

4.0 RIPARIAN REVEGETATION PROGRAM

4.1 EXISTING CONDITIONS, PROGRAMS, AND LIMITATIONS

The Riparian Revegetation Program for the Levi-Cushman property implements the goals of the San Diego River Wetlands Management Plan, Appendix G of the Mission Valley Community Plan:

...to define a means of maintaining and improving the overall quality of the wetlands associated with the San Diego River while allowing for development in Mission Valley. The intent of the plan is to establish a framework for accomplishing this goal by incorporating biological considerations into planning for development and flood management on the river. (MVCP, p. G-9)

The San Diego River Riparian Revegetation Program for the Levi-Cushman property consists of:

- (a) A redesign of the floodway to incorporate a 100-year flood control channel from Fashion Valley Road to the west end of the Levi-Cushman property at Street A;
- (b) A revegetation plan for the establishment of wetland habitats;
- (c) A management, maintenance, and monitoring plan for the flood control channel; and

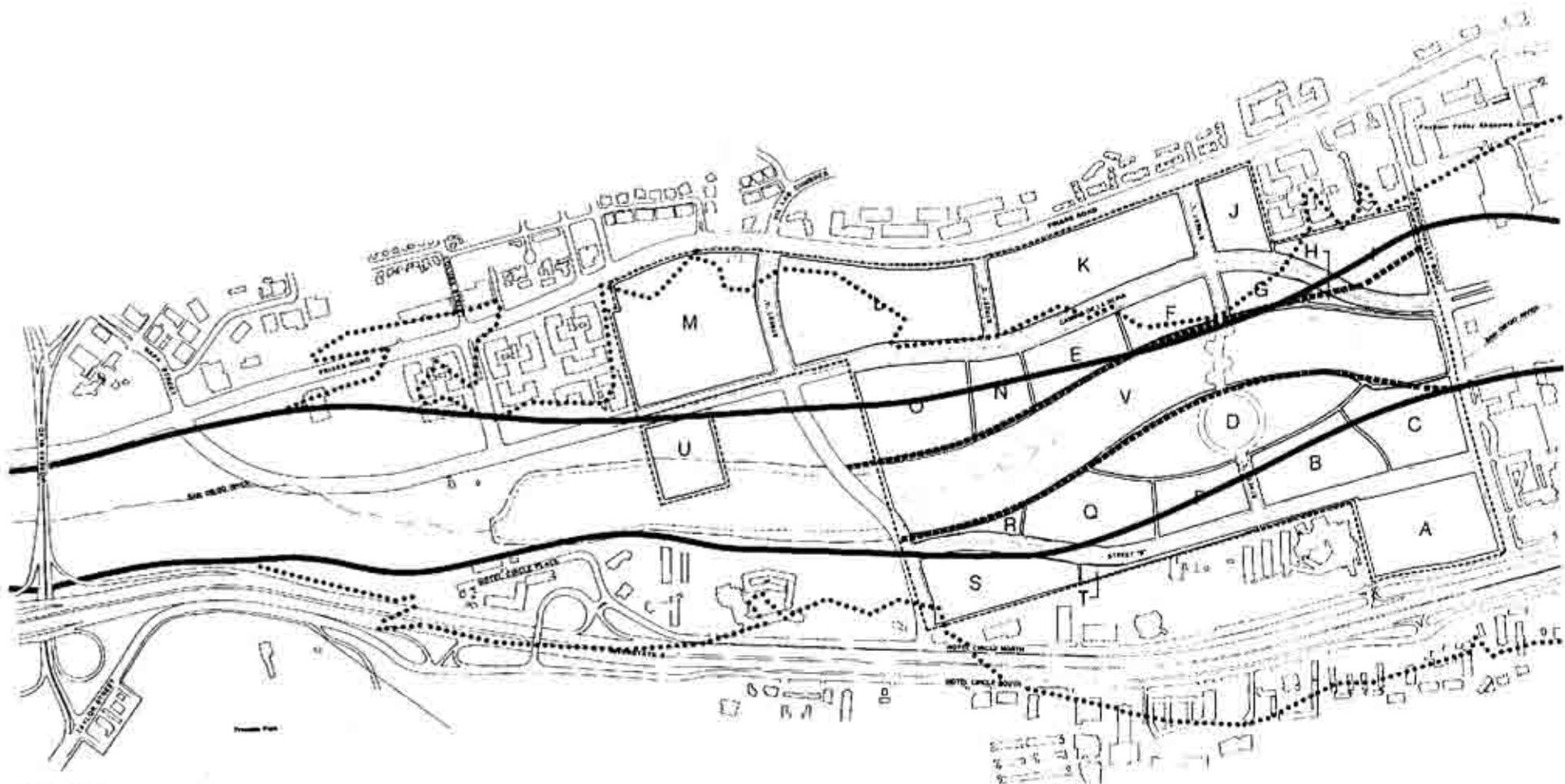
- (d) A series of improvements to the visual quality of the San Diego River.

The San Diego River floodway lies entirely within the boundaries of the existing golf course and encompasses approximately half of the Levi-Cushman property. This effectively limits development to a few narrow strips of land on the north and south of the floodway. No native wetland habitat exists on the property outside the narrow channel of the river itself. At Fashion Valley Road the San Diego River floodway is approximately 800 feet wide but narrows quickly to a width of some 400 feet. At the west end of the property it broadens again to 800 feet.

4.2 FLOOD MANAGEMENT

Reducing flood risk to both existing and proposed development in Mission Valley is a primary component of the Riparian Revegetation Program. This will be accomplished by channelizing the floodway of the San Diego River between Fashion Valley Road and Street A with a natural-appearing waterway with vegetated slope areas.

A peak water flow of 49,000 cfs was estimated by the U.S. Army Corps of Engineers for the river based on development of the entire watershed to its maximum potential. The flood control channel designed as part of this project will convey a peak discharge of 49,000 cfs without raising the calculated



LEGEND

- FLOODPLAIN FRINGE
- EXISTING FLOODWAY
- - - - - PROPOSED FLOODWAY

Circulation system is schematic; see Figure 5.2 for anticipated system improvements.

FIGURE 4.1

**LEVI - CUSHMAN
SPECIFIC PLAN**



**FLOODWAY,
EXISTING
AND PROPOSED**

surface of the existing 100-year flood level upstream or downstream of the project. To accomplish this, the existing floodway will be narrowed to a width of approximately 450 feet. Maximum depth will be approximately 26 feet, with the tops of the channel banks one foot above the level of a 100-year flood. The channel will be trapezoidal with 2.5:1 slopes. The area of floodway within the specific plan will be reduced from approximately 106 acres to 39 acres.

Because of the importance of minimizing damage to landscaping and limiting erosion of banks during flood conditions, the channel has been designed to maintain maximum flow velocities below seven feet per second in the vegetated portion of the channel. A minimum water depth in the project area of six feet will be maintained by a weir structure incorporated into the road crossing at the western end of the property. A drop structure to the west of Fashion Valley Road will act as an energy dissipater for flow onto the property. Riprap or other slope protection will be provided where flow velocities are calculated to be most severe and where erosion could be expected to occur. This condition is anticipated near Fashion Valley Road, at the upstream "nose" of the river islands, along pier embankments, and along the channel banks near Street A. In all cases, riprap will be earth covered.

At Fashion Valley Road, the river crossing will be improved to permit the flow of a 10-year flood level under the road, as will Camino De La Reina as it crosses Fashion Valley Road. The new crossing through the center of the property - i.e., the bridge to the island - will be designed above the 100-year flood

level. As well, all buildable pads within the property will be designed above the 100-year flood level.

4.3 WETLANDS REESTABLISHMENT AND MANAGEMENT

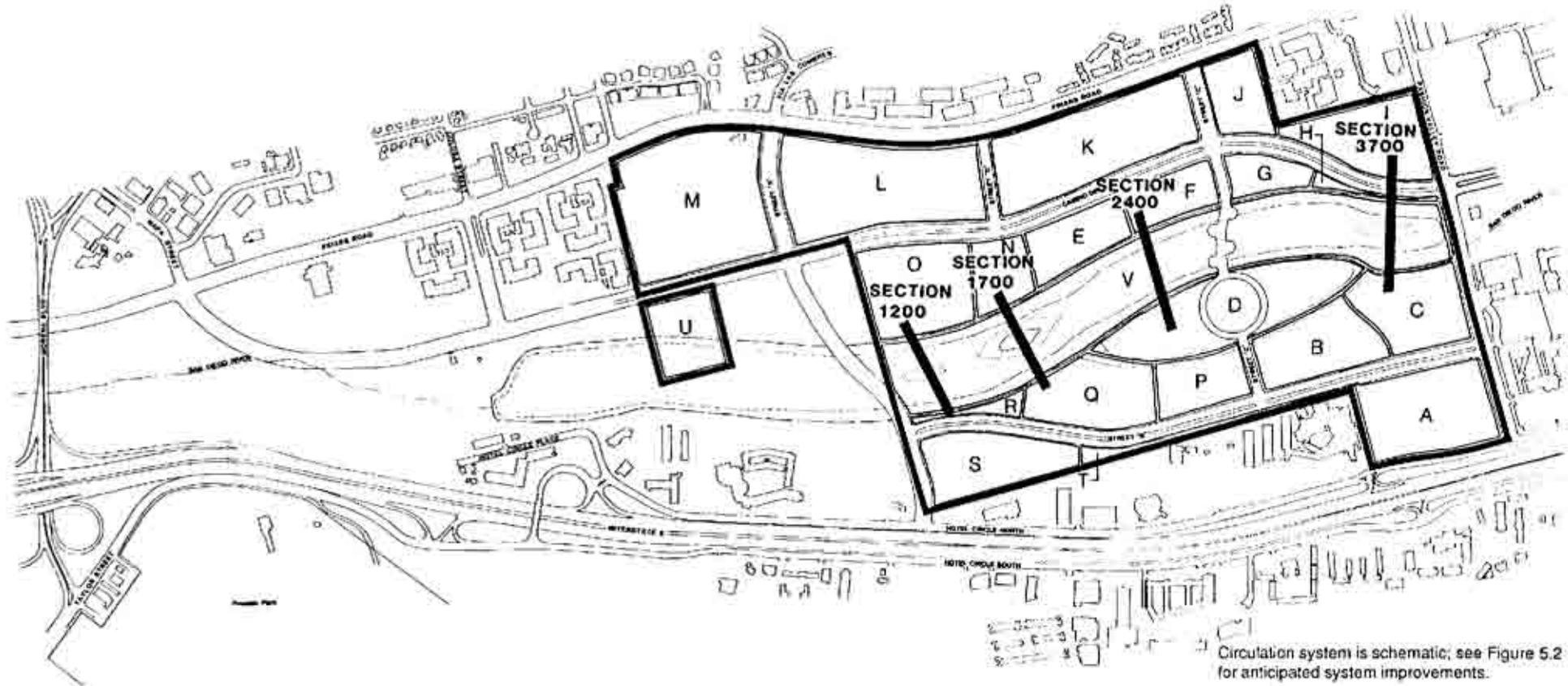
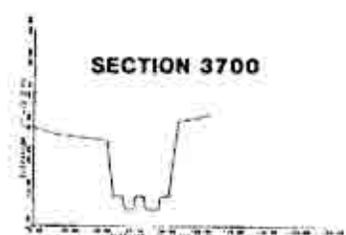
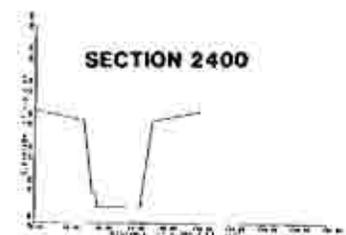
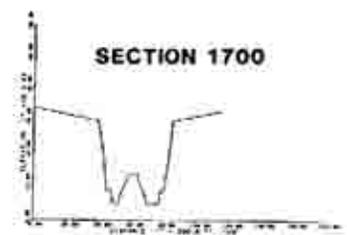
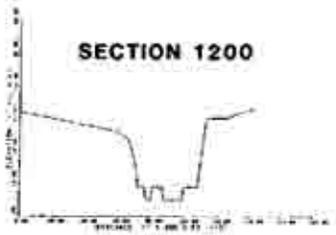
Mitigation for development within existing floodway is defined in the San Diego River Wetlands Management Program:

The established FW zone boundary encompasses a sensitive resource area wherein no modifications shall be permitted unless mitigation is accomplished in agreement with [the San Diego River Wetlands Management] plan. (MVCP, p. G-17)

The purpose of mitigation is also defined and qualified as to intent and limitations:

The primary purpose of this [plan] is to protect, preserve and enhance wetlands . . . , it is recognized that the floodway is within an urban setting and must serve multiple uses, [not] solely serve as wildlife habitat. (MVCP, p. G-15)

The Riparian Revegetation Program developed for this Specific Plan includes provision for a belt of continuous riparian habitat through the Levi-Cushman property. A conceptual wetland habitat design, depicted in Figure 4.3, shows areas of riparian woodland, freshwater marsh, and open water habitats in the channel. Details of the habitat reestablishment



Circulation system is schematic; see Figure 5.2 for anticipated system improvements.

FIGURE 4.2

LEVI - CUSHMAN
SPECIFIC PLAN



CHANNEL DESIGN
CROSS SECTIONS

program within the floodway are contained in the Riparian Revegetation Program, which is included in the LCSP EIR and in the Implementation Guidelines.

The Riparian Revegetation Program contains specific information on habitat development goals for the flood control channel and defines habitat species composition in the revegetation area, planting specifications, irrigation system requirements, and a management, maintenance, and monitoring plan.

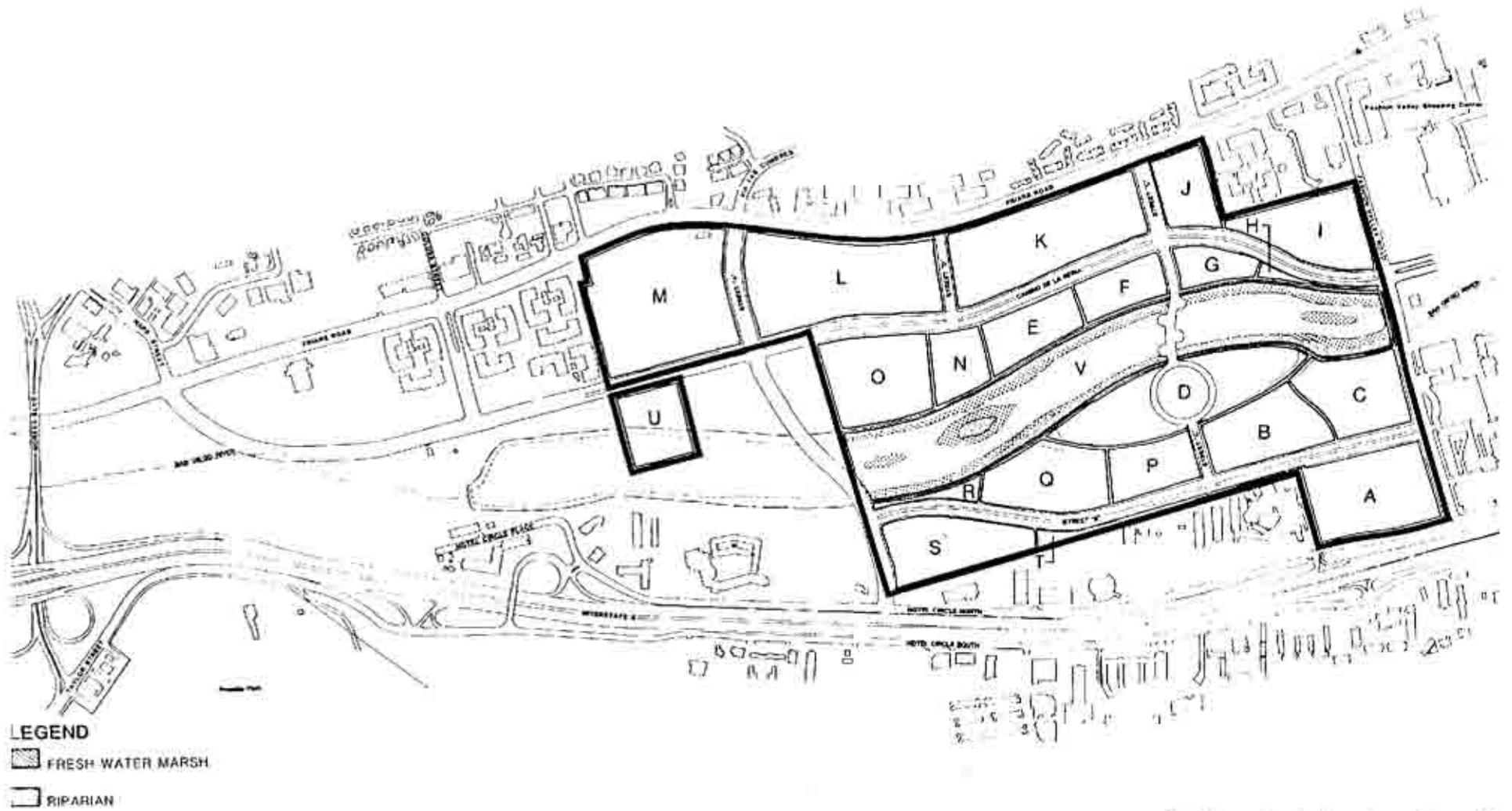
Included as part of the Riparian Revegetation Program are details concerning the management and maintenance of the floodway and marsh habitats during and after project construction. A technical management committee with representatives from the City of San Diego Environmental Quality Division, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game, working with the project biologist, will provide technical recommendations for attaining specified performance standards within the five-year monitoring period.

Appropriate construction phasing and revegetation under the Riparian Revegetation Program are critical to attaining Specific Plan objectives. To this end, the flood control channel will be developed in two phases, and the vegetation contract will include specifications and performance standards defined by the Riparian Revegetation Program and approved by the U.S. Fish and Wildlife Service. In addition to conforming with overall development phasing, channel construction phasing will allow for refining the revegetation strategy for

the entire channel area based on success of the initial revegetation phase. The project biologist will be an independent consultant charged with the responsibility for implementing a monitoring program to assure satisfactory completion of various tasks and phases and to provide data to the technical management committee. Construction and revegetation of the first phase of the channel will be incorporated into the first development phase. Implementation of channel construction and revegetation through the remainder of the project area will be triggered by any development in Development Area 3.

This revegetation plan is based on preliminary channel design studies and hydrologic data; therefore, refinements may occur at the request of the City Planning Director and City Manager during the development of the final Riparian Revegetation Program.

The intention of the Riparian Revegetation Program is the creation of wetlands habitat through the reach of the San Diego River that crosses the Specific Plan area. This wetlands will be a natural lake during the dry season providing habitat for a variety of water-dependent wildlife species and a free-flowing river during the wet portion of the year. The shallow water of the dry season lake (depths of six to seven feet) should be deep enough to inhibit filling in with vegetation, yet shallow enough to allow adequate mixing to prevent degraded water quality. Periodic dredging of the open water channel will be required as normal maintenance to assure the flood conveyance of the facility.



Circulation system is schematic; see Figure 5.2 for anticipated system improvements.

FIGURE 4.3

**LEVI - CUSHMAN
SPECIFIC PLAN**

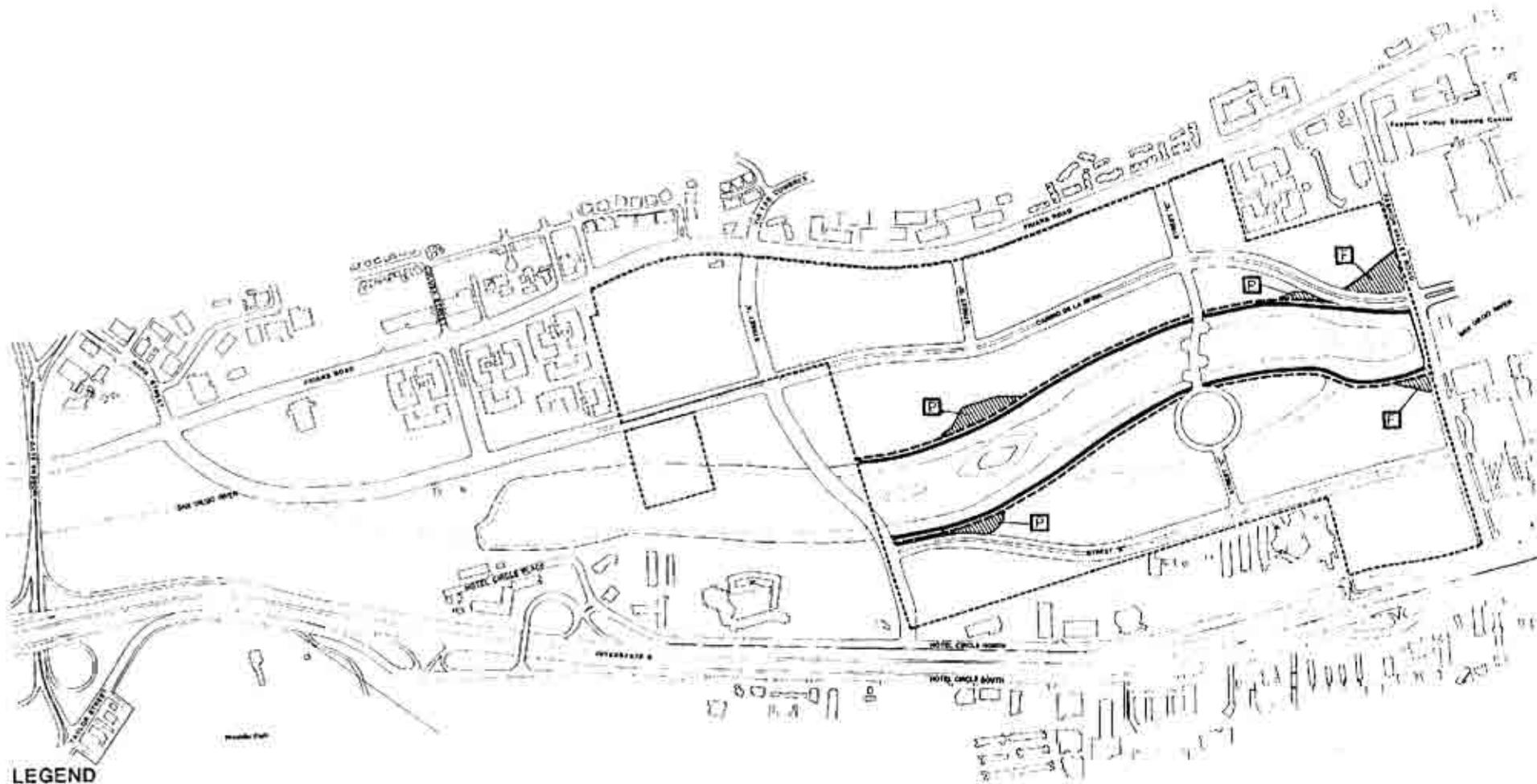


**REVEGETATED
RIPARIAN AREAS**

Management and maintenance of the wetlands reestablishment on the Levi-Cushman property will be the responsibility of the project proponents, although the City of San Diego may assume this responsibility so long as it is funded by LCSP landowners or tenants. A monitoring program will document the establishment and subsequent development of vegetation and habitat quality in the floodway five years after completion of the revegetation plan and will serve as a basis for subsequent maintenance recommendations. The management program will provide for three categories of activities:

- (a) Maintenance of biological resources in accordance with the scope of the revegetation program;
- (b) Maintenance of the hydraulic characteristics of the channel to insure adequate flood control; and
- (c) Maintenance of aesthetic quality of the facility.

To create and maintain a viable wildlife corridor within the floodway, habitat areas must be protected from excessive human disturbance. Habitat degradation can occur through noise, visual, or physical disturbance - the same forms that also degrade aesthetic values of the river corridor for human use. The vegetative barrier which begins at the top edge of the river channel will be planted with native riparian species trees and shrubs and function as a continuation of the wetland habitat. Where park sites and floodway transition areas abut the barrier, there will be an opportunity for special treatment areas where native species mingle with ornamental trees and shrubs.



LEGEND

- TOP OF CHANNEL
- - - VEGETATIVE BARRIER
- [Hatched Box] SPECIAL TREATMENT AREAS LANDSCAPED WITH NATIVE/ ORNAMENTAL TREES AND SHRUBS
- [P Box] PARK AREA
- [F Box] FLOODWAY TRANSITION AREA

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LEVI - CUSHMAN
SPECIFIC PLAN

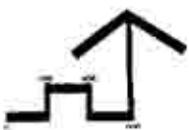


FIGURE 4.4
SPECIAL TREATMENT AREAS