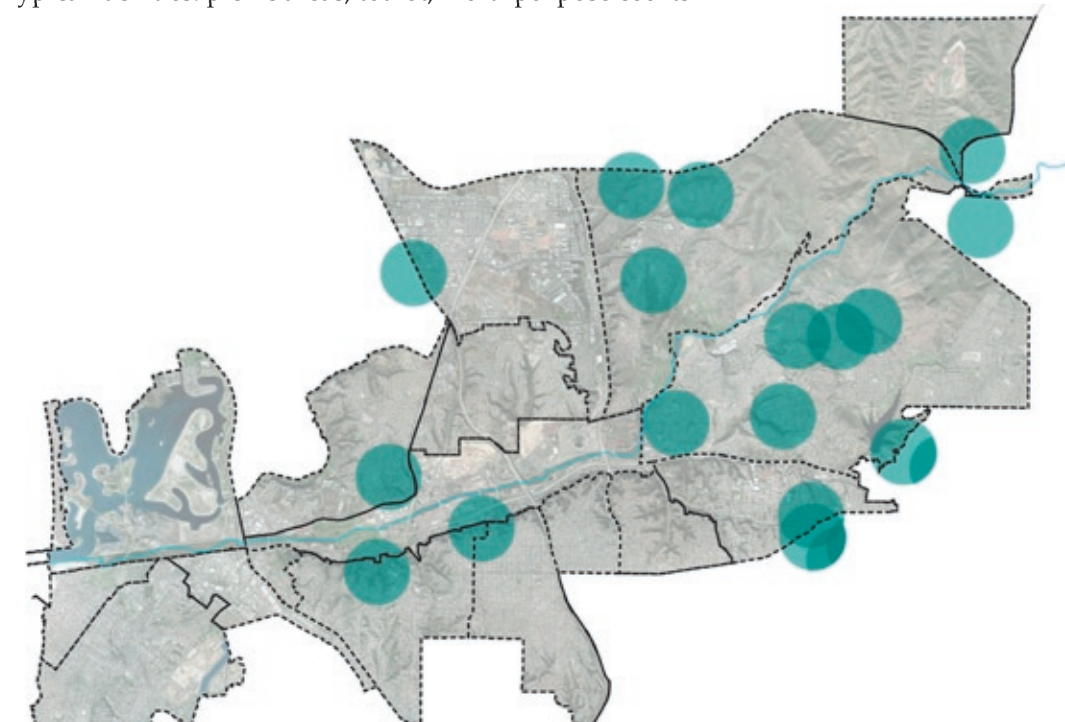
Private Recreation or Recreation Related Facilities

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.



Active Recreation Facilities-Neighborhood Parks

- 3,500 - 5,000 residents within 1/2 mile radius
- 10 acres, reduced to 5 if next to elementary school site
- Typical facilities: picnic areas, tot lot, multi-purpose courts



Active Recreation Facilities-Community Parks

- 8,000 - 25,000 residents within 1 1/2 mile radius
- 20 acres, reduced to 13 if next to junior high school site
- Typical facilities: much the same as neighborhood park, with ball fields and recreation center building

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
- Point Loma and Mission Valley YMCA's
- Sefton Little League Fields
- 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



Trails

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

Trail Goals

- Continuous east to west trail from the ocean to Santee and on through the county.
- 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 trails.
- Locate trails where they provide convenient access and an enjoyable setting.
- Locate trails where they conflict least with habitat and river hydrology.

Existing Circulation Trails

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

Existing trails consist of a multi-use-trail for bicycles and pedestrians in the central part of Mission Valley (completed as part of the FSDRIP), multi-use trails 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 trail.

The "multi-use trail" 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 plan proposes that a pedestrian-only, soft surface trail be on a separate path on the opposite side of the river.

Trail Definitions

City of San Diego

"Multi-use 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 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 trail as generally 10' wide with 2' shoulders and paved to meet ADA standards with concrete, asphalt, "resin pavement" or other similar surface.

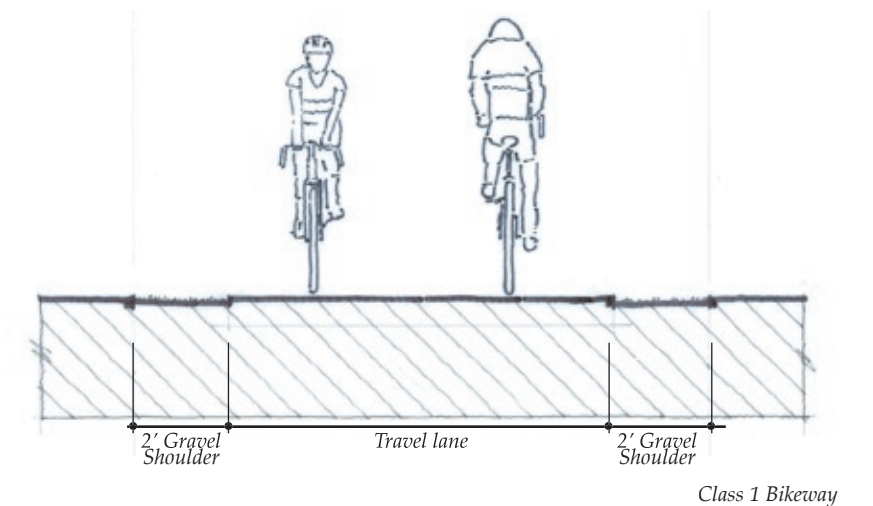
Refer to Design Guidelines for specific trail and path definitions used in this document and proposed by this plan

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.



Passive Recreation and Hiking Trails

Passive recreation refers to enjoyment of the outdoors and the natural and cultural resources of the river valley—as opposed to activities that require sports fields and facilities. This category includes interpretation and education concerning the resources as well as simply walking and hiking for exercise.

Historic and Cultural Resources Inventory

Geologic History

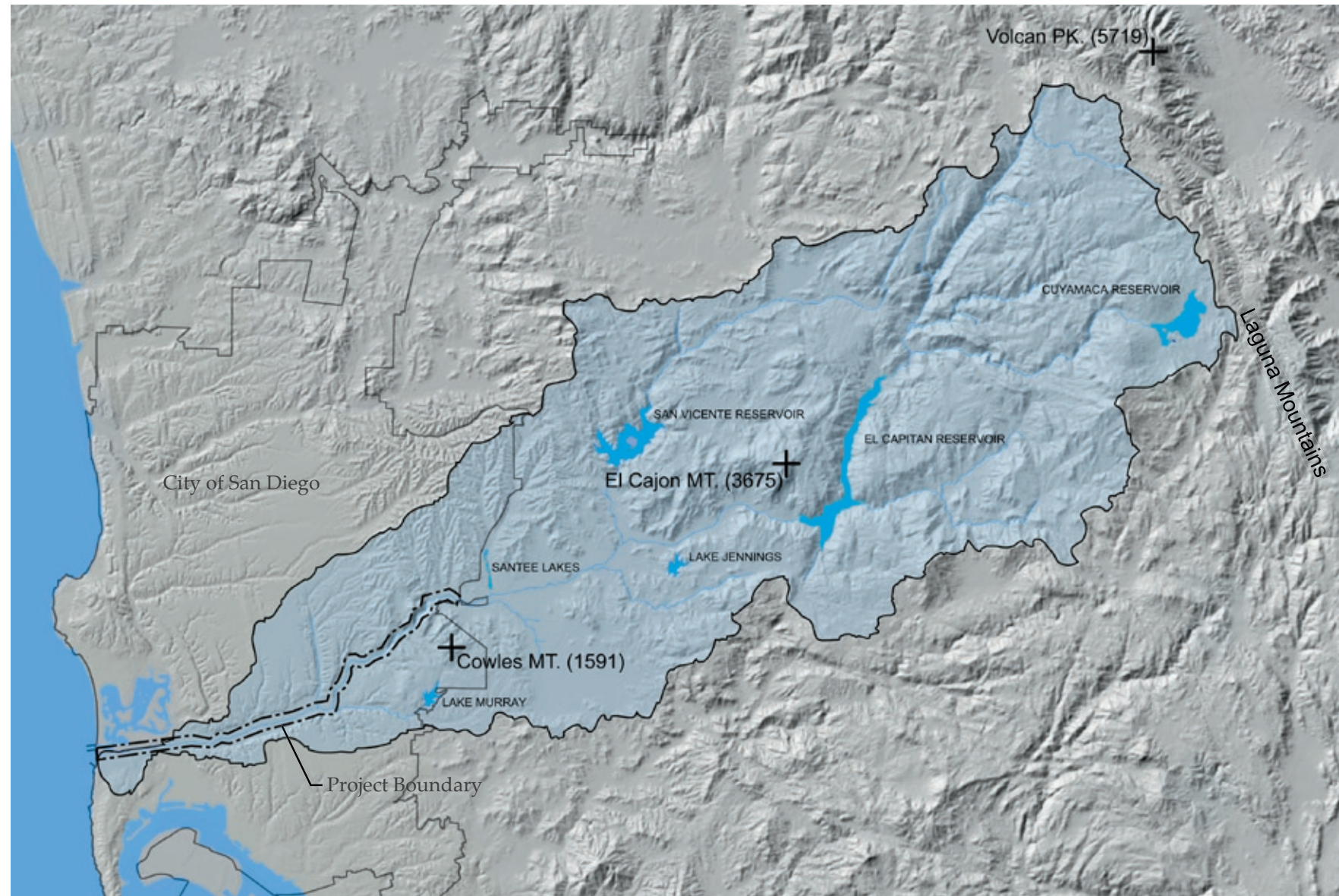
Rivers have been fundamental to the shaping of the earth's surface since vapor first coalesced into raindrops and fell to earth. Since then, by collecting into ever larger and more powerful channels from rivulets to gullies to streams and rivers, water has carved the surface of the earth and redistributed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



Mission Trails Regional Park includes several Kumeyaay sites

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 Alcalá

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 Alcalá 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, and 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.

Opportunities and Recommendations

Use early place names to name places, and include in maps, graphics, and signage.

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 zanjias) 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)
Ferraris
Others

Sand and Mining Operations

Fenton
Hazard

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)

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Executive Summary

Opportunities and recommendations

Interpret recent historic uses and activities, emphasizing value of the river and its impetus to development within the valley. Graphics and maps could show previous land use with signage and interpretation linked to trails and hiking.

Introduction

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)

Principles

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.

Recommendations

Older Place names

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

Design Guidelines

Current Place names

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

Implementation

Appendices



Key historic sites

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 Draft 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.

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 will 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.

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

The San Diego Aqueduct

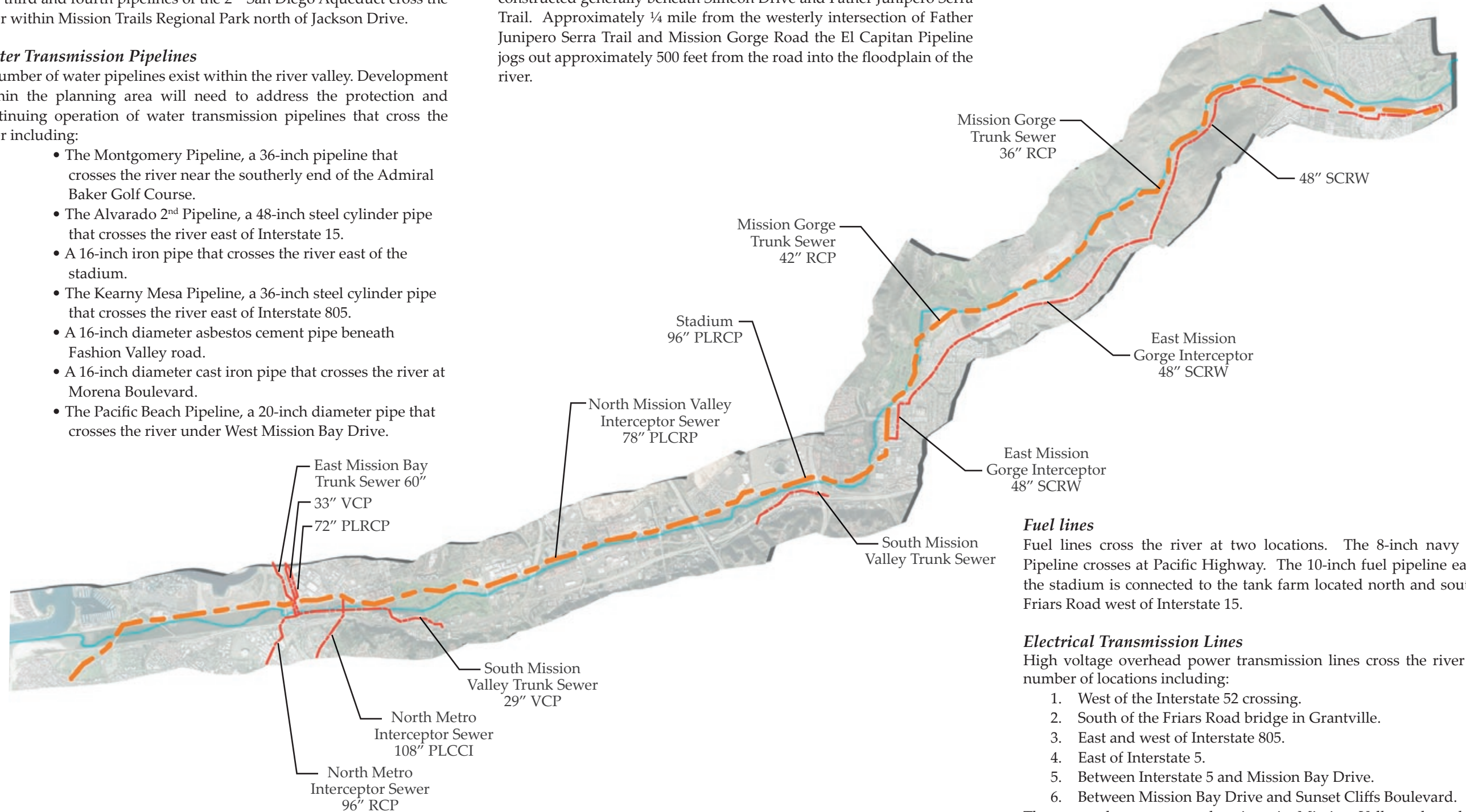
The third and fourth pipelines of the 2nd San Diego Aqueduct cross the river within Mission Trails Regional Park north of Jackson Drive.

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 ¼ 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.

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.

Corridor Description

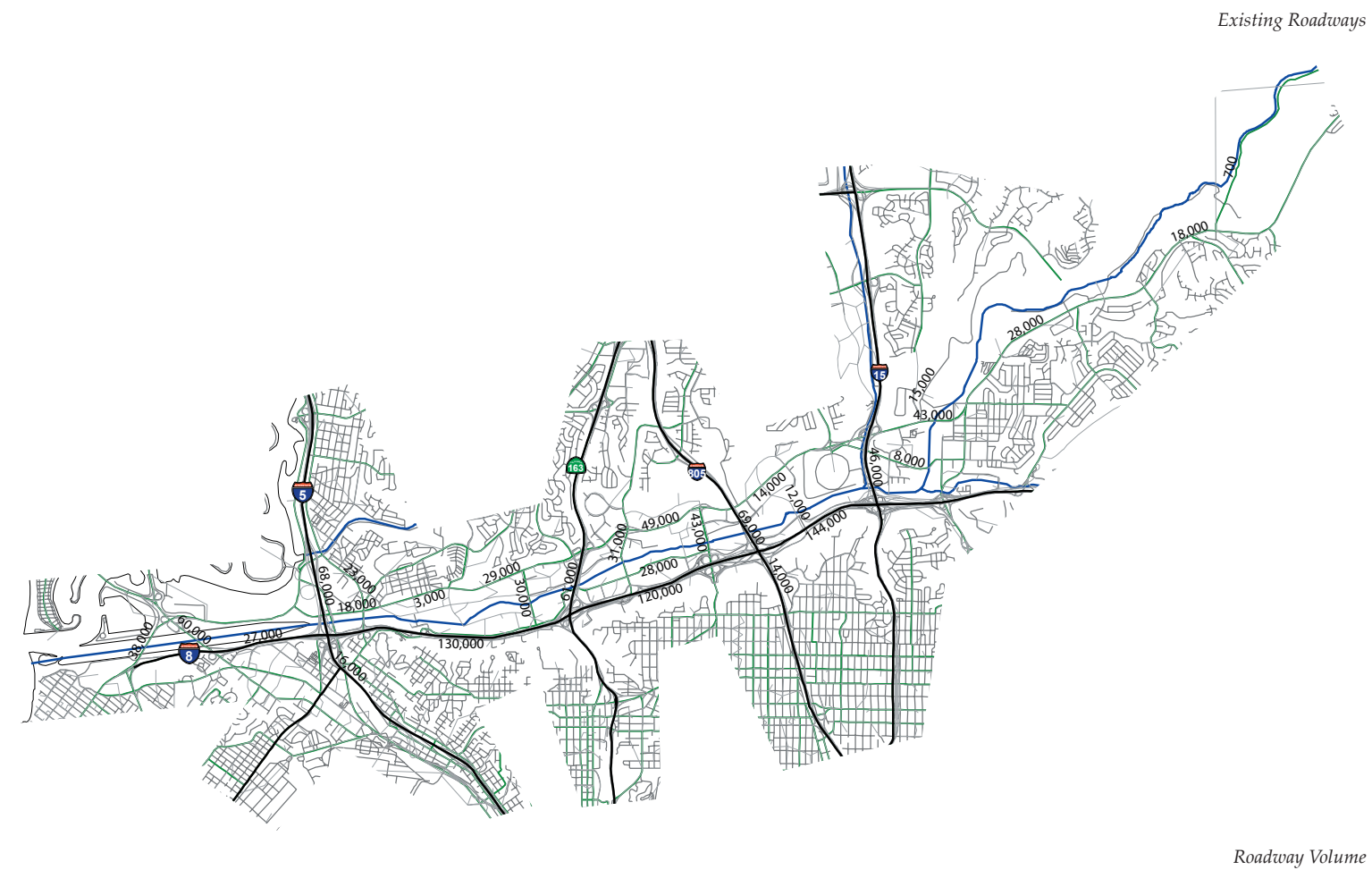
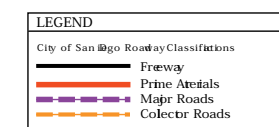
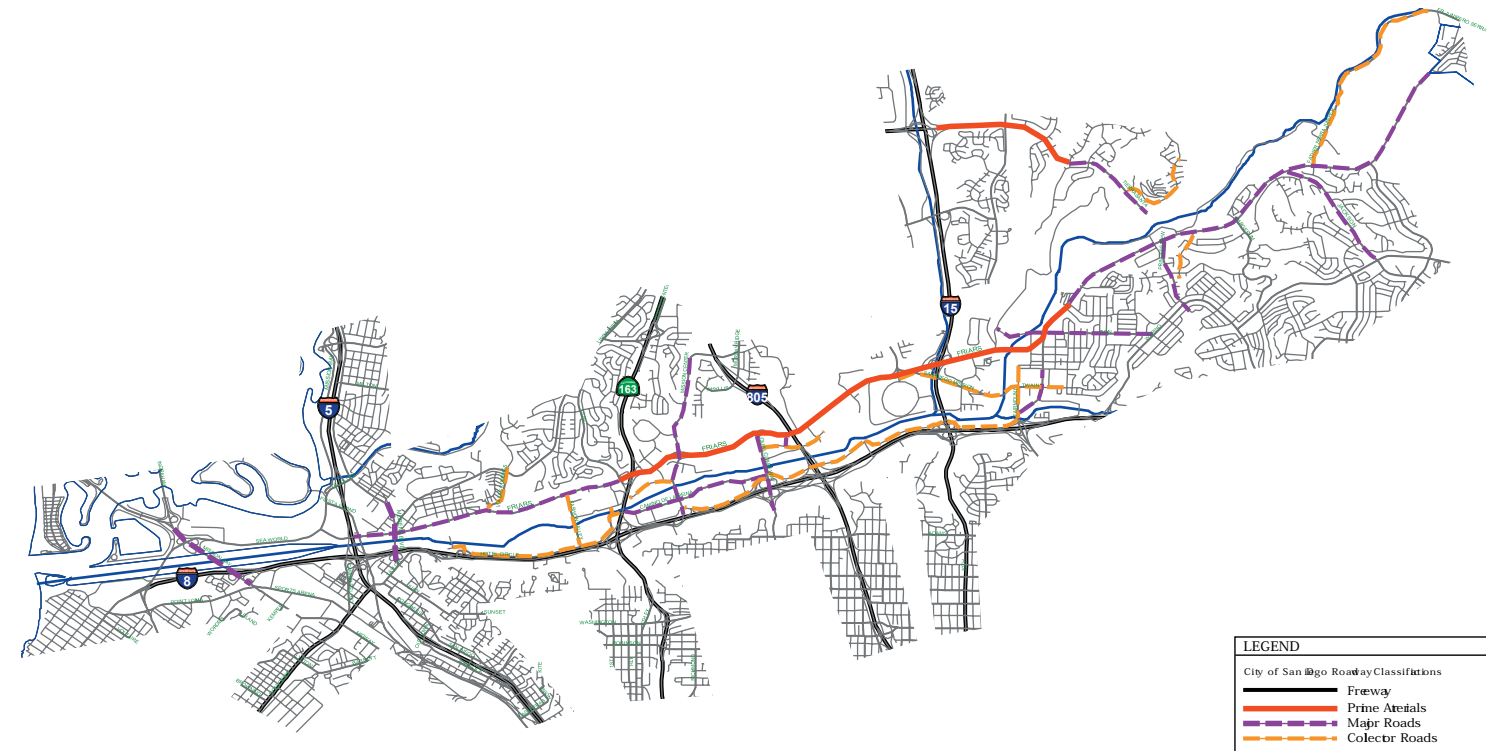
The San Diego River Corridor is characterized by frequent interstate highway crossings and by several major roads running roughly parallel to the river corridor. I-5, SR-163, I-805 and I-15 all traverse the river within a 6-mile segment. A large number of arterial roadways also cross the river; these 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.

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.



Existing Roadways

Roadway Volume

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

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

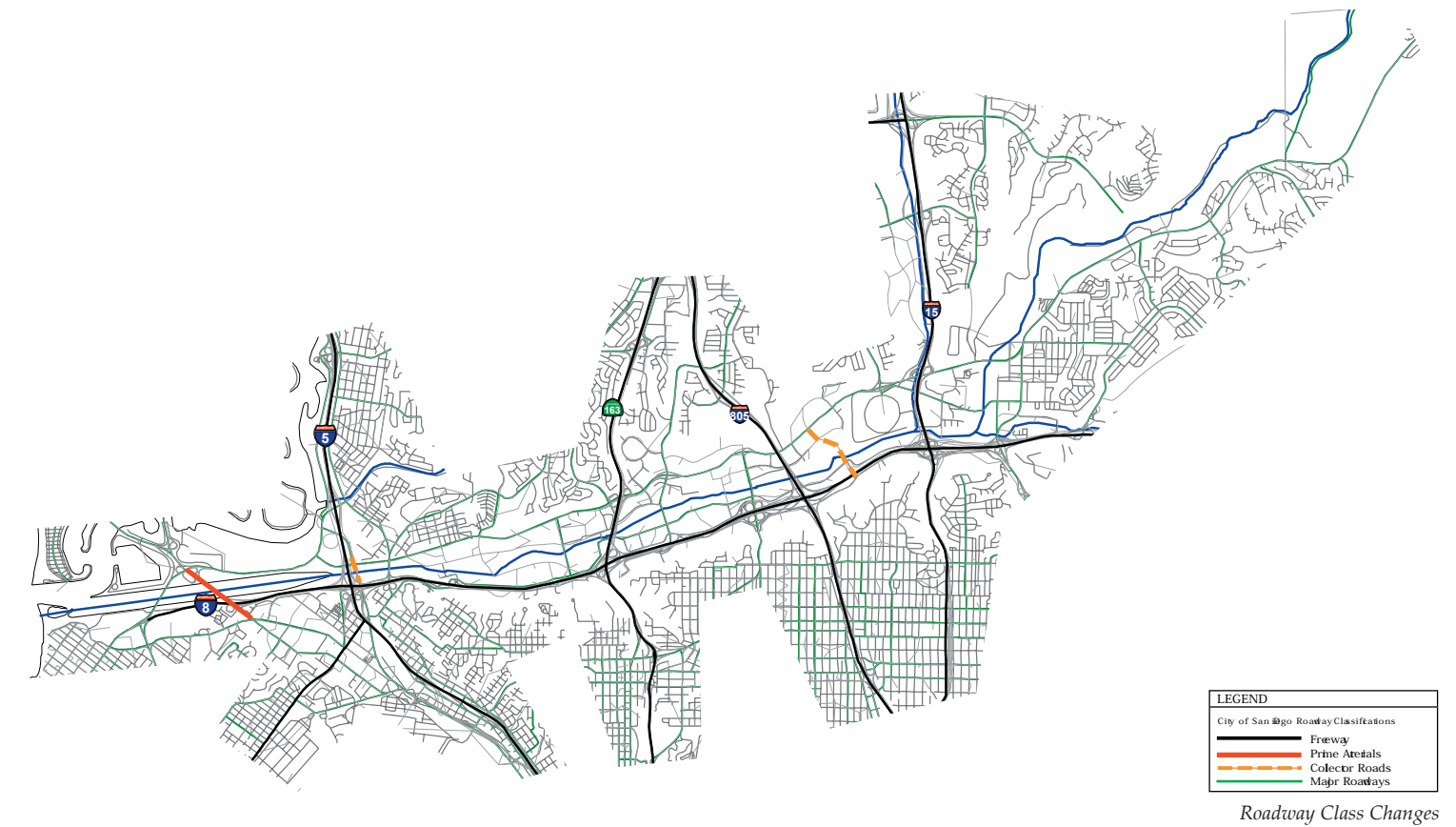
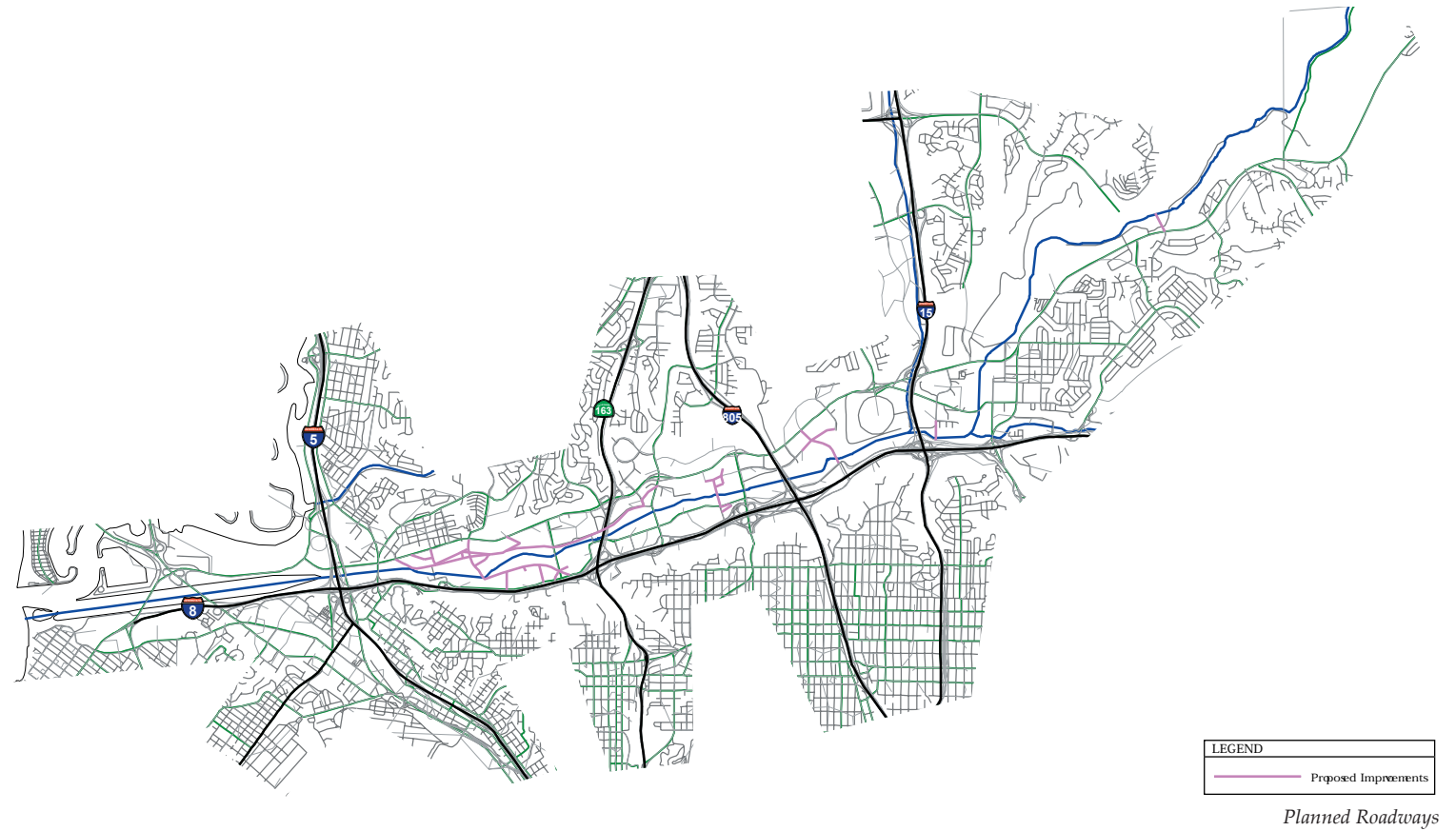
It should be noted that some proposed road improvements are not fully supported by the public and other are not funded. Proposals experiencing these constraints include:

- 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.

Specific Recommendations Matrix with Benefits

The following pages outline the multiple benefits of each recommended action described in the Specific Reach Recommendations section. The benefits are organized into four general categories: Hydrology, Ecology, Recreation and Culture/Education.

[Executive Summary](#)

[Introduction](#)

[Principles](#)

[Recommendations](#)

[Design Guidelines](#)

[Implementation](#)

[Appendices](#)

	RECOMMENDATION	BENEFITS				IMPLEMENTATION
	Short Term	HYDROLOGY	ECOLOGY	RECREATION	EDUCATION	
Executive Summary	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.	Provide a gateway and introduction to the SDRP. Provide a starting point and staging for users of the San Diego River Park multi-use trail. 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.	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.	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.
Introduction	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.			Retains existing recreational amenity for dog owners.		Support appropriate community and special interest groups to manage Dog Beach and integrate it with the San Diego River Park.
Principles	E3S Coordinate with Mission Bay Park to support marsh restoration that is underway.		Restoring marsh will expand estuarine wildlife habitat.		Interpret unique habits, sensitivities and characteristics of estuary function, wildlife habitat and seasonal nesting requirements for sensitive species.	Collaborate with appropriate community groups to install signage in vicinity to provide information and create awareness about estuary function and wildlife habitat.
Recommendations	E4S Create San Diego River Park Trail head, waystation and historic and natural interpretation zone at Robb Field.			Opportunities for staging and access to the San Diego River Park multi-use trail. 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.	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.
Design Guidelines	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.	Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.		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.
	E6S Coordinate with Mission Bay to support marsh restoration that is underway.		Restoring marsh will expand estuarine wildlife habitat.		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 extend feasibility study to explore the potential to modify current plan to consider effect of improving hydrologic systems of Mission Bay and the river. Such a study should identify and develop trail connections from the San Diego River Park to Tecolote Canyon and with Mission Bay Park.
Implementation	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.	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.		Collaborate with appropriate community and special interest groups to explore opportunities to fully utilize land for ecologic, educational and recreational uses.
Appendices	E8S Create estuary overlook platforms along the San Diego River Park Trail at estuary surface level.			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 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).

Short Term	RECOMMENDATION BENEFITS				IMPLEMENTATION STRATEGY		
	HYDROLOGY	ECOLOGY	RECREATION	EDUCATION			
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.	Improving connection will enhance awareness and recreational experience for users of the multi-use river trail. 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.	Executive Summary
E10S	Mission Bay Park interface zone			Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.	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.	Introduction
E11S	Continue San Diego River Park multi-use trail east of the I-5 and create connections from Friars Road to Pacific Highway.			Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.		Coordinate with Community Plan, North Bay Redevelopment Plan and San Diego Bicycle Master Plan.	
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.			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.	Principles
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.	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 trail 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.	Recommendations
E14S	Create recreational trail connection between the San Diego River Park and the San Diego Bay.			Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.		Implement bikeways along Rosecrans Street and Taylor Streets as proposed by the City of San Diego Bicycle Master Plan	Design Guidelines
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.	Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.		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.	Implementation
E16S	Create connection between the San Diego River Park and adjacent neighborhoods to the north.			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.	Appendices

	RECOMMENDATION	BENEFITS			IMPLEMENTATION STRATEGY	
	Short Term	HYDROLOGY	ECOLOGY	RECREATION	EDUCATION	
Executive Summary	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.	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.
Introduction	E18S	Connect Morena Blvd. Bikeway and San Diego River Park multi-use trail.		Connecting the bikeway and multi-use trail 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 trail is down in the river valley.
	E19S	Support and build upon access and interpretation zone at Mission Valley Preserve.		Access to the Mission Valley Preserve from the San Diego River Park multi-use trail 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.
Principles	E20S	Create short term bike trail alignments through Riverwalk Golf Club in the trolley right-of-way		Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.		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.
	E21S	Support efforts to create a Presidio Park Master Plan.				Coordinate with appropriate agencies, community and special interest groups to begin discussions about initiating a master planning effort and to identify potential funding sources.
Recommendations	E22S	Create a Presidio Park entry monument on Taylor Street that incorporates its historic connection with the river.				Coordinate with appropriate agencies and community groups to initiate study to design and locate entry signage on north side of Presidio Park.
	E23S	Remove 1.5 acre area of cobble fill on south side of river under I-5.				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.
Design Guidelines	Long Term					
	E1L	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.	Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.	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.
Implementation	E2L	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.		Coordinate with appropriate agencies and community/special interest group plans for future improvements.
	E3L	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.	Realign bike path along North side of channel and create pedestrian trail.	Collaborate with appropriate community and special interest groups to initiate feasibility study to modify the river channel embankment to create a varied edge with native vegetation.

Long Term	RECOMMENDATION	BENEFITS				IMPLEMENTATION STRATEGY	
		HYDROLOGY	ECOLOGY	RECREATION	EDUCATION		
E4L	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.	Connect San Diego River Park Trail to provide access to Sea World, linking tourist attractions and hotels along the river corridor.		Collaborate with Sea World to engage in their planning process to create awareness of the goals of the San Diego River Park. Encourage better connections and access, use of native vegetation, education about the river, and integration of Sea World as one of the linked amenities of the San Diego River Park.	Executive Summary
E5L	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.	Realign bike path along North side of channel and create pedestrian trail.		Collaborate with appropriate community and special interest groups to initiate feasibility study to modify the river channel embankment to create a varied edge with native vegetation. Collaborate with appropriate community and special interest groups to explore potential to replace Fiesta Island dike with a bridge located north of Tecolote Creek.	Introduction
E6L	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.	Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.	Interpret unique habits, sensitivities and characteristics of estuary function, wildlife habitat and seasonal nesting requirements for sensitive species.	Collaborate with appropriate agencies and community/special interest groups to prepare specific plan and identify funding sources improve estuarine environment.	Principles
E7L	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.			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.	
E8L	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.		Potential to reestablish Mission Bay as part of the San Diego River delta pattern.	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.	Recommendations
E9L	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.	Create multi-use path and open space link to San Diego Bay and bike paths to south.		Collaborate with North Bay Redevelopment as it moves forward.	Design Guidelines
E10L	Create major San Diego River Park access node at Linda Vista and integrate with potential Green Gateway at I-5 and Friars Road.					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.	
E11L	Create San Diego River Trail on north side of river through Riverwalk development.			Connect trolley stations. Connect along Linda Vista Road and Morena to Tecolote. Trail connection Tecolote could be through estuary or along old PCH.		Coordinate with San Diego Bicycle Master Plan and redevelopment of Riverwalk Golf Club. When Riverwalk redevelops coordinate with appropriate agencies, community/special interest groups and land owners to identify trail alignment and development concept that orient to the river.	Implementation

RECOMMENDATION BENEFITS

IMPLEMENTATION STRATEGY

Long Term

HYDROLOGY

ECOLOGY

RECREATION

EDUCATION

Executive Summary

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

Introduction

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. See page 59.		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.	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.
------------	---	--	---	---	--	---

Principles

L3S	Explore potential to acquire under-developed land site. Vacant parcels are an opportunity to create new river-oriented community amenity.			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.
------------	---	--	--	--	--	--

Recommendations

L4S	Create historic interpretation of Kosoy Rancheria and agriculture adjacent to trail.			Linking the multi-use trail 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.
------------	--	--	--	--	--	--

Design Guidelines

L5S	Create trail under SR-163 to connect existing Class I Bike Paths to the east and west of SR-163.			Connecting the San Diego River Park multi-use trail (Class I Bike Path) below Highway 163 strengthens the contiguousness of the multi-trail and improves the recreation experience in the San Diego River Park.		Implement Class I Bike Path below Highway 163 north of the river as proposed by the City of San Diego Bicycle Master Plan.
------------	--	--	--	---	--	--

L6S	Establish Green Gateway along SR163 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.			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.
------------	---	--	--	--	--	--

Implementation

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.	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.
------------	--	--	---	--	--	---

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.			Initiate dialogue with Caltrans and appropriate community groups to explore means of changing right-of-way plant palette.
------------	---	--	--	--	--	---

L9S	Explore potential to connect FSDRIP bike trails across intersections with grade separated crossings on northside of river.			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 trail.		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.
------------	--	--	--	--	--	---

Appendices

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. See Page 61.	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 .	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.
-------------	--	---	--	---	--	--

Short Term	RECOMMENDATION		BENEFITS		IMPLEMENTATION STRATEGY			
			HYDROLOGY	ECOLOGY	RECREATION	EDUCATION		
L11S	Create trail connection from Mission City Trolley Station to Qualcomm Way.				Integrate bicycle trails and trolley system.		Coordinate with San Diego Bicycle Master Plan and Mission Valley Community Plan to identify specific route alignment.	Executive Summary
L12S	Utilize existing underpass as a means of connecting to neighborhoods and canyon north of Friar's Road.				Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.		Support City of San Diego and property owners in effort to improve underpass entrances. Provide lighting and potential better pedestrian connections to the underpass.	
L13S	Create bike path connection to San Diego River Park Trail from Bachman Place, Camino de la Reina and Avenida del Rio.				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.	Coordinate with San Diego Bicycle Master Plan and develop specific study to confirm route alignment.	Introduction
L14S	Explore potential to reconnect Ruffin Canyon with the River		Improve visual and wildlife habitat continuity from canyon to valley.		Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.	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.	
L15S	Establish Green Gateway at interchange of I-8 and I-805 and at interchanges of I-805 and Friars Road.		Improve visual and wildlife habitat continuity across the valley. Refer to General Recommendations regarding Green Gateways.				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.	Principles
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.		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.	Recommendations
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.		Improving connection will enhance awareness and recreational experience for users of the multi-use river trail. While added open space provides additional recreational opportunities along San Diego River Park and Trail.		Coordinate with appropriate public agencies and community groups.	
L18S	River Garden site. Connect to San Diego River Park and trail.				Improving connection will enhance awareness and recreational experience for users of the multi-use river trail. While River Garden Site provides additional recreational opportunities along San Diego River Park and Trail.		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.	Design Guidelines
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. See page 60.	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.		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).	Interpret unique habits, sensitivities and characteristics of canyon and naturalized open space habitats.	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.	Implementation
L20S	If stadium redevelops, engage developers to integrate open space connections between San Diego River Park and canyons. See page 60.		Improve visual and wildlife habitat continuity across the valley and along its adjacent canyons.		Improving connection will enhance awareness and recreational experience for users of the multi-use river trail. While added open space provides additional recreational opportunities along San Diego River Park and Trail.		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.	

	RECOMMENDATION	BENEFITS				IMPLEMENTATION STRATEGY
		HYDROLOGY	ECOLOGY	RECREATION	CULTURE / EDUCATION	
Executive Summary	Short Term					
	L21S	Create multi-use trail in conjunction with Qualcomm redevelopment.			Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.	Coordinate with stadium redevelopment process and San Diego Bicycle Master Plan to identify specific alignment.
Introduction	Long Term					
	L1L	Connect to Presidio Park via Taylor Street bridge over I-8.		Expands wildlife habitat and improves habitat connectivity.	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.
Principles	L2L	Engage land owners to encourage any future redevelopment of Riverwalk GC to address river.		Expands wildlife habitat and improves habitat connectivity.	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.
	L3L	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.	Site behind the Union Tribune could offer opportunity to expand River Park corridor.	Create views to river and access from development.
Recommendations	L4L	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.		Reestablish a river pattern that is closer to the historic river environment.
	L5L	Improve trail connections between river corridor and canyons.			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.
Design Guidelines	L6L	Create trail and open space connection to Balboa Park.		Expand native plantings to expand upland habitat connection from river valley to Balboa Park.	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 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.
	L7L	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.	Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.	Create views to river and access from development
Implementation	L8L	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.	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.
	L9L	Create open space and trail connections to uplands via an improved Texas Street.			Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.	Coordinate with City of San Diego and the San Diego Bicycle Master Plan to improve Texas Street and create a dedicated multi-use trail separated from street with a naturalized open space corridor.
Appendices	L10L	Improve Mission City Parkway over crossing to connect river corridor and upland open space			Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.	Coordinate with Caltran to explore potential to improve Mission City Parkway bridge over I-8 to connect people to uplands. Coordinate with City of San Diego and the San Diego Bicycle Master Plan to improve Texas Street and create a dedicated multi-use trail separated from street with a naturalized open space corridor.

RECOMMENDATION		BENEFITS			IMPLEMENTATION STRATEGY		
Short Term - Confluence		HYDROLOGY	ECOLOGY	RECREATION	CULTURE / EDUCATION		
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	Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.	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.	Executive Summary
C2S	Create San Diego River Park Trail along north edge of river.			Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.		Coordinate with the appropriate agencies, community groups and the Grantville Redevelopment Study to identify specific route alignment of potential multi-use trail on north side of the river.	Introduction
C3S	Coordinate with proposed Grantville redevelopment 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.	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 Redevelopment Study to identify potential land for park or open space through acquisition or open space easements.	
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.	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 trail on south side of Alvarado Creek. Coordinate with public agencies to explore potential to aggregate public lands under a single management.	Principles
C5S	Improve open space and trail connection with Alvarado Canyon.			Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.		Coordinate with appropriate agencies to improve on-street bike lane and provide signage.	
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.		Potential to improve the open space and trail connection to the Grantville Redevelopment Area.		Coordinate with Grantville Redevelopment 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.	Recommendations
C7S	Create San Diego River Park Trail along east edge of river.			Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.		Coordinate with appropriate agencies, community groups and the Grantville Redevelopment Study to study potential and to identify specific route alignment of potential multi-use trail 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 Alcala. If land cannot be acquired study alternative alignment on west side of river.	Design Guidelines
Short Term - Upper Valley							
U1S	Coordinate with proposed Grantville redevelopment 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.			Coordinate with appropriate agencies, community groups and the Grantville Redevelopment 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.	Implementation
U2S	Create habitat and continuous multi-use trail near river adjacent to Admiral Baker Golf Course.	Future benefit when implemented in long term.	Future benefit when implemented in long term.	Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.	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.	
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.			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 trail.	Appendices
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.				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.	

	RECOMMENDATION	BENEFITS	IMPLEMENTATION STRATEGY				
Executive Summary	Long Term - Confluence		HYDROLOGY	ECOLOGY	RECREATION	CULTURE / EDUCATION	
	C1L	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.	Potential for natural open space and passive recreation park somewhere within this area.	Prepare specific plan for design of trail alignment and natural open space as land or easement is acquired	
	C2L	Implement open space identified through Grantville Redevelopment 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.	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 Redevelopment 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.	
Introduction	C3L	Implement trail connection and interpretive signage to Mission San Diego De Alcalá connecting via Rancho Mission Road and San Diego Mission Road.			Connect to Mission, pedestrian only on North and West side.	Interpret Mission and importance of river to its location along the San Diego River Park Trail.	Coordinate with the San Diego Bicycle Master Plan and Community Plans to identify specific alignment and establish easement. Explore opportunities with willing land owners to establish public access.
Principles	Long Term - Upper Valley						
	U1L	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.	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	
	U2L	Improve open space and trail connection to Elanus Canyon north of Admiral Baker Golf Course.			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.	
Recommendations	U3L	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.	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.	
Design Guidelines	U4L	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.		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.	
Implementation	U5L	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.	Potential for natural open space and passive recreation park somewhere within this area.	Coordinate with appropriate agencies and community groups to prepare specific plan and implement improved open space parks.	
	U6L	As Superior Mine redevelops, implement plan to focus development on river corridor and to create riparian habitat and multi-use trail as component of redevelopment plan.		Refer to General Recommendations regarding Lateral Connections.	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.
	U7L	Create trail connection to Tierrasanta neighborhood with the San Diego River Park			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.	

RECOMMENDATION	BENEFITS			IMPLEMENTATION STRATEGY		
	HYDROLOGY	ECOLOGY	RECREATION	CULTURE / EDUCATION		
Short Term - Gorge						
G1S	Support Mission Trails Regional Park effort to establish a continuous trail system and identify potential connections between the San Diego River Park Trail and Existing hike/bike trails in Mission Trails Regional Park..	Potential to improve water quality through increased soft surface filtration.		Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.		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.
G2S	Support existing and proposed interpretation of the river and history of the park at Mission Trails Visitor and Interpretive Center				Build upon interpretation of significance of river to settlement of region.	Continue dialogue with Mission Trails Regional Park Master Plan and Citizens Advisory Committee.
G3S	Support existing interpretation of the river and the history of valley at campground and Kumeyaay Lakes.				Build upon interpretation of significance of river to settlement of region.	Continue dialogue with Mission Trails Regional Park Master Plan and Citizens Advisory Committee.
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.			Continue dialogue with Mission Trails Regional Park Master Plan and Citizens Advisory Committee.
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.		Improving connection will enhance awareness and recreational experience for users of the multi-use river trail.	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.
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.		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.
Short Term - Plateau						
P1S	Create San Diego River Park Trail head, as a gateway to San Diego at Carlton Oaks Golf Course. Coordinate with City of Santee to create habitat and trail connection to Santee Lakes and to Mast Park.			Provide continuous multi-use trail.		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.
P2S	Create historic interpretation zone.			Provide continuous multi-use trail.	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.
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.		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.

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

	RECOMMENDATION	BENEFITS				IMPLEMENTATION STRATEGY
		HYDROLOGY	ECOLOGY	RECREATION	CULTURE / EDUCATION	
Executive Summary	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.	Provide continuous multi-use trail 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.
Introduction	Long Term - Gorge					
	G1L	Collaborate with Mission Trails Regional Park to create waystation at edge of Mission Trails Regional Park with interpretive information.		In long term, creates opportunity for rest stop on trail at edge of Mission Trails Regional Park.	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.
Principles	G2L	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.		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.
	Long Term - Plateau					
Recommendations	P1L	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.	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.
	P2L	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.	Introduces River Park and creates strong interface with City of Santee	Monitor future action related to potential land use change.
Design Guidelines	P3L	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.		Initiate dialogue with Carlton Oaks Golf Course to identify methods to modify golf course to be more environmentally compatible with river corridor.
Implementation	P4L	Explore potential to realign some golf holes to eliminate dike, recreate stream meander, realign multi-use trails 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.	New multi-use trail 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.

Recommended Plant Species

Native Habitat Species

Re-vegetation / habitat areas

Rl riparian - lower mixed willow woodland (to marsh line)

Ru riparian - upper mixed willow woodland

C/css chaparral / coastal sage scrub upland

Trees - riparian

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



Salix Lasiolepis

<http://ic.ucsc.edu/~wxcheng/wetwul>

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



Encelia californica

<http://www.laspilitas.com/plants>



Baccharis pilularis

<http://www.coestatepark.com>



Mimulus puniceus

http://www.sci.sdsu.edu/plants/sdpls/plants/Mimulus_aurantiacus.html

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Buffer Species

Br buffer - riparian
 Bu buffer - 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 harfordii	Island Bush Poppy	bu	evergreen shrub
Dendromecon rigida	Bush Poppy	bu	evergreen shrub
Encelia californica	California Encelia	bu	deciduous shrub
Erigeron glaucus	Compact Beach Aster	bu	perennial
Eriogonum fasciculatum	Flat-top Buckwheat	bu	shrub/perennial
Eriogonum fasciculatum 'dana point'	Hybrid Dwarf Buckwheat	bu	evergreen shrub
Galvezia speciosa	Bush Island Snapdragon	bu	evergreen shrub

Heteromeles arbutifolia	Toyon	bu	evergreen shrub
Iris douglasiana	Pacific Coast Iris	br, bu,	perennial
Juncus patens	Rush	br	rush
Keckiella cordifolia	Heart-Leaved Penstemon	br, bu,	evergreen shrub

Lobelia laxiflora	Red Cardinal Flower	br, bu,	perennial
Lonicera subspicata	San Diego Honeysuckle	bu	evergreen vine
Malosma laurina	Laurel Sumac	bu	evergreen shrub
Mimulus puniceus	Monkeyflower	br, bu,	shrub/perennial
Mirabilis californica	Wishbone Bush	bu	evergreen shrub
Muhlenbergia rigens	Deer Grass	bu	grass
Prunus ilicifolia	Holly-Leaf Cherry	bu	evergreen shrub
Prunus lyonii	Catalina Island Cherry	bu	evergreen shrub/tree



Mirabilis californica
<http://www.santabarbarahikes.com/flowers>



Rhus integrifolia
<http://www.calflora.net/bloomingplants>



Vitis girdiana
<http://www.sbs.utexas.edu/deathvalley/plants/oitispag.htm>

Rhamnus californica	California Coffeeberry	bu	evergreen shrub
Rhus integrifolia	Lemonade Berry	bu	evergreen shrub
Ribes indecorum	White-Flowered Currant	br, bu,	deciduous shrub
Rosa californica	California Wild Rose	br	deciduous shrub
Salvia clevelandii 'allen chickering'	Allen Chickering Sage	bu	evergreen shrub
Salvia greggii 'salmon'	Salmon Autumn Sage	bu	evergreen shrub
Salvia greggii 'white'	White Autumn Sage	bu	evergreen shrub
Salvia leucophylla 'pt. Sal spreader'	Hybrid Purple Sage	bu	evergreen shrub
Salvia mellifera 'repens'	Prostrate Black Sage	bu	evergreen shrub
Salvia mellifera 'tera seca'	Tera Seca Sage	bu	evergreen shrub
Salvia 'winifred gilman'	Winifred Gilman Sage	bu	evergreen shrub
Sisyrinchium bellum	Blue-Eyed Grass	bu	perennial
Viguiera lanata	Woolly-Leaf Sunflower	bu	shrub/perennial
Vitis girdiana	Wild Grape	br, bu,	deciduous vine
Woodwardia fimbriata	Giant Chain Fern	br, bu,	fern

Urban Species



Quercus agrifolia
<http://www.coestatepark.com>
 "Copyright (c) Lee Dittmann, used with permission."

Muhlenbergia lindhamaerii*	Deer Grass	grass
Muhlenbergia rigens	Deer Grass (native)	grass
Prunus ilicifolia	Holly-Leaf Cherry	evergreen shrub
Prunus lyonii	Catalina Island Cherry	evergreen shrub
Rhamnus californica 'eve case'	Coffeeberry	evergreen shrub
Rhus integrifolia	Lemonade Berry	evergreen shrub
Rosmarinus officianalis*	Rosemary	evergreen shrub
Salvia clevelandii 'allen chickering'	Allen Chickering Sage	evergreen shrub
Salvia greggii*	Autumn Sage	evergreen shrub
Salvia leucophylla 'pt. Sal spreader'	Hybrid Purple Sage	evergreen shrub
Salvia mellifera 'repens'	Prostrate Black Sage	evergreen shrub
Salvia mellifera 'tera seca'	Tera Seca Sage	evergreen shrub
Salvia 'winifred gilman'	Winifred Gilman Sage	evergreen shrub
Sisyrinchium bellum	Blue-Eyed Grass	perennial
Vitex agnus-castus*	Chaste Tree	deciduous shrub
Vitis girdiana	Wild Grape	deciduous vine
Westringia rosmariniformis*	Coast Rosemary	evergreen shrub
Woodwardia fimbriata	Giant Chain Fern	fern



Sisyrinchium bellum
<http://www.laspilitas.com>



Platanus racemosa
<http://www.coestatepark.com>
 "Copyright (c) Lee Dittmann, used with permission."

Executive Summary

All plants are California-native or cultivated hybrids of natives, except those marked with asterisk (*).

Trees

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

Introduction

Shrubs / groundcovers / grasses / vines

Agave spp.*	Agave	succulent
Aloe spp*	Aloe	succulent
Anisodonteia hybrids*	Cape Mallow	evergreen shrub
Arbutus unedo, arbutus u. 'Compacta'*	Strawberry Tree	evergreen shrub
Artemisia californica 'montara ridge'	Dwarf California Sage/ Coastal Sagebrush	evergreen shrub
Baccharis 'centennial'	Centennial Baccharis	evergreen shrub
Baccharis pilularis ssp. consanguinea	Coyote Bush	evergreen shrub
Ceanothus griseus horizontalis	Carmel Creeper	evergreen shrub

Principles

Recommendations

Ceanothus hybrids	Hybrid Ceanothus	evergreen shrub
Cistus spp*	Rockrose	evergreen shrub
Dendromecon harfordii	Island Bush Poppy	evergreen shrub
Dendromecon rigida	Bush Poppy	evergreen shrub
Encelia californica	California Encelia	deciduous shrub
Erigeron glaucus (and hybrids)	Compact Beach Aster	perennial

Design Guidelines

Eriogonum fasciculatum 'dana point'	Hybrid Dwarf Buckwheat	evergreen shrub
Galvezia speciosa	Bush Island Snapdragon	evergreen shrub
Helictotrichon sempervirens*	Blue Oat Grass	grass

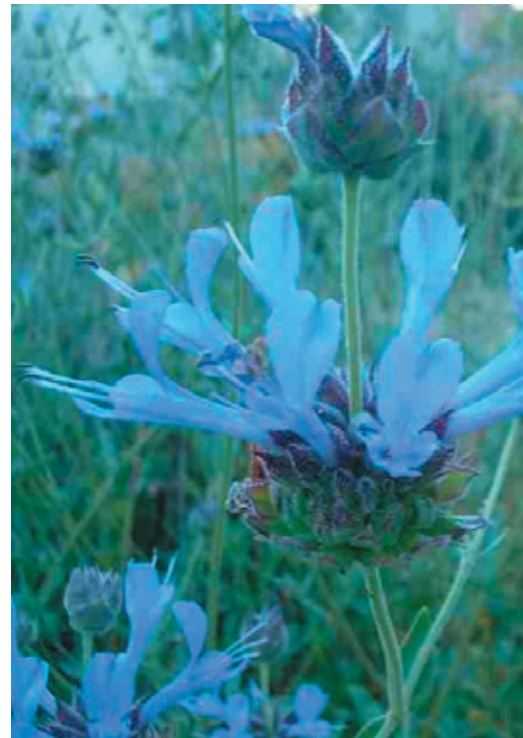
Implementation

Heteromeles arbutifolia	Toyon	evergreen shrub
Iris douglasiana	Pacific Coast Iris	perennial
Juncus patens	Rush	rush
Lavandula spp*	Lavender	perennial
Lavatera bicolor*	Bush Mallow	evergreen shrub
Keckiella cordifolia	Heart-Leaved Penstemon	evergreen shrub
Lobelia laxiflora	Red Cardinal Flower	perennial
Malosma laurina	Laurel Sumac	evergreen shrub
Mirabilis californica	Wishbone Bush	evergreen shrub

Appendices



Dendromecon harfordii
<http://www.theodorepayne.org>



Salvia clevelandii 'allen chickering'
<http://www.laspilitas.com>

Glossary

active recreation	programmed activities requiring specific built facilities, such as baseball fields, soccer fields, swimming pools, etc.	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
aeration	a process of adding oxygen to water, accomplished by natural means such as streambed turbulence or by artificial means such as fountains	daylighting	redirection of a section of a stream or creek that was previously underground into an above-ground channel
alluvial	of or relating to the sediment deposited by flowing water	delta	alluvial deposit at the mouth of a river; area where a river divides before entering a larger body of water
alluvium	sediment deposited by flowing water	disturbance/recovery cycle	the length of time necessary for an ecosystem to restore itself following a damaging event; system resilience
aquifer	an underground layer of porous rock, sand or gravel that bears water	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
basin	a region drained by a single river system	ecostructure	the more constant, stable elements of the biosphere that form the framework of environmental interactions and events
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	ecosystem	a self-sustaining system of organisms (plant and animal) and environment that functions as a single ecological unit
biodiversity	variability in different species of plants and animals within and between ecosystems	ephemeral (river)	a river that flows sporadically and briefly, usually following storm events or snowmelt; the flow may last hours or days
biomass	total amount of living matter, both plants and animals, within a given area	evapotranspiration	loss of water from the soil by evaporation and by transpiration of the plants growing in the soil
biota	inclusive term referencing the entire body of plant and animal life of a given region	exotic plants	non-indigenous vegetation; exotic species may be introduced to a region either intentionally or accidentally
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	filtration	the process of separating materials, as in pollutants or sediment, from the liquid in which they are suspended
Caltrans	California Department of Transportation	floodplain	any normally dry land, usually adjacent to a stream river or lake, that is subject to flooding
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		

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Executive Summary	floodway	a channel for carrying excess waters downstream, usually following storm events; water velocities tend to be greatest in this 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
	flow velocity	the volume of water passing through a specified area in a specified unit of time	infrastructure	the basic services and facilities needed for a community or society to function, such as transportation and utility systems
Introduction	FSDRIP	First San Diego River Improvement Project	interceptor sewer	a sewer designed to convey dry weather flow from the combined sewer system to the treatment plant
	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	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
Principles	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	invasive plants	species that disrupt native plant communities; these species compete with and may often displace native vegetation
	groundwater recharge	process by which external water, usually rain or snowmelt, is added to an aquifer	Kumeyaay	late prehistoric peoples inhabiting the San Diego River valley, circa 2000 years ago to mid 1700's.
Recommendations	headwaters	source of a river or stream	levee	an embankment to control flooding
	hydraulic	moved, operated or effected by liquid	light trespass	light which shines into neighboring properties or is of an undesirable or obtrusive nature
Design Guidelines	hydrologic	dealing with the properties, distribution and circulation of water on and below the earth's surface and in the atmosphere	links style golf	golf course characterized by open, rolling terrain, natural vegetation, target landing zone and considerable use of topographic features
	hydrologic regime	sum total of water that falls in or flows through an area on average during a given period	low flow channel	the course or path within a larger channel that typically carries flows during periods of low and/or normal water levels
Implementation	hydromodification	process whereby a streambank or riverbank is eroded by flowing water, typically resulting in suspension of sediments in the water	macrophyte	algae visible to the naked eye; a macroscopic, aquatic plant
	impervious	not allowing the passage of water	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
Appendices	impound	to collect and confine water in a reservoir or other structure	meander	irregular, turning course of a stream or river
	infill	development of vacant, underutilized or derelict parcels within an already urbanized area		

mitigation site	an area used to compensate for an environmental impact by providing substitute or replacement resources in another location	pocket park	a small park accessible to the public
MTRP	Mission Trails Regional Park	pulse flow	high flows occurring during storm events
multi-use trail	non-vehicular pathway that accommodates a variety of users, which may include pedestrians, bicyclists and, less frequently, equestrians	quasi-governmental entity	a body or organization that carries out, by contract or assigned power, functions normally executed by a government agency
native plants	a region's indigenous vegetation; plant species which existed in an area before human intervention	reach	portion of a stream or river with a unified character or landscape
non-point source load	pollutants that come from a wide variety of sources, rather than a single, specific point of origin	riffle	area of shallow, turbulent water passing through or over stone or gravel of a fairly uniform size
open space	area generally free from development or developed with low intensity uses that respect natural environmental characteristics	right of way	strip of land over which public infrastructure--roads, utilities, railways--is built
outfall sewer	a sewer that discharges treated sewage effluent to a stream or river	rip rap	large rocks of a fairly uniform size used to prevent erosion
overstory	uppermost layer of foliage in the tree canopy	riparian	of, on or related to the banks of a natural water body
passive recreation	hiking trails, cultural interpretation nature study	SANDAG	San Diego Association of Governments
perennial (river)	a river that flows continuously	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
physiographic	describing the earth's physical geography	sediment transport	the movement of materials by gravity, water or wind
phytoremediation	use of plants and trees to remove or neutralize contaminants	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
pioneer species	the first species or community to colonize a barren or disturbed area	sight line	imaginary line from the eye to a perceived object
plant community	the plant populations existing in a shared habitat or environment	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
plant palette	the set or selection of plants chosen for a particular purpose	spill light	light which extends outside the intended area or object of illumination
plume	a subsurface column of one or more pollutants released from a point source		

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices

Executive Summary	stakeholder	an individual or group who has a particular interest, monetary or otherwise, in a specific topic or project	watershed	a region draining into a river, river system or other body of water; may contain several basins
	substrate	the base on which an organism lives	waystation	a rest or interpretive area occurring between principal destinations along a route such as a bike trail
Introduction	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	xeriscape	the use of drought-resistant and water-conserving plants
	swale	a shallow topographic depression designed to convey water, usually from storm events		
Principles	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		
Recommendations	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		
Design Guidelines	tributary	a small river or stream that flows into a larger river or stream		
	trunk sewer	a sewer that receives wastewater from many areas		
Implementation	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		
Appendices	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		

References

606 Studio, Department of Landscape Architecture, 2002. San Diego River Park Conceptual Plan. California State Polytechnic University, Pomona.

Anchor Environmental CA, L.P., et al. 2003. Subtask 8.5 San Diego River Watershed Water Quality Report. pp. 97.

California Department of Fish and Game. 2003. Review of Regional Habitat Linkage Monitoring Locations. Conservation Biology Institute. <http://www.consbio.org/cbi/pubs/reports.htm>

California Department of Fish and Game. Natural Community Conservation Planning Program. <http://www.dfg.ca.gov/nccp/>

California Department of Water Resources. 2004. California's Groundwater Bulletin 118. Mission Valley Groundwater Basin. Available: http://www.dpla2.water.ca.gov/publications/groundwater/bulletin118/basins/9-14_Mission_Valley.pdf. Last Updated: February 27, 2004.

CalPIF (California Partners in Flight). 2003. Version 2. The coastal scrub and chaparral bird conservation plan: a strategy for protecting and managing coastal scrub and chaparral habitats and associated birds in California (J. Lovio, lead author). Point Reyes Bird Observatory. <http://www.prbo.org/calpif/plans.html>

City of San Diego. 2001. First San Diego River Improvement Project Natural Resource Management Plan. September. 2001.

City of San Diego. 2001. Land Development Code, Biology Guidelines; San Diego Municipal Code. May. 2001.

City of San Diego. 1995. Multiple Species Conservation Program Subarea Plan. (Draft) August. 1995.

City of San Diego. 2003. San Diego River Natural Resource Conservation Plan. (Draft) November. 2003.

Conservation Biology Institute. 2002. The Effects of Watershed Urbanization on Stream Hydrologic Characteristics and Riparian Vegetation of Los Peñasquitos Creek, California. Conservation Biology Institute. Encinitas, CA. July, 2002.

County of San Diego. 1998. Multiple Species Conservation Program Final MSCP Plan. August. 1998.

Dunne, Thomas and Leopold, Luna, 1978. Water in Environmental Planning. W.H. Freeman and Company, New York, San Francisco.

Fischer, R. A., and Fischenich, J.C. (2000). "Design recommendations for riparian corridors and vegetated buffer strips," EMRRP Technical Notes Collection (ERDC TN EMRRP-SR-24), U.S. Army Engineer Research and Development Center, Vicksburg, MS. www.wes.army.mil/el/emrrp

Fish and Wildlife Service. 1998. Draft recovery plan for the least Bell's vireo. U.S. Fish and Wildlife Service, Portland, OR. 139 pp.

Forman, Richard. and Godron, Michael. 1986. Landscape Ecology. John Wiley and Sons. New York. 1986.

Horne, A.J. and Goldman, C.R. 1994. Limnology 2nd edition. McGraw-Hill, Inc. New York.

Lynch, Kevin, 1974. Temporary Paradise? A Look at the Special Landscape of the San Diego Region. Massachusetts Institute of Technology, Cambridge.

MCAS Miramar 2000. Integrated Natural Resources Management Plan for Marine Corps Air Station Miramar.

McPhee, John, 2000. Annals of the Former World; Assembling California. Farrar Straus & Giroux, New York.

Minnich, Richard A. 2001. An Integrated Model of Two Fire Regimes. Conservation Biology, 15: 1549-1553.

Mount, Jeffrey, 1995. California Rivers and Streams: The Conflict Between Fluvial Process and Land Use. University of California Press. Los Angeles, California.

National Research Council (NRC). 1992. Restoration of Aquatic Ecosystems-Science, Technology, and Public Policy. National Academy Press. Washington, D.C.

Natural Resource Conservation Service. Riparian Buffer Zone; NRCS Planning & Design Manual. <http://www.nrcs.usda.gov/>

Pryde, Phillip, 1992. San Diego, An Introduction to the Region. Third Edition. San Diego: Department of Geography, San Diego State University.

RHJV (RIPARIAN HABITAT JOINT VENTURE). 2000. Version 1.0. The riparian bird conservation plan: a strategy for reversing the decline of riparian associated birds in California. California Partners in Flight. <http://www.prbo.org/CPIF/Riparian/Riparian.html>

RWQCB. 2003. California Regional Water Quality Control Board, San Diego Region, 2003. Status Report: San Diego River Watershed. To John H. Robertus from Michael Porter, September 10, 2003.

Schoenherr, Allan A. 1992. A Natural History of California. Berkeley: University of California Press.

SDCWA. 1997. Groundwater Report- Executive Summary. Available: <http://www.sdcwa.org/manage/groundwater-exec-summary.html>. Accessed by: Garrick Jones. Last Updated: 1997.

Executive Summary

Introduction

Principles

Recommendations

Design Guidelines

Implementation

Appendices