3.0 RECOMMENDATIONS

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

It is important to note that while each recommendation fits into the vision for the river, no single recommendation is meant to address every location or every situation along the length of the river. The Master Plan encourages pursuing opportunities as they arise with property owners to implement the Master Plan's vision and principles, while the general and specific recommendations focus on the six reaches of the river: Estuary, Lower Valley, Confluence, Upper Valley, Gorge and Plateau.

3.1 GENERAL RECOMMENDATIONS

3.1.1 RESTORE AND MAINTAIN A HEALTHY RIVER SYSTEM

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

RECOMMENDATIONS

A. Augment flows to the river periodically.

B. Remove / circumvent obstacles that impede flow.

C. Remove invasive vegetation species.

D. Encourage the growth of appropriate native riparian and upland vegetation.

E. Rehabilitate the channel to encourage meander and braiding.

F. Expand the river's recharge area.

G. Adopt programs to reduce/remove non-point source loads and including litter and solid waste.

H. Future development projects should incorporate hydrology and water quality considerations in all planning and guidance documents and monitor water quality following implementation of the projects.

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

Re-establish transitional riparian edges with native vegetation to filter stormwater runoff and accommodate minor flooding

A. Augment Flows to the River Periodically

Although the pre-disturbed condition of the river was one of ephemeral flows (dry during certain times of the year), the persistent condition is now perennial flows (at least some flow all year long). It is unlikely that flow in the river will be dramatically augmented by natural 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. The water should closely mimic existing river conditions in measures such as temperature and salinity, and augmented flow should occur periodically, to mimic historic patterns of flow. These seasonal pulse flows also offer the opportunity for sediment transport and would create disturbance/recovery cycles for ecosystems. The potential to augment flows should be fully explored with the Padre Dam Municipal Water District and Regional Water Quality Control Board.

B. Remove/Circumvent Obstacles that Impede Flow

Numerous impediments exist in the river channel and in most of the streams and creeks that are tributary to the channel, which includes ponds, lakes, culverts, roads, and dams. These elements segment habitat species movement and disrupt water flow. Past gravel mining operations have created ponds within the river and the flow of the river is inadequate to sufficiently flush the ponds thereby creating shallow ponds. The shallow ponds and minimal flow lead to an increase in water temperature, promoting algae and macrophyte growth which are both serious issues for riparian systems. The still water created by the ponds 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 existing ponds have a negative effect on the hydrology of the river, they offer potential passive recreation opportunities for fishing, non-motorized boating, birding and other activities as approved by the Federal and State Resource Agencies. It is beneficial to the river to separate the river from the ponds, but with aeration and other treatments the ponds could remain as assets to the River Park.

Historic gravel mining has resulted in numerous ponds

Overhanging native vegetation shades and cools the river

C. Remove Invasive Vegetation Species

The presence of dense, invasive vegetation results in an impediment to flow. Invasive species also result in dramatically increased evapotranspiration of water that would otherwise remain in the channel or be used by more productive and beneficial species. In an effort to reduce flow impediments and better utilize the limited water quantity in the channel, a strategy/plan for the systematic removal of invasive species from up-stream to down-stream should be prepared in coordination with adjacent jurisdictions.

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

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

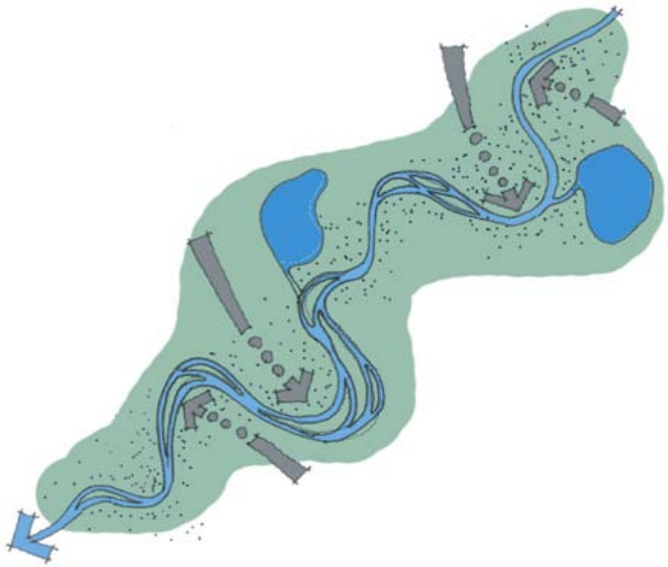
Appropriate and continuous native riparian vegetation has potential direct benefits to hydrology and water quality. Best management practices should be implemented to encourage the propagation of existing native species. Areas where invasive species have been removed should be re-vegetated with appropriate native species.

Less-dense, native vegetation will cause significantly fewer water circulation problems and require less water than invasive species. Additionally, under certain specific conditions a variety of native species can be used to more effectively "cleanse" urban runoff through nutrient uptake. In some locations non-invasive non-natives may be more beneficial in nutrient uptake then natives and the use of non-natives should be determined on a project by project basis. By increasing the riverbed area groundwater infiltration can be increased. When combined with specific additional vegetation, pollutant filtration can be increased. In certain situations, with careful planning, contaminated groundwater can be treated through phyto-remediation, or biological filtration. Such an approach would require careful study and should be integrated into the corridor where possible.

E. Rehabilitate the Channel to Encourage Meander / Braiding

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

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



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

F. Expand the River's Recharge Area

Past development in the floodplain and projects that have channelized the river have exacerbated flooding problems and increased the potential economic damage during major flood events. Development should look for ways to provide future projects that will not degrade the river's natural carrying capacity, water quality or riparian habitat. Such land use decisions should be made with sensitivity to the river. Expanding wetlands and creating new ones through restoration or construction will contribute to improving water quality by filtering pollutants and will serve as a refuge for native flora and fauna, allowing them to re-establish after flood events.

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

G. Adopt Programs to Reduce/Remove Non-Point Source Loads Including Litter and Solid Waste

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

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

The City recognizes the linkages between land use and impacts on the river in urban and suburban areas and has developed a "Storm Water Standards Manual" as a comprehensive program that sets forth a list of permanent best management practices that development must incorporate into their projects. Some examples include requiring compliance with 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 are the only alternative to massive, in-channel treatment approaches. Highway and golf course runoff is of particular concern. Responsible

Example of a swale

Example of an infiltration basin

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. Litter and solid waste management programs should target waste reduction. Litter bins should facilitate separation of recycled materials. Solid waste generation within the watershed should be minimized and properly managed.

Fragmentation of the river as a result of streets crossing at the First San Diego River Improvement Plan area slows stream flow

H. Future Development Projects should Incorporate Hydrology and Water Quality Considerations in all Future Planning and Guidance Documents and Monitor Water Quality following Implementation of the Project

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

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

Lack of natural buffer on the banks of the river increases the potential for run-off of fertilizers and pesticides into the river

3.1.2 UNIFY FRAGMENTED LANDS AND HABITATS

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

Connectivity between habitat areas increase the viability of wildlife

RECOMMENDATIONS

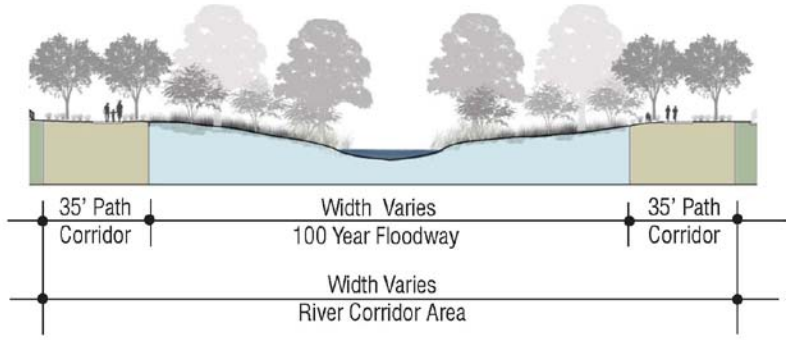
- **A. Establish appropriate corridors for the river, wildlife and people.**
- **B. Acquire open lands and/or pursue conservation easements.**
- **C. Eliminate invasive plant species and reintroduce native species.**
- **D. Naturalize floodway areas.**
- **E. Use biological systems to treat all storm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

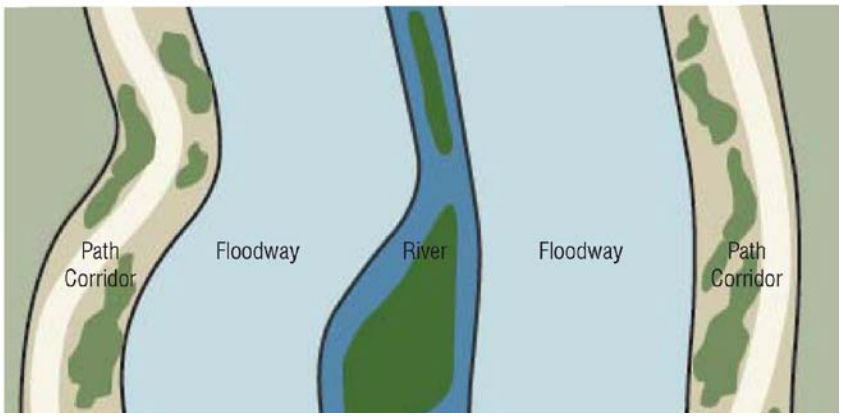
Naturalized floodway areas provide shade and protection for wildlife and cool the river

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

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

Within the San Diego River Park Master Plan are two specific corridors: the River Corridor Area and the River Influence Area. The River Corridor Area will include the river itself and the land immediately adjacent to it. This corridor will be measured by the 100-year Floodway, as mapped by FEMA, plus 35 feet on either side of the floodway. The 100-year Floodway varies in width depending on the floodway location and provides a continuous corridor that accommodates the flooding hydrology of the river while providing for a diversity of native vegetation for habitat. The 35-foot wide area provides an opportunity for native habitat and a multi-use pathway that will accommodate people. It will be a natural environment providing for the river ecology, enhancement of wildlife habitat and movement, and allowing for passive recreation, such as walking, bicycling, sitting and observation. In some areas of the River Corridor Area, public parks could be located that will contain turf areas. These turf areas will be graded to drain away from the river. The River Influence Area will adjoin the River Corridor Area and extend 200 feet on either side of the River Corridor Area. Within this area, development will occur and should be designed to acknowledge and





Plan and Section of River Corridor Area

celebrate the presence of the river and treat it as an amenity. In addition to the San Diego River Park areas, there are two other areas that provide for the protection, preservation and restoration of the river and wildlife. These two areas are the city's Multi-Habitat Preservation Area (MHPA) and the Wetland Buffer for wetlands. The MHPA has been established and mapped by the city. The Wetland Buffer is not mapped in advance, but is determined at the time of proposed development. These areas: the San Diego River Park River Corridor and River Influence Areas, the MHPA, and the Wetland Buffer, all work together to provide for an appropriate corridor for the river, wildlife and people.

B. Acquire Open Lands and/or Pursue Conservation Easements

To expand, unify, and connect the River Corridor area the City of San Diego, the State River Conservancy, the River Coalition and other organizations should acquire open space parcels and/or obtain easements on private property as opportunities arise.

C. Eliminate Invasive Plant Species and Reintroduce Native Species

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

D. Naturalize Floodway Areas

Naturalized floodway areas that are created should restore river channel dynamics to a more natural hydrologic regime and provide continuous transitions of native plant communities between the riparian and upland habitat areas.

E. Use Biological Systems to Treat All Storm Water before it enters the River

Biological treatment systems (constructed wetlands) provide water quality buffering that mimics natural processes while maintaining the character of the river corridor and should be considered if long term financing and maintenance is available (constructed wetlands typically have a ten year life span). These systems provide a vegetative substrate for micro-organisms that break down pollutants. These systems are only effective when planned on a comprehensive scale and provided with regular maintenance. This method of water filtering aligns with the United States Bureau of Reclamation Storm Water Treatment Program goals. The San Diego River Park should also make the location of these Biological Systems visible and provide educational interpretation of these systems for the public.

F. Separate Pedestrian/Wildlife and Vehicular River Crossings

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

Pedestrian Tunnel under Friars Road provides a link between the river valley and the community to the north and Ruffin Canyon

G. Create 'Green Gateways'

Green Gateways should be located below major highways that cross the river and should consist of large-scale native riparian trees and shrubs to identify the river's location from the highway. Depending upon each highway's elevation in relation to the ground plane of the river valley below, 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.

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

The San Diego River Park should implement green gateways at a range of scales, sized to fit the visual and functional needs of the connections being made via the use of native vegetation. Large-scale green gateways are appropriate at locations where highways, such as Interstate 5, State Highway 163, Interstate 805 and 15 cross the San Diego River Valley. These plantings should include native trees and understory vegetation selected from the Recommended Plant Species in Appendix A. Fremont Poplar (Populus fremontii) or California Sycamore (Platanus racemosa) are recommended for this application; these species are large, easily-recognizable trees that are signature elements of the region's riparian corridors and manifests seasonal interest. Iconic trees, such as these two, will emphasize the river's location. Open space parcels, whether acquired outright or through public access easements that are contiguous with the green gateways can contribute to and enhance their effect. These open space corridors will extend the native vegetation of the green gateways.

H. 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 could provide trail linkages and habitat connections to less-frequented areas of the San Diego River Park.

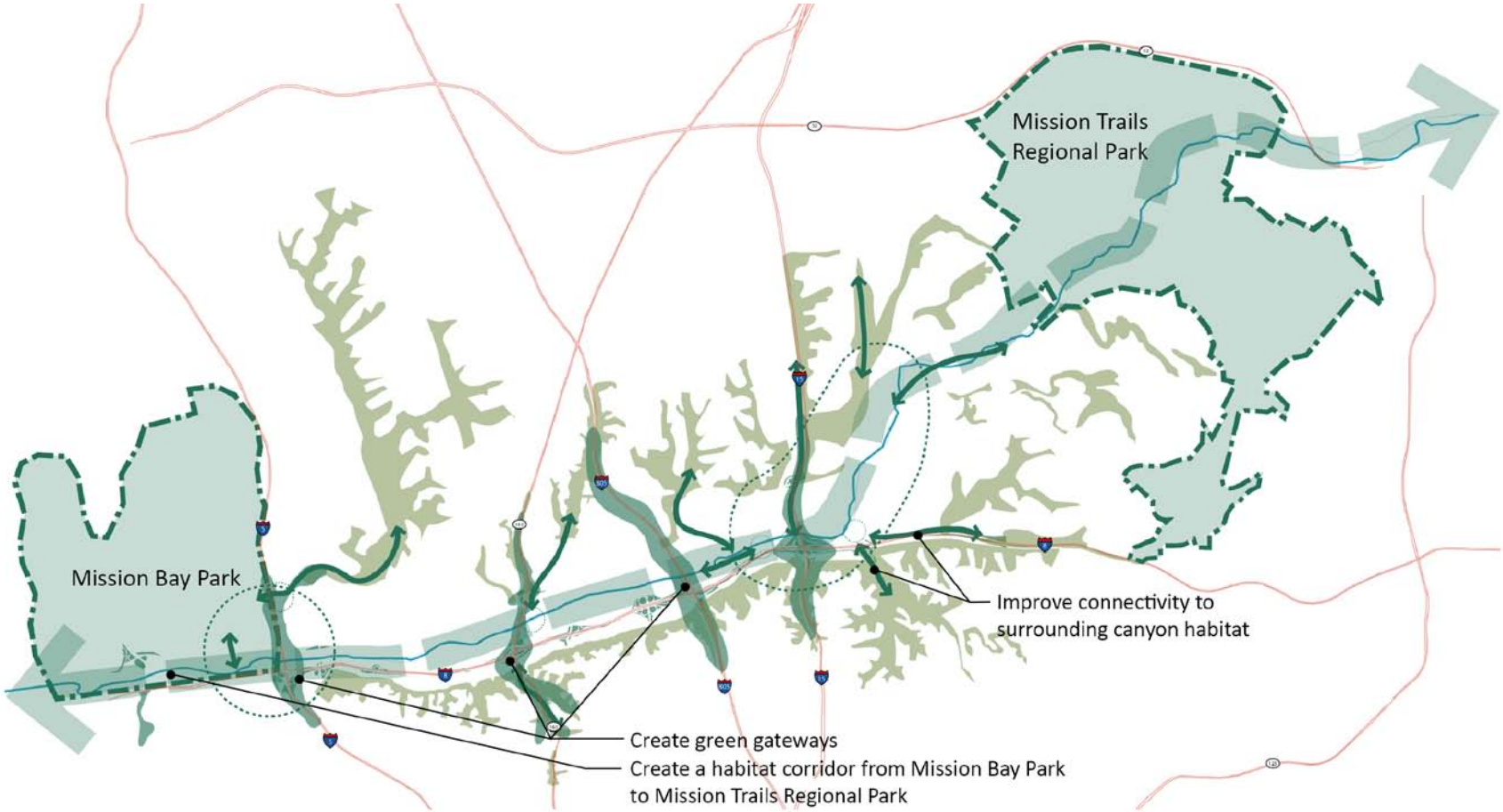
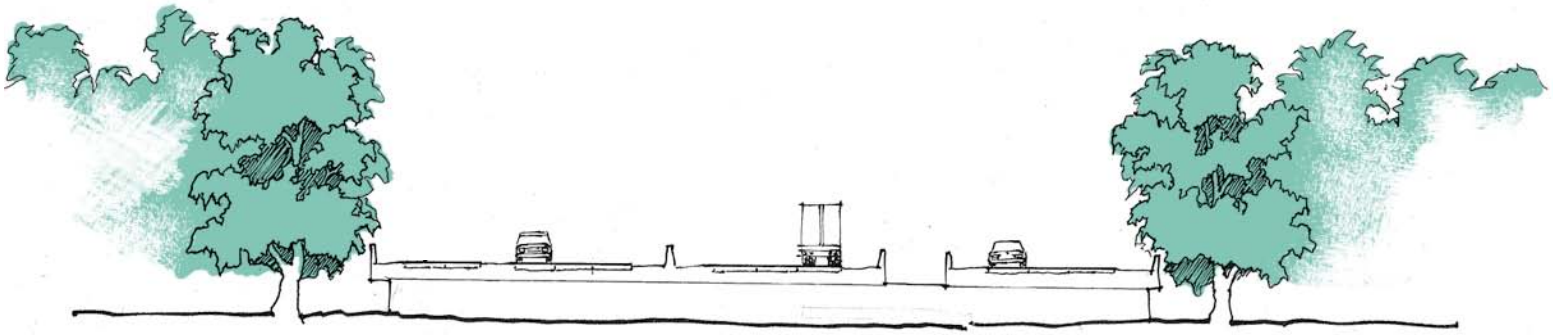
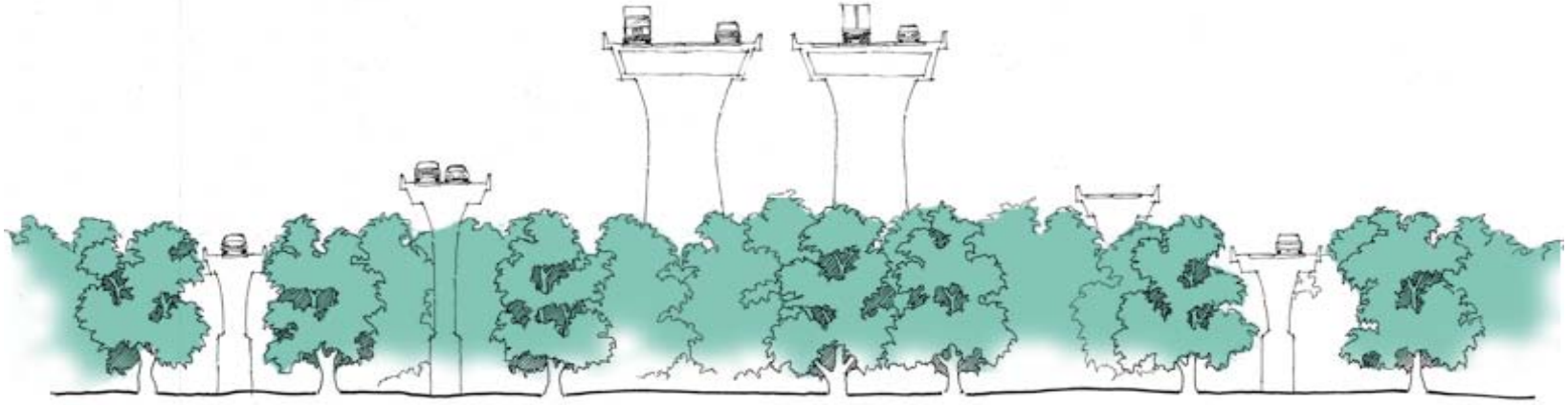


Figure 4. Ecostructure of the San Diego River Park



Cross section of State Route 163 illustrating the going “through” the green gateway experience as State Route 163 crosses above the San Diego River. There is a sense of enclosure and a cooler microclimate on the edges of the highway created by the shading of the riparian tree canopy.



Cross section of Interstate 805 illustrating the going “over” the green gateway experience as Interstate 805 crosses above the San Diego River. From above, the green gateway outlines the location of the river for the motorist.

Figure 5. Green Gateways

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

Establish a continuous river pathway system from the Pacific Ocean to the City of Santee and from canyon to canyon that provides for frequent access to transit and neighborhoods. Coordinate with community plans, the San Diego Bicycle Master Plan and Pedestrian Master Plan, adjacent jurisdictions and other current planning efforts to develop specific locations for neighborhood connections and route alignments.

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

RECOMMENDATIONS

A. Create a continuous multi-use San Diego River pathway from the Pacific Ocean to the City of Santee.

B. Link the river pathway to adjacent canyons and neighborhoods.

C. Acquire open space lands to expand connectivity.

D. Create overlooks at unique places.

E. Upgrade and link existing parks into San Diego River Park system.

F. Explore opportunities for additional community or neighborhood-scale parks.

G. Integrate art into the identity and experience of the San Diego River Park.

H. Install San Diego River Park way-finding signs.

I. Explore opportunities for water recreation.

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

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

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

The multi-use river pathway provides the opportunity to exercise, socialize, and connect communities

Overlook at Mission Trails Regional Park of the historic Mission Dam

B. Link the River Pathway to Adjacent Canyons and Neighborhoods

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

C. Acquire open space lands to expand connectivity

Land beyond the river corridor itself can be important to the overall connectivity of the open space system. As opportunities to acquire such land arise, acquisition should be pursued where they support the Master Plan principles for expansion of the open space network.

D. Create Overlooks at Unique Places

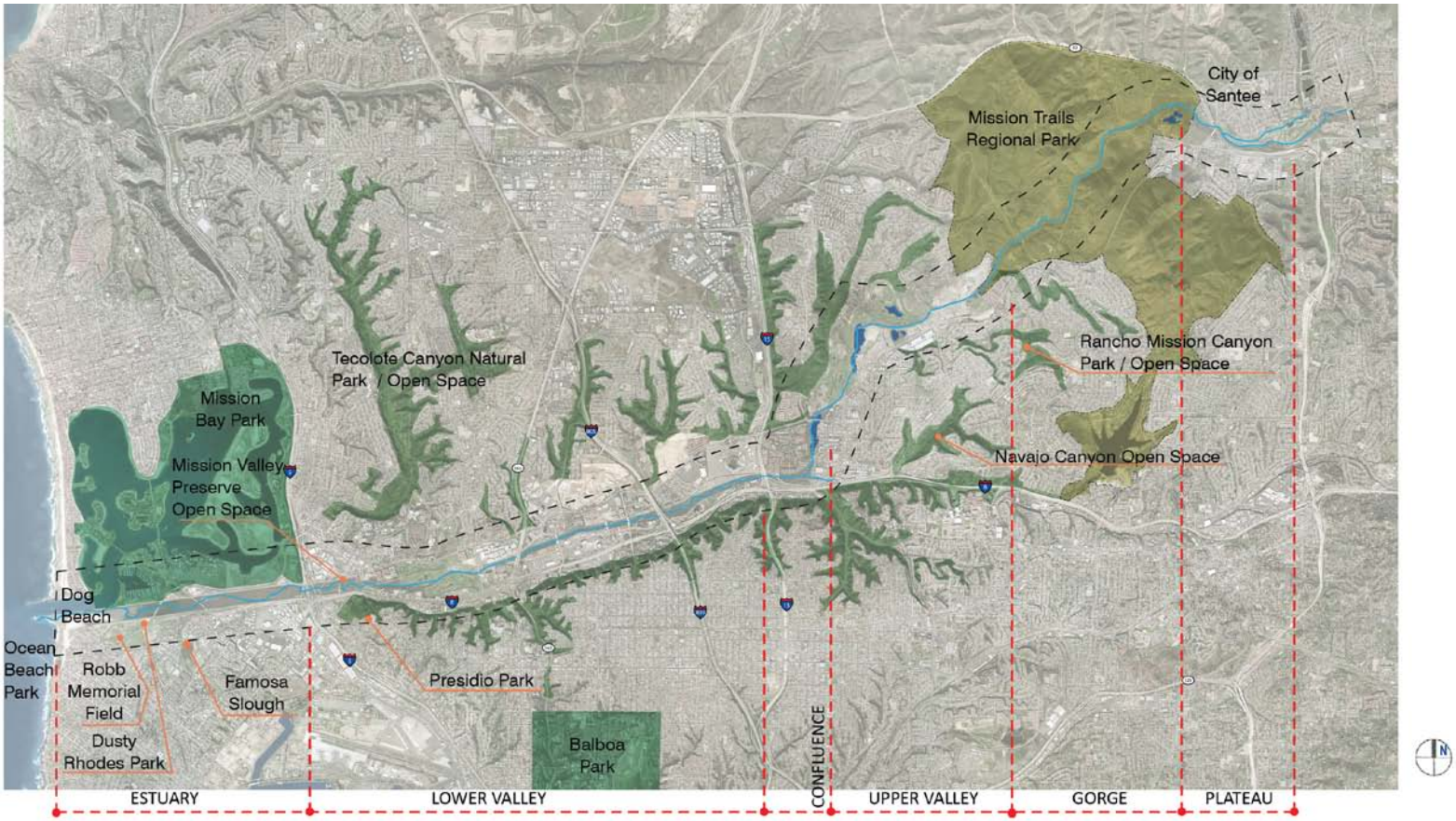
Overlooks will offer viewpoints along the river's length or at nodes where a north-south connection to a community meets the San Diego River Park. Generally, overlooks will be along the river pathway, and will include picnic tables, interpretive signs and/or seating according to the size of the space.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

E. Upgrade and Link Existing Parks into the San Diego River Park System

The San Diego River Park is ultimately a linked series of parks and open space. Awareness of the river and the river park should begin in existing parks that can be linked to the river park. Physical and conceptual elements of the San Diego River Park should be used in upgrades and renovations of existing parks. Establishing a set of materials that are evocative of and sensitive to the San Diego River will knit the system

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

Adjacent to the river is Mast Park in the City of Santee



- Ocean Beach Park
- Mission Bay Park
- Dog Beach (part of Mission Bay Park)
- Dusty Rhodes Park (part of Mission Bay Park)
- Famosa Slough Open Space
- Robb Field (part of Mission Bay Park)
- Mission Valley Preserve Open Space
- Presidio Park
- Tecolote Canyon Natural Park/Open Space
- Navajo Canyon Park/Open Space
- Rancho Mission Canyon Park/Open Space
- Mission Trails Regional Park

Figure 6. Existing Regional Parks and Open Space Areas

together, and is an overall goal of the San Diego River Park Master Plan. As parks are redeveloped, sensitivity to the river should guide design and material selection. Native planting areas should be expanded and impervious surface areas reduced.

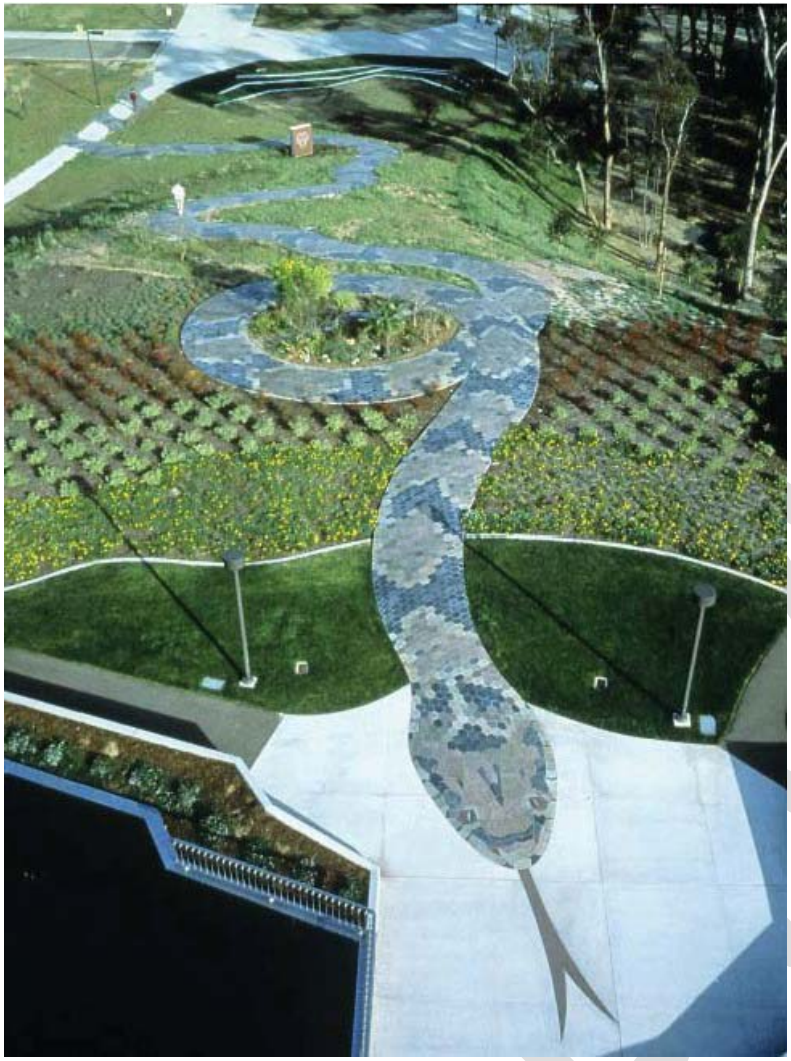
F. Explore Opportunities for Additional Community or Neighborhood-Scale Parks

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

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

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

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



"Snake Path", Artist: Alexis Smith

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

H. Install San Diego River Park Way-Finding Signs

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

San Diego River sign

I. Explore Opportunities for Water Recreation

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

The following areas along the river have water restrictions in place; they include the Southern Wildlife Preserve, the Mission Valley Preserve and the First San Diego River Improvement Project (FSDRIP). The Southern Wildlife Preserve, located at the western end of the river, only allows non-motorized boats in the river west of Ingraham Street Bridge from April through September and permits are required to use the area. The Mission Valley Preserve, just east of the Southern Wildlife Preserve, is also a preserve for wildlife and water recreation is restricted. Within the FSDRIP area, water recreation is defined in the FSDRIP Natural Resource Management Plan (NRMP). This NRMP states that the water and buffer areas are a wildlife habitat and that no swimming and boating is allowed. Passive recreation, such as bicycling, picnicking, fishing and wildlife observation is allowed. Fishing is an allowable use in the riprap areas and from bridge crossings.

3.1.4 REVEAL THE RIVER VALLEY HISTORY

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


Example of interpretive garden, by artist Robert Miller

RECOMMENDATIONS

A. Develop an interpretive program based on the historical, biological and cultural resources of the river.

B. Create a San Diego River Park Interpretive Center.

C. Use maps, art and signage to integrate the history of the river valley in appropriate locations.

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

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

Significant Historic Sites

- Midway Pacific area – the Derby Dike.
- Old Town area – Kumeyaay cultural resources, the San Diego Presidio and the original San Diego de Alcala Mission site.
- Mission Valley area – Prehistoric Kosa'aay (Cosoy) Village site, the 1881 California Southern railroad, the Mission San Diego de Alcala, and the Nipaquay Village site.
- Navajo area – Kumeyaay cultural resources.
- Tierrasanta area – Kumeyaay cultural resources and Old Mission Dam and Flume.

B. Create a San Diego River Park Interpretive Center

Due to the significance of the river's history in the San Diego region an Interpretive Center should be provided along the river in a central location. The center could be a public or private facility and designed for residents and visitors. Within the center there could be literature, videos, lecture rooms and a museum to showcase the river's history. Printed historic brochures and walking tours should be provided. Where possible, "green" construction materials, such as those with post-consumer recycled content, should be used. Materials with high greenhouse gas impacts should be avoided.

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

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

Example of an interpretive sign
Kumeyaay Lake, Mission Trails Regional Park

3.1.5 REORIENT DEVELOPMENT TOWARD THE RIVER TO CREATE VALUE AND OPPORTUNITIES FOR PEOPLE TO EMBRACE THE RIVER

Rivers can provide significant value and advantages for urban environments. They connect communities to each other, provide recreation and open space, offer views in a crowded environment, provide habitat for valued species and provide dramatic settings for urban places. Along the San Diego River, opportunities for people to embrace the river has been neglected by placing the back side of buildings toward the river, locating delivery ramps adjacent to the river and, in some cases, locating parking lots that drain to the river. As a result, the river is polluted, filled in by invasive species and is perceived to be an unsafe area. Opportunities to change this can be provided through implementing the following recommendations during the redevelopment along the river.

Riverfront redevelopment Malden River, Medford, MA

Recreation center adjacent to the San Diego River in Mission Valley

RECOMMENDATIONS

A. Treat the river as an amenity.

B. Encourage development to provide active uses fronting the River.

C. Encourage development to face the river.

D. Include access to the river through new development.

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

F. Uncover the river's tributaries.

G. Create "green streets".

H. Enhance the development edge facing the river with active uses.

A. Treat the River as an Amenity

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

B. Encourage Development to Provide Active Uses Fronting the River

Development along the river should provide a mix of housing, jobs, shopping, commercial services and public or semi-public open spaces. This type of development promotes higher residential densities that are within close proximity to public transportation, provides dwellings to accommodate students, workforce and senior housing, and provide outdoor gathering spaces that create a village atmosphere. Future projects adjacent to the river should look for opportunities to provide active uses that are oriented towards the river. Commercial services, cafes and other active uses could be located on the ground floor to take advantage of the connection to the river pathway and connections to the existing trolley transportation system. Residential uses could be found in the upper floors of buildings to provide privacy and views to the river.

C. Encourage Development to Face the River

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

D. Include Access to the River through New Development

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

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

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

F. Uncover the River's Tributaries

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

Example of a native planted green street in San Francisco

G. Create "Green Streets"

Green streets transform impervious street surfaces into landscaped green spaces that capture stormwater runoff and let water soak into the ground as plants and soil filter pollutants. Green streets convert stormwater from a waste directed into a pipe, to a resource that replenishes groundwater supplies. They also have the potential to create attractive streetscapes and urban green spaces and help connect neighborhoods, schools, parks and business districts. Green streets should be used throughout the river area to provide connectivity to adjacent communities.

H. Enhance Development Edges Facing the River with Active Uses

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

Example of outdoor patios and balconies adjacent to the River Corridor

3.2 SPECIFIC REACH RECOMMENDATIONS

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

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

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

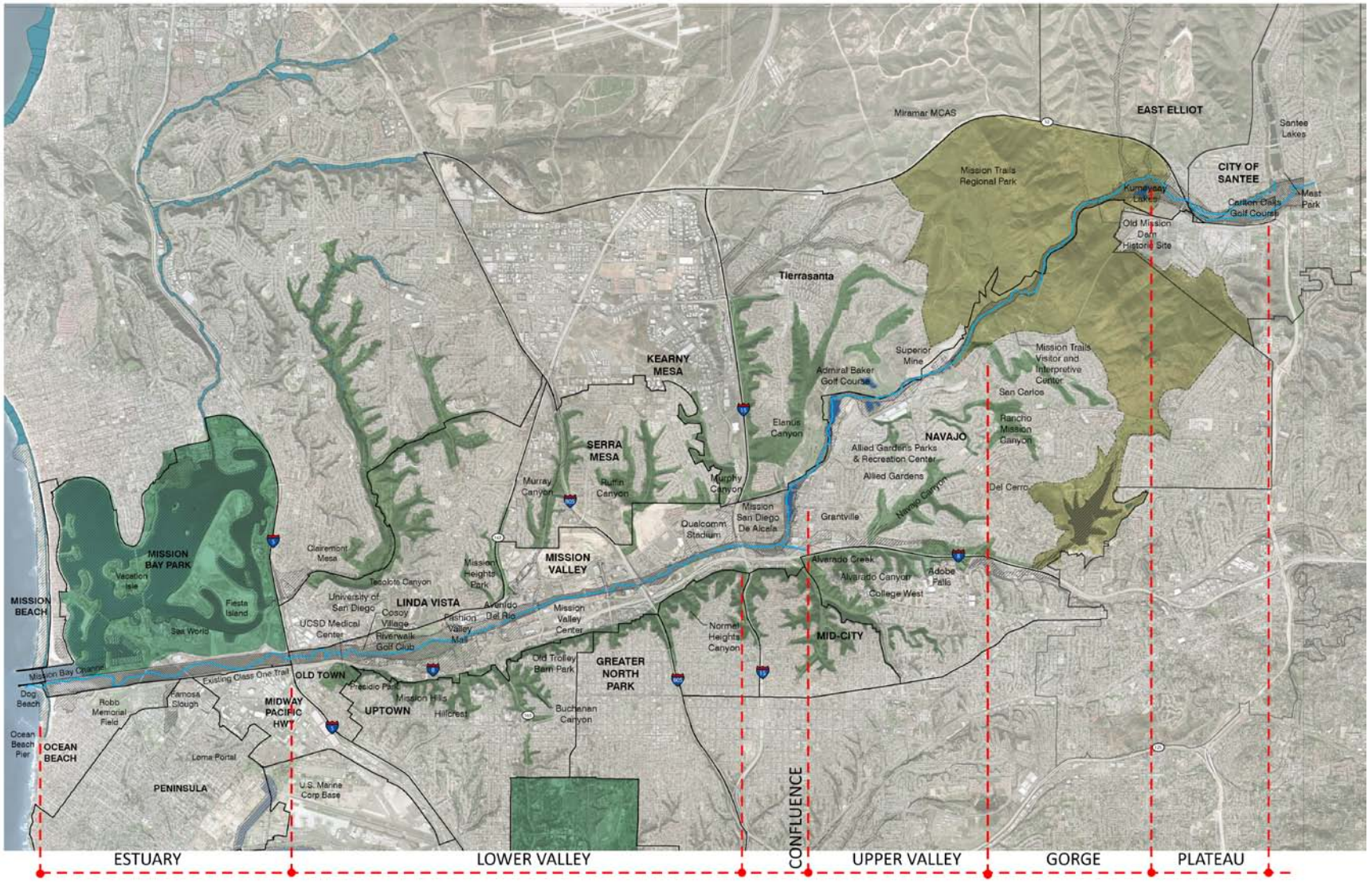


Figure 7. San Diego River Reaches

3.2.1 ESTUARY REACH

Overview

Extending from the Pacific Ocean to the western boundary of Mission Valley Preserve, the Estuary Reach is a unique habitat where the ocean waters converge with the fresh waters from upstream. The estuarine ecosystem at the mouth of the San Diego River is remarkably healthy, but significantly smaller than its original extent. The Derby Dike, built on the river's southern edge in 1852 by the United States Army to eliminate flooding into downtown, and the construction of the floodway channel berm on the north side of the river is responsible for this reduction in scale, separating the river from its delta that historically (and alternately) included both Mission Bay and San Diego Bay. This constructed river channel has also restricted and concentrated pedestrian and vehicle circulation, resulting in heavy containment of boundaries to the river channel.

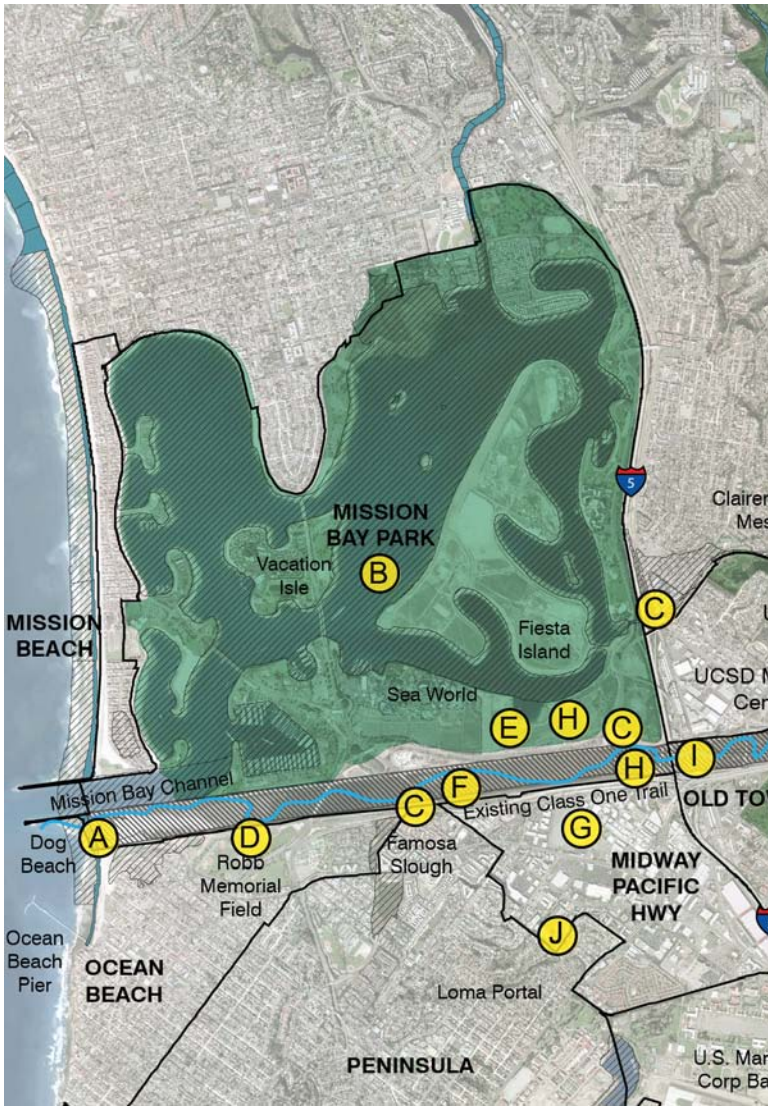
Diverse estuarine vegetation

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

The estuary supports rich avian and aquatic species

The estuary includes, or is adjacent to several significant existing parks and open spaces, including Ocean Beach Park, Famosa Slough Open Space and Mission Bay Park, (which includes Ocean Beach Dog Beach, Robb Field, Dusty Rhodes and the Southern Wildlife Preserve Open Space). The existing San Diego River pathway is on the south side of the river on top of the man-made river channel (the Derby Dike) and connects Ocean Beach Park to the Mission Valley Preserve. In addition, there is

a multi-use path on the north side of the river that follows the river to Friars Road and at this point the path is located on the public street. Dog Beach is located at the mouth of the river and is used regionally by many dog owners. East of Dog Beach is the Southern Wildlife Preserve, a unique habitat for waterfowl and shore birds, in addition to least terns. To minimize disturbance to the habitat, especially wintering waterfowl, only non-motorized boats are allowed to use the river channel west of the Ingraham Street Bridge from April through September. Obtaining a park use permit from the Park and Recreation Department is required prior to use of the river channel. The Park and Recreation Department instructs permit applicants on use restrictions and limits permits to ten for any given day. Fishing is allowed in the river channel west of Sunset Cliffs Boulevard. Wading in the river channel to fish is permissible at Dog Beach. Interpretive signs about the Estuary Reach and its relationship to the river are needed.



Estuary Reach

RECOMMENDATIONS

A. Create a San Diego River Park pathway kiosk at Dog Beach identifying the western entrance of the river pathway.

B. Support the goals of Mission Bay Park Master Plan (including Dog Beach, Robb Field, and Southern Wildlife Preserve), the Famosa Slough Enhancement Plan, and the Mission Valley Preserve. Support the replacement and construction of the West Mission Bay Bridge that will contain class I bike lanes on both sides.

C. Improve pathway and trail connections to Mission Bay Park, Famosa Slough, Tecolote Canyon, Southern Wildlife Preserve and other open spaces from the San Diego River pathway.

D. Create a kiosk at Robb Field identifying the entrance to the San Diego River pathway and re-landscape the area adjacent to the river with natives that relate to the estuary and river edge.

E. Provide a river and estuary interpretive center according to the recommendations of the Mission Bay Park Master Plan.

F. Create estuary overlook platforms along the San Diego River Park pathway that could include interpretive signs on the hydrology and habitat of the Southern Wildlife Preserve.

G. Study the potential to create a park with a recreational connection to the river and neighborhood when the Valley View Casino (formerly know at the San Diego Sports Arena) redevelops.

H. Provide interpretive signage along the river pathway about the rich history of the estuary including the development of Old Town, the construction of Derby Dike and the creation of Mission Bay Park.

I. Coordinate with Caltrans to establish a 'Green Gateway' at the intersection of Interstate 5 and the river valley by revegetating the interstate rights-of-way with native vegetation.

J. Create a pedestrian/bicycle connection between the San Diego River Park and San Diego Bay.

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

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

The river park must support planning efforts in Mission Bay Park to provide a river and estuary interpretive center, which could include educational opportunities, public art, and scenic overlooks. The facility should be oriented toward the river, and buffer the river edge with native vegetation.

3.2.2 LOWER VALLEY REACH

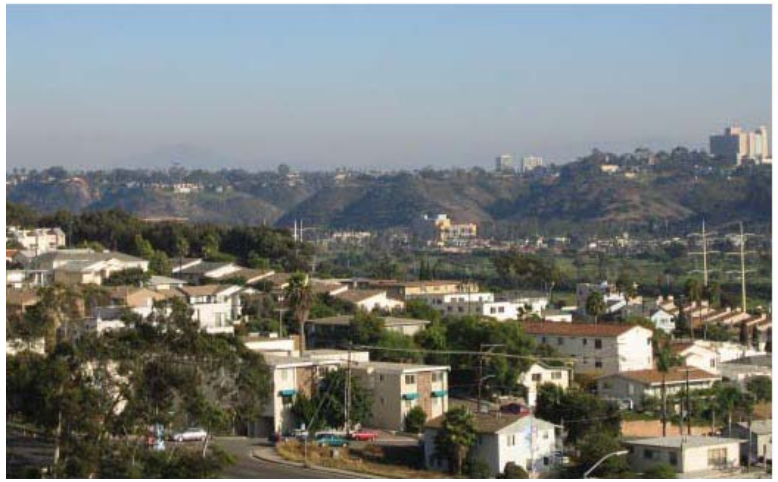
Overview

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

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

The surrounding communities within the Lower Valley Reach are particularly deficient in community and neighborhood parks and the San Diego River Park should play a role in addressing this need. In 2009, Sefton Field was dedicated to the city as a 19-acre population-based park, of which 7.37 acres are usable for ball fields and children's play area and the remaining acreage is a mitigation site for the construction of the

Lower Valley looking northwest



Lower Valley from University of San Diego looking southeast

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

RECOMMENDATIONS

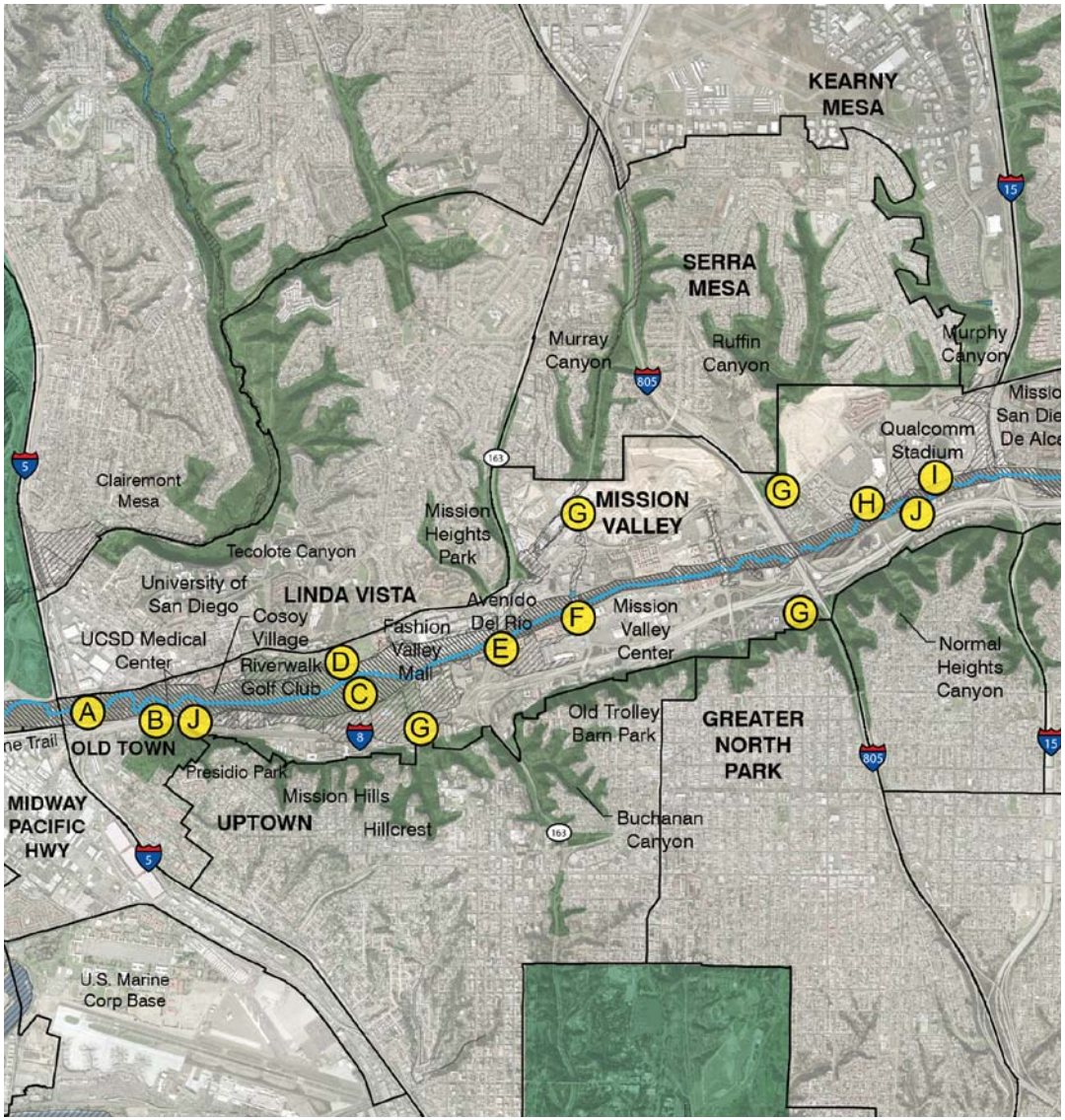
A. **Support the goals of the Mission Valley Preserve and provide additional interpretive signs on the role of the San Diego River in the Preserve.**

B. **Provide a connection between the San Diego River pathway and Presidio Park and a kiosk at Presidio Park to identify the river pathway. Provide a connection between Sefton Field to the south of the river and the YMCA to the north.**

C. **Explore options at the Riverwalk Golf Course to extend the river pathway along the trolley corridor as a short term measure until the Riverwalk Golf Course is redeveloped into a multi-use development. When the redevelopment occurs, extend the river pathway along the River Corridor.**

D. **Pursue opportunities to address the hydrology of the river, to provide public parks and to orientate the new development toward the river in Specific Plan areas, if amended.**

E. **Coordinate with Caltrans to establish "green gateways" at the intersection of State Highway 163 and Interstate 805 and the river valley by revegetating the freeway rights-of-ways with native vegetation.**



Lower Valley Reach

F. Construct bike and pedestrian crossings for the existing river pathway at FSDRIP at public street intersections, including Mission Center Road, Camino del Este and Qualcomm Way.

G. Create trail connections to the southern canyons of the Lower Valley, including Buchanan and Normal Heights Canyon, and to the northern canyons, including Murray, Murphy and Ruffin Canyons.

H. Create the river pathway connection from Fenton Parkway (on the south side of Mission Valley Library) to I-15 and pursue opportunities to provide a pedestrian/bicycle connection, over the river, from Qualcomm Way to Mission City Parkway.

I. Consider public recreation, the San Diego River pathway and a naturalized open space along the river when planning any future use of the city's property at the Qualcomm Stadium site.

J. Provide interpretive signage along the river pathway about the rich history of the Lower Valley including: the prehistoric Village of Kosa'aay (Cosoy) and Nipaguay; the first Spanish Mission in California; and the farming industry of the 1880's; the sand and gravel companies; the construction of the highway system; and the development of Qualcomm Stadium (formerly known as Jack Murphy Stadium).

The heavily suburbanized condition of the lower valley reach is deficient in developed public parks will require innovative park solutions. The San Diego River Park has the potential to combine "natural" programs, such as the healthy hydrology of the river and its ecological habitat, with "urban" programs, such as active and passive recreation and an accessible and urban corridor edge. By locating recreational activities, such as passive picnic areas or overlooks within the River Corridor Area and active recreational uses in the River Influence Area such as field sports or children's play areas, 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 river valley's highways, presents key opportunities to establish green gateways into the river area and the surrounding communities, extending the color and texture of native plant communities along the river.

Space for the river must be sought out in the Lower Valley Reach. Open space easements and property acquisition where feasible are necessary for the San Diego River Park to become a success. The future redevelopments of public land or undeveloped land are opportunities for creating parks and open space. Consistent recommendations regarding new development, streets and landscape should be established for the Lower Valley Reach. Establishing setbacks along the river will allow the San Diego River Park to provide for areas for passive uses as well as active uses.

Key Sites of the Lower Valley Reach

A. Riverwalk Golf Course Redevelopment Site

The Levi-Cushman Specific Plan for the Riverwalk Golf Course site was approved in 1987. The plan proposes roughly 5.2 million square feet of mixed-use development including residential, retail, commercial, office and recreational uses for the approximately 200-acre site. The specific plan aligns with the San Diego River Park Master Plan in focusing development on the river, and this concept should guide any future amendments 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 goals could be modified, in an amendment to the plan, to favor a naturalized river pattern as suggested in this Master Plan, increasing the channel width and areas for the river to meander naturally.

Illustrative river pathway concept at Riverwalk site

The San Diego River Park pathway can serve the site by providing an amenity to people living and working within the proposed development, as well as providing pedestrian and bicycle commuter access to surrounding neighborhoods and the trolley. The trolley right-of-way may offer the opportunity for an interim trail alignment, until a more defined redevelopment concept can determine the best permanent location. Because the Riverwalk Golf Course is anticipated to provide new residential development, there is an opportunity to establish public community and/or neighborhood parks. As the site redevelopment plans evolve, space for a public park should be sought adjacent to the river where possible. The nearby YMCA is expected to continue its private, fee-based recreation facility. Sefton Field will provide public recreation including ball fields and children's play areas. Connection to these public and private facilities could be strengthened with connected open space and a trail head near the YMCA.

View of the Riverwalk Golf Course

Key Points for Riverwalk Golf Course Site

- Create and maintain continuity of the river pathway for meeting transportation needs in Mission Valley.
- Acquire land to establish a community/neighborhood park.
- If the Levi-Cushman Specific Plan is amended, work with the developer to improve river hydrology, restore habitat, and provide the river pathway.
- In the short term, the river pathway could be developed following the trolley alignment, within the trolley right-of-way. In the long term, the river pathway should be developed within the River Corridor Area.

Qualcomm Stadium Site

Potential River Park Elements for Riverwalk Park Site

- Active recreation and children's play area
- Location visually or conceptually connected to the river
- Character reflecting the river's ecology and history

B. Qualcomm Stadium Site

Any potential redevelopment of the Qualcomm site creates the opportunity for a river-oriented approach that creates significant new open space and park land that could provide for active recreation. Any park land set aside should be adjacent to the river, but buffered with substantial naturalized open space that allows for a wider river channel and increased riparian habitat, transitioning to upland native vegetation at the trolley alignment.

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

Key Points for Qualcomm Stadium Site

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

Potential River Park Elements for Qualcomm Stadium Site

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

3.2.3 CONFLUENCE REACH

Overview

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

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

The river is also constrained by a series of old gravel mining ponds below the Friars Road Bridge; these ponds impede the normal hydrologic activities of the river system. Extensive exotic vegetation infestation is present both in the ponds (Ludwigia) and in the river (Arundo donax). As the river turns west, it is isolated by highway infrastructure, private property, and difficult physical terrain. The dense growth of Arundo further adds to the river's inaccessibility. The only section of the river pathway constructed in this reach is along the east side of the river adjacent

River is choked by invasive vegetation

Redevelopment in Grantville should encourage new development to orient to the river

to some of the existing commercial development. Access to the Mission San Diego de Alcalá from the river is along the public sidewalk along San Diego Mission Road.

The Confluence Reach contains the Grantville Redevelopment Subarea A of the Navajo Community. This area is directly adjacent to the east side of the river and has been zoned and built with industrial uses that have turned their backs on the river and used the area as a storage yard and in some cases a waste storage area. Through redevelopment of Grantville, the area could to be rezoned with active uses that orient to the river and ensure that the river side of the structures includes plazas, public access and architecture that will step back and allow for air and sunlight to be part of the river corridor. Public parks to serve new residential uses along the river should be located adjacent to the river where possible and provide connections to the river pathway.

In addition, redevelopment of Grantville could provide the tools to change the river landscape in the Confluence Reach. By engaging owners of under-utilized property on the east edge of the river corridor, the redevelopment of Grantville could create opportunities for the acquisition of land or establishing public access easements that could increase the river corridor width. A wider river corridor would allow the river to be separated from the ponds and offer space for passive recreation opportunities. Once the ponds are separated from the river, a complementary action might be improving them for more recreation activity, such as fishing or non-motorized boating. Any proposed recreation activities will require review and approval by the federal, state and local resource agencies during the discretionary review of a project proposal.

RECOMMENDATIONS

A. **Pursue a class I path along Rancho Mission Road and Ward Road and coordinate with the California Department of Fish and Game for a river pathway connection on their land along the south side of the river just east of Interstate 15. Ensure that trails are designed with safety in mind, and to encourage stewardship and litter prevention.**

B. **Provide for a river pathway connection to San Diego Mission Road from the north side of the river at Rancho Mission Road.**

C. **Improve water flow under the bridge at Mission Gorge/Fairmount Avenue for the Alvarado Creek to connect to the San Diego River. Provide a pedestrian connection under or over the bridge for access to the river pathway from Alvarado Creek.**

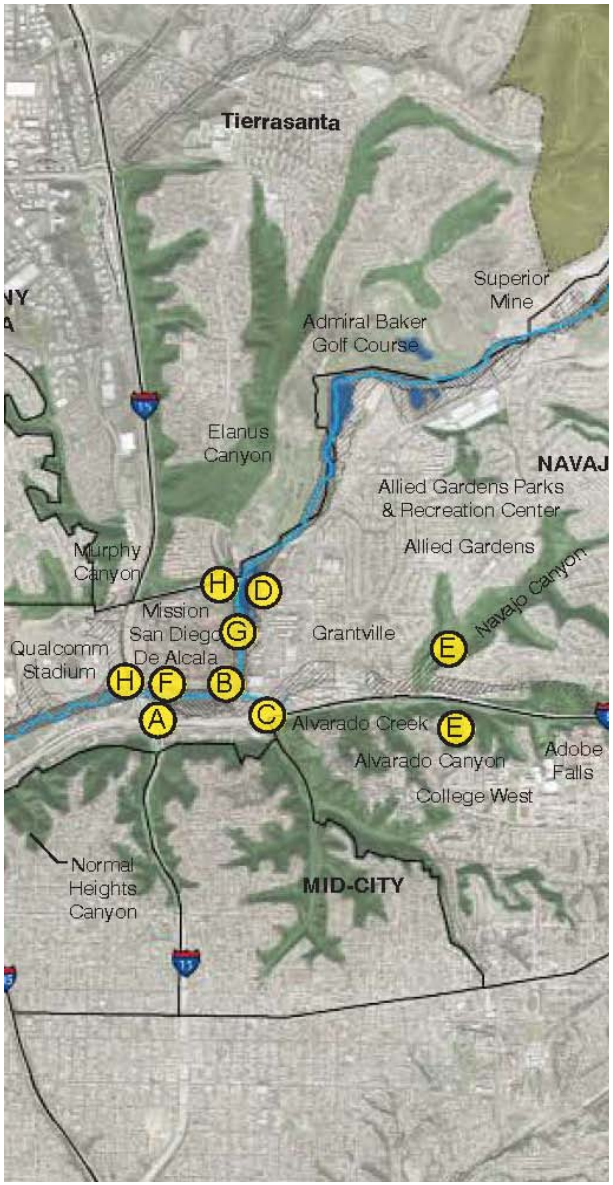
D. **Identify land for public parks and open space through land acquisition or open space easements and identify an alignment for the San Diego River pathway as Grantville redevelops.**

E. **Improve open space and trail connections with Alvarado Canyon and Navajo Canyon.**

F. **Create a connection between the San Diego River Park pathway and the Mission San Diego de Alcalá.**

G. **Study alternatives to improve the hydrology of the river where the river corridor is narrow and constrained by deep ponds that were created by past sand and gravel mining operations. Separating the river channel from the ponds is recommended where possible and feasible. In addition, it is recommended to remove barriers between pond sections to create a larger, deeper pond.**

H. **Provide interpretive signage along the river pathway about the history of the Confluence Reach including; Mission San Diego de Alcalá, the Kumeyaay village of Nipaguay at the historic mission site, the formation of the large Mexican land grants and the history of the sand and gravel mines.**



Confluence Reach

The redevelopment in the Grantville area will provide the tools to change the river landscape in the Confluence Reach. By engaging owners of under-utilized property on the east edge of the river corridor, the redevelopment of Grantville may create opportunities for the acquisition of land or establishing public access easements that could allow for a wider river corridor. The river corridor today is highly constrained, however by separating the existing ponds from the river; it may be feasible to accommodate space for a free flowing river. With the ponds separated from the river a more diverse aquatic habitat could be provided. A complementary action might be improving the ponds for recreation activity, such as fishing or non-motorized boating, with resource agency approval.

The west side of the river is steep and narrow, and does not have possibilities for trail construction; however, cantilevered construction may be considered, but could affect the river and habitat. The San Diego River Park pathway can be best accommodated on the east side of the river. There is significant potential to recreate an important wildlife habitat connection between the river valley, Murphy Canyon and Alvarado Creek. Such connections would represent a meaningful first step toward reestablishing the physiographic origins of the river valley. A trail and habitat/open space connection along Alvarado Canyon Creek would link Navajo Canyon with the river corridor, further unifying the river valley's recreational and interpretive resources.

Key Site of the Confluence Reach

A. Grantville Subarea A and Alvarado Creek Site

Alvarado Canyon combines with Navajo and Collwood Canyons to form the largest tributary canyon system linked to the San Diego River Valley within the City of San Diego. However, currently this connection is nearly invisible because of the scale of highway infrastructure and development that has constrained the canyon throat at the confluence. Replacing culverts with bridges and gaining adequate land to reduce the channelization of Alvarado Creek will re-establish the visual continuity of the canyon system with the river valley.

Key Points for the Grantville Subarea A & Alvarado Creek Site

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

Vegetation can soften the impact of concrete channels

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

Potential Park Elements for Grantville Subarea A and Alvarado Creek Site

- Path connection to the east side of Mission Gorge Road and Fairmount Avenue
- Wildlife habitat restoration
- Interpretation of the Grantville history
- Public parks that feature picnic areas, scenic or interpretive overlooks, fitness stations, seating and educational exhibit areas. In areas that do not contain sensitive habitat additional park amenities could include children's play areas, multi-purpose courts, and multi-purpose lawn areas. Recreation activities within the river, such as non-motorized water craft, could be proposed and will require Resource Agency approval at the time of a project proposal.
- Location visually or conceptually connected to the river
- Character reflects the river's ecology and history
- River function incorporated into design

3.2.4 UPPER VALLEY REACH

Overview

The Upper Valley Reach extends from Friars Road Bridge to the western boundary of Mission Trails Regional Park. It is a reach comprised of a complex natural environment as well as topographic features, with a diversity of experiences from the enclosure of steep valley walls in the east to a broad and open valley near Admiral Baker Golf Course. Heavily impacted by human activity, this reach has dense development on the south side of the river, sand and gravel mining along both sides of the river and a federal golf course on the north side of the river.

The Upper Valley Reach is characterized by three hydrologic conditions that are deleterious to the health of the river system. First, the sand and gravel operations west of 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. The golf course use 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). Exotics displace native riparian vegetation, causing the loss of the animal species that would typically inhabit this vegetation. Finally, the river channel is interrupted by a series of ponds that obstruct the natural sediment transport processes of the stream. A problem shared by other ponds in the system, the unnatural stream flow invites further infestation by non-native plant species; in still water conditions, the encroaching species is typically the surface plant Water Primrose (Ludwigia spp.).

Upper Valley looking east over Admiral Baker Golf Course

Superior Mine site

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

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

RECOMMENDATIONS

A. Coordinate with Navy Planners to explore opportunities to modify the Admiral Baker Golf Course, without impacts to the current recreational elements, to create a space for the San Diego River pathway, and to improve the relationship of the golf course with the river, such as controlling surface runoff from entering the river.

B. Improve open space and trail connections to Elanus Canyon north of Admiral Baker Golf Course.

C. Create public parks along the river pathway within the Grantville Area and explore opportunities for water recreation.

D. Separate the river channel from the old mining ponds, where possible, as land is redeveloped to improve the hydrology of the river.

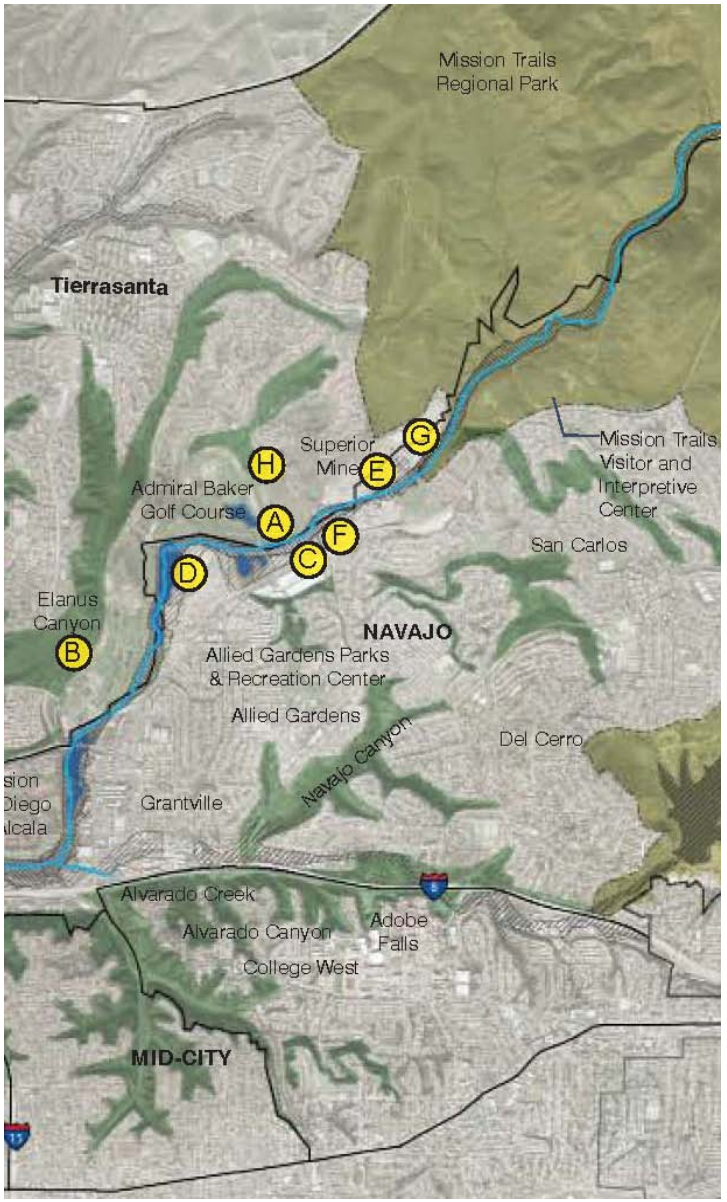
E. Coordinate with Superior Mine redevelopment project to improve the hydrology of the river, establish a naturalized open space and habitat areas adequate to achieve wildlife habitat objectives and provide for the multi-use river pathway. The redevelopment should also look for areas along the river to interpret the river valley's history, including the mining operations.

F. Construct the river pathway to connect to Mission Trails Regional Park when Grantville Subarea B redevelops.

G. Provide interpretive signage along the river pathway about the history of the Upper Valley Reach, including the Mission Dam and Flume that brought water to Mission Valley, the historic cattle ranches and the history of the sand and gravel mines.

H. Create trail connections to the river pathway from the Tierrasanta community and a connection from Tierrasanta Blvd. to Calle de Vida. Provide a kiosk at each trail head and at least one overlook at the higher elevation to mark the entrance to the San Diego River Park.

Within the Upper Valley Reach future development should look for



Upper Valley Reach

opportunities to increase river corridor width. A wider river corridor in the Upper Valley reach would allow the river to be separated from the ponds, and offer space for passive recreation opportunities. Separating the ponds from the river will improve the flow velocities and reestablish some degree of sediment transport. Hydraulic and hydrologic studies should be conducted in conjunction with redevelopment planning to determine the physical and hydrologic characteristics and ecologic condition of each specific pond, and provide recommendations as to the feasibility, ecological value and open space benefit of separating stream flow from the pond in each location.

The San Diego River Park pathway can be best accommodated on the south side of the river connecting to Mission Trails Regional Park. A pathway or smaller trail connection should be provided to the Tierrasanta community, linking this community to the River Park. In addition, interpretive signs should be placed along the pathway to provide an interpretive history of the Upper Valley Reach.

Key Sites of the Upper Valley Reach

A. Admiral Baker Golf Course Site

There are opportunities to integrate the golf course with the river corridor. Methods of meshing the two landscapes might include pedestrian trail connections along the golf course and the redevelopment of the golf course as a "links" or target type course with native landscaping between tees and greens. The incorporation of native plant species, creating a visual link and habitat corridor from the river corridor to Elanus Canyon north of the golf course, would be another strong step toward integrating the river and recreational environments.

Key Points for Admiral Baker Golf Course Site

- Continue on-going discussions with Navy Planners to find an appropriate level and means of integrating the golf course with the San Diego River Park.
- Expand critical habitat area and connections to Elanus Canyon north of the golf course.
- Create trail connections along the golf course.
- Establish habitat along the river for wildlife movement and habitat objectives.
- Create a trail connection from the Tierrasanta Community (adjacent to Tierrasanta Blvd.) to the river pathway with an overlook at the upper elevation.

B. Superior Mine Site / Grantville Subarea B

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

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

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

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

Key Points for the Superior Mine Site/Grantville Subarea B

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

Potential Park Elements for Superior Mine Site/Grantville Subarea B

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

3.2.5 GORGE REACH

Overview

The Gorge Reach is defined primarily as the Mission Trails Regional Park but also includes privately-owned land between Mission Trails Regional Park and Mast Boulevard. The Gorge Reach offers a strong sense of enclosure reinforced by the rising walls of Fortuna Mountain and Kwaay Paay Mountain. Established in 1974, Mission Trails Regional Park has preserved the river valley's original landscape of sage scrub, chaparral, and oak woodland and riparian habitats in exceptional condition. At approximately 8,000 acres, Mission Trails Regional Park is one of the largest urban parks in the nation, and a regional destination for hiking, biking, and wildlife viewing. The rich historic layers of the San Diego River Valley are revealed in many ways within the park. The Kumeyaay, Spanish missionaries and settlers, and 19th and 20th century ranchers and farmers have all left their mark on the land now within the bounds of Mission Trails Regional Park.

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

South Fortuna Mountain

Mission Trails Visitor Center Terrace

RECOMMENDATIONS

A. **Support the recommendations of the Mission Trails Regional Park Master Plan. Coordinate with the Mission Trails Regional Park to establish a continuous trail system through the park that would connect the west and east ends of the San Diego River Park pathway. While most trails are not paved in the Mission Trails Regional Park, the trail should provide for pedestrians and bicycle users.**

B. **Provide a kiosk at the west and east entrances to the Mission Trails Regional Park along the San Diego River Park pathway.**

C. **Support existing and proposed interpretation of the river and history of the park at the Mission Trails Visitor Center.**

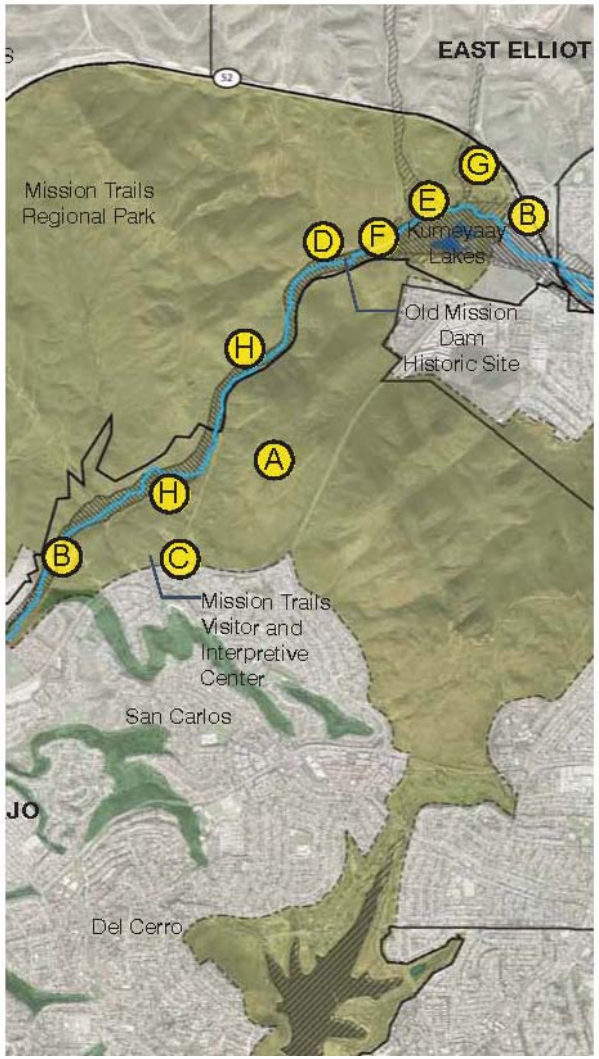
D. **Support the continual maintenance of the Old Mission Dam by dredging, and provide interpretive signage on why and how this type of maintenance is provided.**

E. **Study trail connections from Kumeyaay Lake campground to the future river pathway below State Highway 52.**

F. **Support the implementation of the Kumeyaay Lake Dredging and Berm Restoration to improve the hydrology of the river.**

G. **Study trail connections and alignments from the Equestrian Staging Area to the future river pathway below State Highway 52.**

H. **Provide interpretive signage along the river pathway about the history of the Gorge Reach including the Old Mission Dam, the historic cattle ranches and the creation of Mission Trails Regional Park.**



Gorge Reach

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

3.2.6 PLATEAU REACH

Overview

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

RECOMMENDATIONS

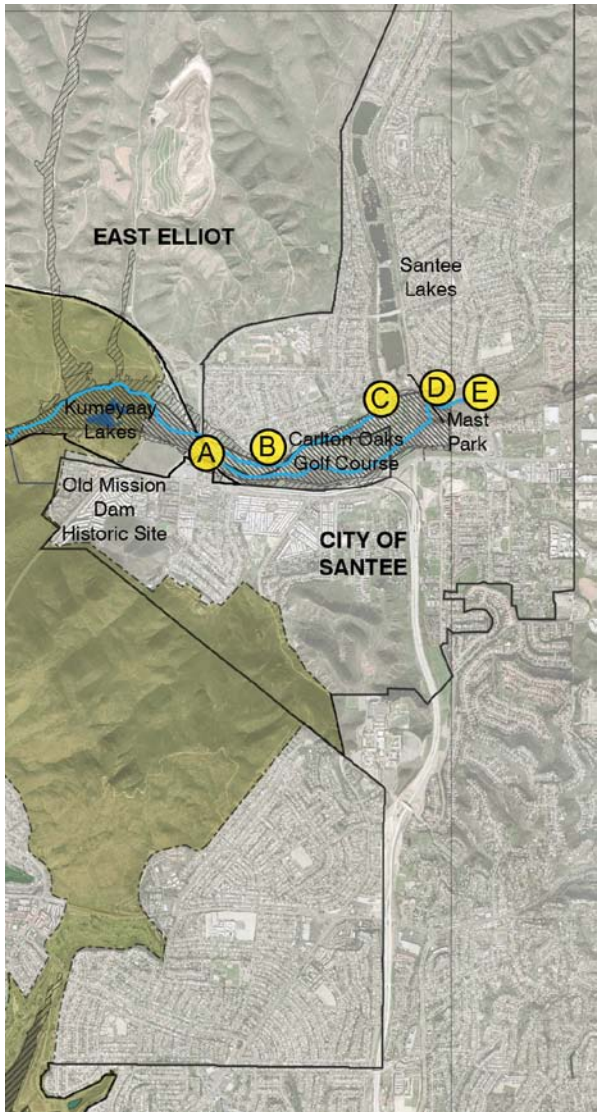
A. **Coordinate with Caltrans to identify potential alignment and methods to create the San Diego River Pathway under State Highway 52 and West Hills Parkway to the Carlton Oaks Golf Course.**

B. **Build the San Diego River Park pathway on the existing berm on the north side of the river along Carlton Oaks Golf Course and provide a connection to West Hills Parkway.**

C. **Initiate a dialogue with Carlton Oaks Golf Course to explore the potential to evolve the golf course edge into a naturalized landscape buffer with native plant species and a vegetation management plan that removes exotic plants. The buffer should be designed to provide habitat, as well as an infiltration device to treat the golf course surface runoff before it goes into the river.**

D. **Look at opportunities to restore the natural open space adjacent to the river if the golf course were to change in the future and the site is redeveloped into a new use.**

E. **Provide a kiosk at the boundary of the City of San Diego and the City of Santee that identifies the eastern end of the San Diego River Park.**



Plateau Reach

Key Site of the Plateau Reach

A. Carlton Oaks Golf Course Site

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

Key Points for the Carlton Oaks Golf Course Site

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

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

Invasive species removal project, vegetation management in practice

Illustrative Draft Concept for the San Diego River Park at Carton Oaks Golf Course (Location of River pathway subject to change)