

### III. River Improvement Element

#### A. OBJECTIVES

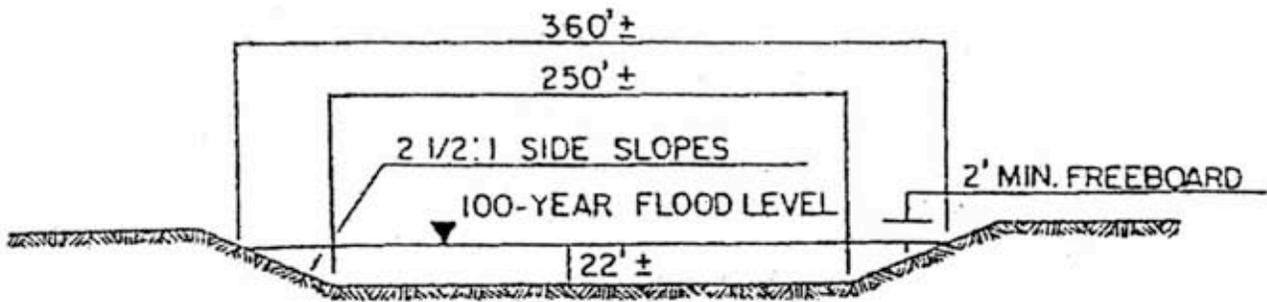
The River Improvement Element describes the improvements to the San Diego River and its floodway, which include the flood control channel, the management, maintenance and monitoring for the flood control channel, a revegetation plan for the establishment of wetland habitats, the recreation and open space that will be provided along the flood control channel, the improvements to the visible qualities of the San Diego River and the relocation and replacement of certain public utilities. A description of the area covered by the River Improvement Element is that property which would be zoned FW within the Specific Plan area as shown on the Zone Map, Figure 3, plus the buffer areas designated beyond the floodway proper.

The objectives of the River Improvement Element include the control of the 100-year flood (49,000 cfs) and the qualitative improvement and management of biological resources along the river. The objectives of this element also include the provision of passive recreation areas, a pedestrian/bicycle path and a nature trail. The improvements should adequately mitigate biological impacts, enhance the visual quality of the floodway and should provide a focal point for the private development on adjacent properties.

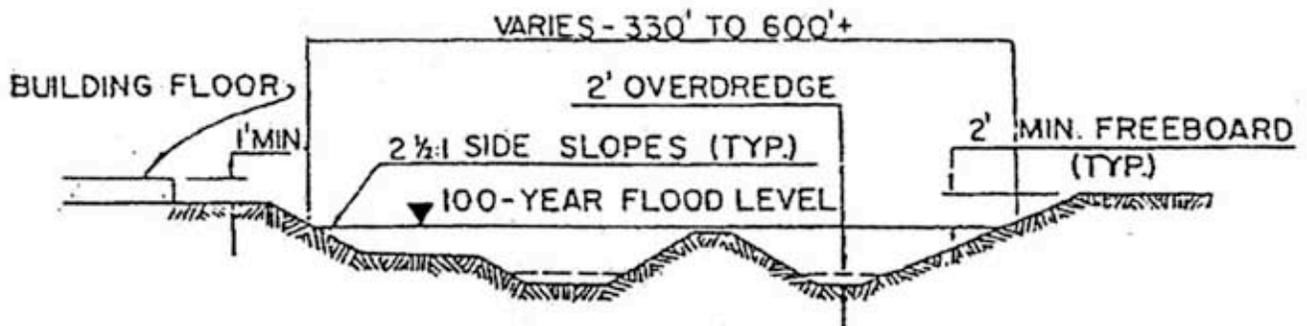
#### B. FLOOD CONTROL CHANNEL

The River Improvement Element provides for a reconfiguration of the existing floodway between State Route 163 and Interstate 805. The floodway has been designed to convey a peak discharge of 49,000 cubic feet per second (cfs) without raising the calculated water surface above the existing 100-year level. The peak discharge of 49,000 cfs was estimated by the Army Corps of Engineers based on the entire catchment basin being developed to its ultimate potential.

In general, the existing floodway will be narrowed and deepened. When completed, the width will vary from 330 to over 600 feet, with an average of approximately 360 feet between SR-163 and Stadium Way. The maximum depth will also vary, with an average of about 22 feet. The tops of the channel banks will be two feet above the level of the 49,000 cfs, 100-year flood. The basic shape will be trapezoidal with 2½:1 slopes on the channel sides. The channel has been designed to be a winding, natural-appearing waterway with heavily vegetated channel sides. A typical cross-section is illustrated in Figure 12.



NOMINAL CHANNEL DIMENSIONS



TYPICAL CROSS-SECTION



A maximum design velocity of 7 feet per second has been chosen to minimize flood damage of the landscaping and to prevent bank erosion. Energy dissipators will be provided in the form of three drop structures, located at the existing and proposed road crossings. Rip-rap slope protection will be provided in areas where erosion may otherwise occur, such as on the banks at and near road crossings, on the leading edge of islands, in areas where the flow is to be constricted, where the side slopes are steeper than 2½:1 and everywhere flow velocity is calculated to exceed 7 feet per second.

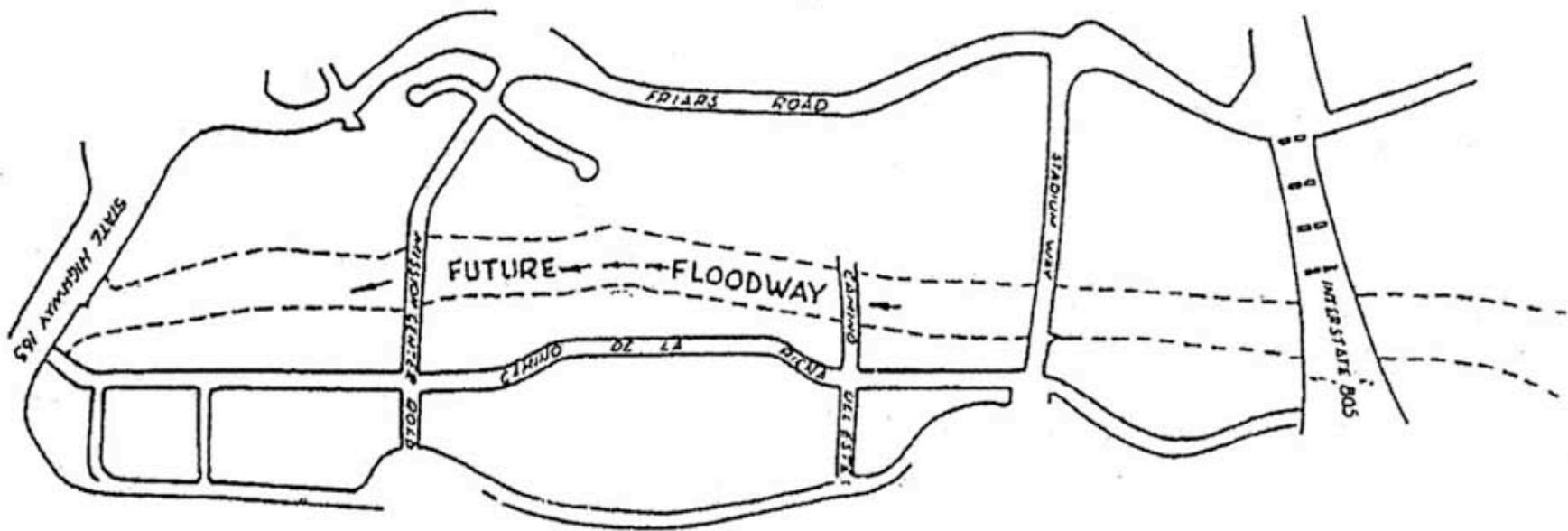
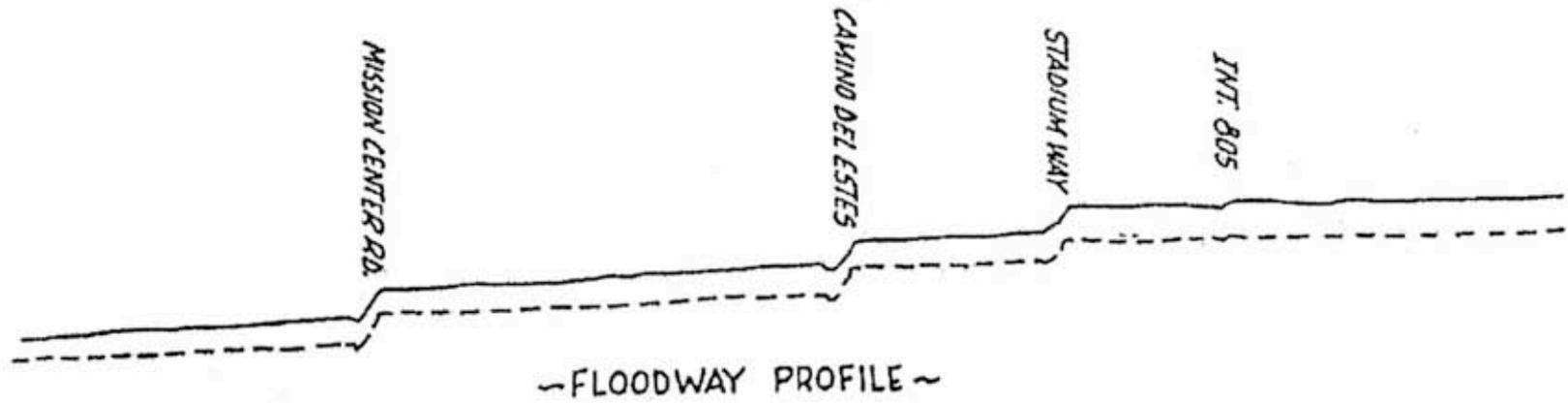
The project design includes the upgrading of both river crossings at Mission Center Road and Stadium Way, and the creation of a third crossing between the two at the northerly extension of Camino del Este. All three crossings are designed to pass the existing 10-year storm (3,100 cfs) in culverts and to act as drop structures. A section through all of these crossings, based on preliminary project plans, is shown in Figure 13. The project design will also protect Camino de la Reina from a 10-year flood.

### C. REVEGETATION PLAN AND MANAGEMENT PROGRAM

The Revegetation Plan's chief purpose is to mitigate for losses incurred to the San Diego River riparian/wetland habitats during the floodway improvements. The Revegetation Plan will provide at least 100% replacement of the existing riparian woodland, freshwater marsh and open water habitats and will provide a continuous vegetation corridor along both sides of the river. Existing riparian/wetland habitats include 37 acres of riparian woodland, 9.53 acres of open water and 14.24 acres of freshwater marsh.

Details on the revegetation of the floodway are contained in the Revegetation Plan, incorporated by reference (Nasland Engineering, June 3, 1983) and contained in Appendix 2 (under separate cover). The Revegetation Plan contains the following details: a plant materials list, specifications for planting, specifications for the quality of plant material, conservation of site-native plant material, irrigation system needs and a management, maintenance and monitoring plan.

The referenced Revegetation Plan is based upon preliminary design studies and as later design phases occur, amendments may become necessary as determined by the City Planning Director and City Manager.



**Profile of Flood Control Channel**

First San Diego River Improvement Project Specific Plan

**13**

FIGURE



A generalized map of the proposed habitat locations (riparian/woodland, open water, marsh and shrub) is provided in Figure 14 (Section IV). A detailed map of the proposed habitat locations is contained in the Revegetation Plan.

Phasing. The appropriate phasing of construction and revegetation in the River Improvement Element area is critical to the attainment of the Specific Plan objectives. Despite the fact that there are multiple private property owners affected, the flood control channel will be implemented as a single project. To achieve successful revegetation, a contract will be executed between the City and a landscape contractor, with specifications as to performance standards approved by the U.S. Fish and Wildlife Service. Satisfactory completion of certain tasks or phases will be evaluated by a consultant charged with the monitoring program, who will be independent of the landscape contractor and selected by the City.

The phasing plan for the floodway construction is described in detail in the Environmental Impact Report No. 80-03-41. The project is broken into three phases, each spanning roughly a one-year period. Work is scheduled to begin on the west end of the site and proceed easterly. The revegetative phasing is summarized in the Administration Element and is explained in detail in the Revegetation Plan.

Management, Maintenance and Monitoring Plan. The Revegetation Plan also provides details on the management and maintenance of the floodway area. A monitoring program will document the regrowth of the riparian and marsh habitats during project construction and after revegetation. The monitoring program will continue for 10 years after the revegetation of the last phase, with the preparation of semiannual reports. The monitoring information will serve as the basis for management recommendations. Three agencies, the City of San Diego Environmental Quality Division, the U.S. Fish and Wildlife Service and the California Department of Fish and Game, will form a committee for technical management practices, with which the project biologist (monitoring consultant) will consult. This committee will provide technical recommendations, which will be carried out by the City.

Routine maintenance will consist of three elements: 1) maintenance of biological resources as indicated by the management program, which shall include appropriate steps to be taken to insure hydraulic efficiency; 2) maintenance dredging of the channel bottom to ensure hydraulic efficiency; and, 3) maintenance of aesthetic quality by

trash clean-up and repairs of facilities. The design of the floodway will insure that the biological mitigation program can be achieved concurrent with necessary hydraulic parameters.

Project proponents shall maintain the flood control channel to insure adequate flowage in perpetuity at no cost to the City in accordance with an agreement to be entered into with the City.

#### D. PERMITTED USES WITHIN AND ADJACENT TO THE FLOODWAY

In order to create and maintain a viable wildlife corridor within the floodway proper, it is necessary to protect the native habitat areas from excessive human disturbance. A degradation of both the native habitats and their use by wildlife can occur through either noise, visual or direct physical disturbance. These same forms of disturbance can also degrade the aesthetic value of the river corridor for human use. For these reasons, buffers should be provided and activities should be restricted along and within the floodway.

Buffers. A substantial buffer area, planted with native species of coastal sage scrub and native trees, is needed to protect the river's habitat and to create greater edge and diversity. Specific criteria for these buffer areas is presented in the Urban Design and Development Guidelines section and should be carefully implemented.

Permitted Uses. A primary objective associated with the floodway improvements is to create a natural open space corridor. Therefore any facilities located within the 100-year floodway should not reduce either the quantity or quality of the native habitat areas. Any passive recreation facility, such as a pedestrian/bicycle path and a nature trail, should be placed within the floodway only where more sensitive habitat areas can be avoided.

Uses within the buffer areas adjacent to the floodway should also not intrude upon or degrade the habitat value of the floodway. Passive recreation facilities within the buffer areas are permitted and encouraged.

#### E. ROLE OF THE FLOODWAY AS A PARK

The General Plan identifies the San Diego River in Mission Valley as one of the key open space areas in the City for development as a natural park and recreational area in conjunction with flood protection.

The floodway proposed in this Specific Plan will cover approximately 88 acres and will serve as a natural park. Native habitats in the area will be replaced on at least a one-for-one basis and the Revegetation Plan will result in the qualitative improvement of these habitats (riparian woodland, marsh and open water) over existing conditions. The 100-year floodway property will be placed in an open space easement.

Passive recreation will be provided to the extent that these facilities are compatible with habitat preservation. Pedestrian and bicycle paths, a nature trail, picnic areas and rest or view areas will be provided within the floodway and within adjacent buffer areas (Figure 20). Criteria for the provision of buffer areas and for the location of recreational facilities are contained in Section IV, Urban Design and Development Guidelines.

The natural open space system created within the floodway will serve as a regional resource, with access and parking provided for the general public and with view corridors from public roadways.

#### F. FLOODWAY CROSS - SECTIONS

Typical cross-sections of the conceptual landscape development plan are provided in the Revegetation Plan. These cross-sections show the flood control channel after the River Improvement Element is completed.

#### G. UTILITIES AND STORM DRAIN IMPROVEMENTS

Utility Relocations. The construction of the First San Diego River Improvement Project will require the relocation of some public and private utilities. The most significant of these is the existing temporary trunk sewer traversing the valley from east to west.

Approximately 3,000 linear feet of the temporary sewer between Mission Center Road and Stadium Way must be relocated. The existing pipe is an unlined 54-inch diameter concrete pipe which was constructed in the early 1960's. At the time it was constructed, it was expected to have a service life of approximately 20 years. The proposed replacement is a 66-inch diameter plaster lined concrete pipe which will be considered permanent. The project proponents shall bear an equitable portion of the cost of this relocation, since the existing pipe has not reached the end of its service life. The balance of the cost attributable to the placement of a larger pipe and the

removal of the old pipe shall be paid out of public funds when such funds become available, which shall be specified in an agreement between the proponents and the City.

Construction of the trunk sewer line should provide adequate access to the line from dry land.

Other utility relocations are relatively minor. A private sewer main crossing the river in Mission Center Road will be replaced with a public main. The support poles for the existing overhead power line crossing the river at Mission Center Road will also need to be relocated.

An existing 16-inch cast iron water main also crosses the river near the west end of the project. This main can be abandoned across the channel.

Improvements to Local Storm Drain Systems. Included in the River Improvement Element is the construction of a number of storm drain pipes and culverts. The proposed configuration of the existing and proposed storm drain systems is shown on the preliminary project drawings. The detailed design and sizing of these minor storm drains has not been accomplished at this time, but will be required as part of the Administration Element of the Specific Plan. Construction of these storm drains will be accomplished in conjunction with the grading operations.