

The Day the San Diego River Was Saved: The History of Floods and Floodplain Planning in Mission Valley

by Philip R. Pryde, Ph.D.

*We will only conserve what we love;
We will only love what we understand;
We will understand only what we are taught.*
Baba Dioum

Rivers have defined many of the world's great cities—think of London, Cairo, Paris, New Orleans, and others. The San Diego River is not quite as impressive as the rivers that flow through these cities but, in its own way, it too has defined significant aspects of San Diego's history and development. In the middle of the twentieth century, however, its death knell was being actively discussed, in the form of a concrete flood channel from the Pacific Ocean to Grantville. The story of how the San Diego River dodged this potentially fatal bullet is not only fascinating, but also instructive, reminding us of the intrinsic importance of all our free-flowing rivers and the need to protect them.

The Context

The San Diego River rises in the hills surrounding Julian and drops over 4,000 feet to its rendezvous with the Pacific Ocean at Ocean Beach. Most of its tributaries, like other streams in the county, are dry much of the year, but can occasionally flow with impressive volumes of water. They support one of the county's most

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Fig. 1. Mildred Falls on Ritchie Creek showing its 300-foot drop. Photo courtesy of the San Diego River Park Foundation.

productive wildlife habitats—riparian forests. And they harbor surprises: many county residents are not aware that a couple of the river's tributaries also contain two truly spectacular wet-season waterfalls, Cedar Creek Falls and Mildred Falls.¹ The latter, located a few miles west of Pine Hills, drops some 300 feet down a sheer rock face (Figure 1). A more arid Yosemite comes to mind.

The River, of course, was the birthplace of the City of San Diego and, by extension, the State of California as well. Long before the arrival of Father Junípero Serra in 1769, the benefits of living near the river were well known to the Kumeyaay Indians who

resided in its valley. Both the Native Americans and the missionaries knew it as a source of both food and potable water, although the latter was not necessarily reliable twelve months of every year. To overcome this problem, the Spaniards



Fig. 2. Coast Highway bridge on the San Diego River destroyed by the 1916 flood. ©SDHC #6015.

moved their settlement several miles upstream—to Mission San Diego de Alcalá—where they could obtain both year-round potable well water and water via an aqueduct from Padre dam.

For almost two centuries, little happened in the valley except agriculture and scattered Native American encampments. After World War II commercial development began, continuing at accelerated paces ever since.² The development tended to hide the river, and it was easy to find newer residents who, fooled by our generally arid climate, had no idea there was even a river there.

Dry years and droughts were not the only periodic problems associated with the San Diego River. Occasional wet years and high levels of upstream run-off could produce significant floods.³ The huge flood of 1916, which cut off San Diego from Los Angeles and destroyed the Lower Otay Dam, is well chronicled, and is the largest flood having an officially calculated size estimate (Figure 2).⁴ An even larger deluge, however, is believed to have occurred in 1862, and several other very large floods are recorded in the last third of the nineteenth century. A good overview of some of the major flooding events in San Diego County can be found in the Spring 1971 issue of *The Journal of San Diego History*.⁵ Interestingly, there is a rather poor correlation between the rainiest years in San Diego, and the years of the largest San Diego River floods (Table 1, Figure 3).

In the twentieth century, the ten largest floods occurred in 1916, 1918, 1921,



Fig. 3. Aftermath of the 1941 flood on the San Diego River. Photo by Dr. Lauren Post.

Table 1. Largest San Diego River Floods of the Twentieth Century [a]

						Rain	
	Rain	Month	Maximum		Rain year	year	
Rank	Year [b]	of Flood	cfs [c]		precipit'n	rank	
1	1915-16	January	70,200		12.55	24	
2	1926-27	February	45,400		14.74	15	
3	1921-22	December	16,700		18.65	3	
4	1936-37	February	14,200		15.93	9	
5	1917-18	March	12,000		8.04	[d]	
6	1982-83	March	9,590		18.26	5	
7	1940-41	April	9,250		24.74	1	
8	1931-32	February	7,400		13.18	20	
9	1937-38	March	7,350		9.72	[d]	
10	1994-95	March	6,010		17.12	8 [e]	
11	1997-98	February	5,450		17.78	7	
12	1925-26	April	4,540		15.66	11	
13	1951-52	January	4,390		18.16	6	
14	1914-15	February	3,960		14.41	17	
15	1990-91	March	3,640		11.79	25	
16	1992-93	January	3,460		18.31	4	
17	1979-80	February	3,420 [f]		15.72	10	
18	1966-67	December	3,400		10.63	ave.	
19	1977-78	January	3,010 [f]		18.71	2	
20	1981-82	March	2,900		11.50	27	
[a]	Actual years covered by available data are 1914 to 2001.						
[b]	In California annual rainfall is measured from July 1 to the following June 30.						
[c]	Cfs = cubic feet per second (at maximum flood flow).						
[d]	Annual precipitation for this year was below the mean.						
[e]	Note that 8 of the 10 largest floods occurred prior to 1942. This can be attributed mainly to the absence of dams on the river at that time.						
[f]	The peak run-off data for Jan. 1978 and Feb. 1980 may be understated. It seems questionable that the peak flow of 1983 was three times that of 1978 or 1980. Water was so high in 1980 that Mission Valley was evacuated. No such emergency was declared in 1983. Also, there was no recording gage in Mission Valley in 1978 and 1980.						
	Sources: U.S. Geological Survey; U.S. Weather Bureau						

1927, 1932, 1937, 1938, 1941, 1983, and 1995 (Table 1). The largest of these could be counted on to put significant portions of Mission Valley under water. By 1950, San Diego was rapidly expanding as a result of the boost that World War II gave the economy. Some people saw the flood potential in Mission Valley as a threat to economic prosperity. The stage was set for the great debate over the future of the San Diego River.

The Threat

As most people know, when it comes to natural forces and landscape redesigning, “water rules.” But during the period from roughly the 1930s through the 1970s, the federal and state dam building agencies disagreed, and operated under the tacit maxim that “water projects rule.” This era produced such mega-projects as Grand Coulee and Hoover dams, and the Colorado Aqueduct and the State Water Project. It also produced the discredited Cross-Florida Barge Canal and Everglades drainage projects, as well as the disastrous “MR.GO” (Mississippi River-Gulf Outlet) canal that allowed Hurricane Katrina direct access into downtown New Orleans. Not all water project ideas are good ones.

But this was the era when people in power thought it was desirable to redesign nature. And if the San Diego River was prone to flooding, well then, it needed to be tamed. The taming had actually begun in the 1850s, when “Derby’s Dike” was built to direct the river westward so that it would not bring unwanted sediment into San Diego Bay (Figure 4).⁶ It lasted only two years, but a new dike was built in 1876.

The perceived twentieth-century flood threat required much larger-scale taming. In the early 1940s,

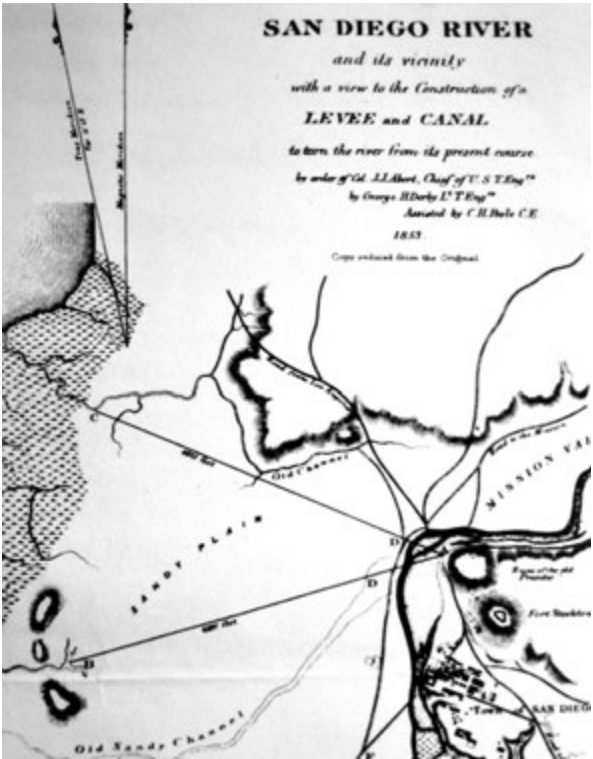


Fig. 4. The lower San Diego River area in 1853.



Fig. 5. Agriculture in Mission Valley, about 1954. Photo by Dr. Lauren Post.

the War Department (now the Department of Defense) stressed the need to prevent siltation in San Diego Bay. A recommendation for a new and larger dike, prepared in 1942, was authorized by acts of Congress in 1944 and 1946.⁷ The U.S. Army Corps of Engineers prepared a hydrologic study for the river in 1947, and a channelization project for the western end of the river was approved two years later.⁸ The current rock-sided channel west of I-5, completed in 1953 ensured that the river would never flow into either one of the two bays again. At that time most of Mission Valley was still in agriculture, but that quickly would begin to disappear (Figure 5).

By the late 1950s, with the 1953 channel now a reality (and perhaps with visions of its extension farther up Mission Valley), large developments such as the May Company's Mission Valley Shopping Center began construction. The incipient commercialization of the Valley was lamented by a few writers, as well as by planning organizations such as Citizens Coordinate for Century 3.⁹ As a reflection of the new development, by 1960, a much larger flood control project was being discussed—one that would encompass all of Mission Valley. Accordingly, the City of San Diego requested the U.S. Army Corps of Engineers to recommend a solution to the perceived San Diego River flood problem. Not surprisingly, they did.

The initial step was a public hearing attended by ninety-three people held on April 5, 1961. The purpose of this hearing was to get community input regarding the preparation of a new Corps of Engineers report, and did not focus on any specific plan. Of significance, however, was the following comment in the 1964 report about this 1961 hearing, stating, "Local interests expressed their desire for

a plan of improvement through Mission Valley similar to the existing Corps of Engineers' improvement from Morena Boulevard to the ocean, which is a channel with rock-revetted levees."¹⁰ In other words, even back in 1961, San Diegans were making clear that they did not want a Los Angeles-style concrete channel in Mission Valley. But that was precisely what the Corps presented to them three years later.

To further facilitate the flood channel project, the San Diego City Council passed a resolution on August 29, 1963, guaranteeing that the city would carry out all its obligations with regard to a channel, including land acquisition.

The result was a preliminary recommendation for a massive flood control channel on the San Diego River, presented by the Corps in 1964.¹¹ It envisioned a rectangular concrete structure 200-250 feet wide and 23-25 feet deep, running the entire length of Mission Valley. It would have begun at Zion Avenue in Grantville and continued westward through the valley, joining the existing rock-sided channel that begins just east of I-5. As noted, the latter had been constructed in 1953 to ensure that the river would carry its sediments due west to the ocean, rather than into the bays. The Corps' new project for the Valley also called for concrete side channels in Alvarado, Murray, and Murphy Canyons.

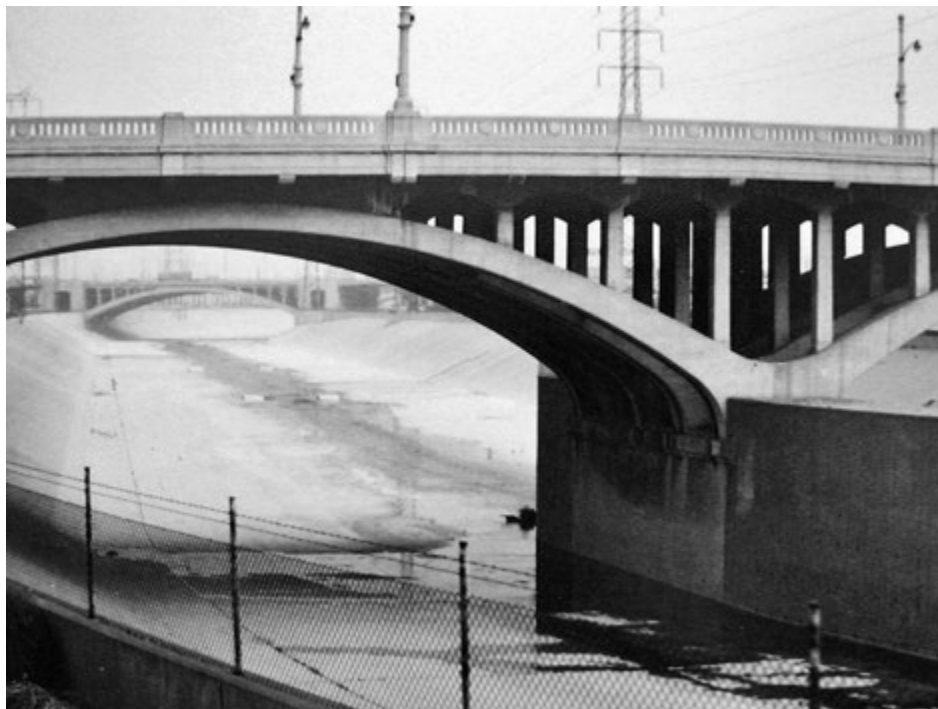


Fig. 6. The Los Angeles River concrete flood channel. Photo by P.R. Pryde.

The main large channel in Mission Valley would have looked almost exactly like the concrete channel that replaced the Los Angeles River through that city's downtown area, and which L.A. residents are now actively talking about removing (Figure 6). Its size would have accommodated a flood flow of 115,000 cubic feet per second (cfs), a number that might be hard to visualize unless one is well versed in hydrology, but the reader can probably envision a huge amount of water. By comparison, it is larger than any flood that has ever been measured on the San Diego River (including estimates for the 1862 flood), and indeed is larger than the average flow of the Columbia River as it enters the United States from Canada!¹²

To give the Corps of Engineers the proper authorization to conduct additional, more detailed studies for a flood channel, Congress passed Public Law 89-298 in October 1965, formally approving the concept and authorizing the preparation of a flood control project on the San Diego River in Mission Valley. In May 1967 the city passed an ordinance to provide for a Flood Channel Zone in Mission Valley,¹³ and a city publication that year said, "Construction for this project is scheduled to begin between 1968 and 1970."¹⁴

While few San Diegans were aware of the proposed plan at the start of the 1970s, those who knew about the project began asking questions and raising objections.



Fig. 7. CALTRANS diorama showing the Corps of Engineers proposed channelization of the San Diego River. Photo by P.R. Pryde.

It was the dawn of the environmental era, and the slogan, “We don’t want to be like Los Angeles” was starting to be heard. Even so, most people assumed that if the City wanted it, and the Corps of Engineers wanted it, and Congress passed a law approving it, like it or not, it was probably a done deal. You couldn’t fight both City Hall and a giant federal bureaucracy simultaneously. Other regional agencies began conducting their long-range planning on the assumption that a concrete San Diego River channel would be built (Figure 7).

The Hearing

Large projects such as the proposed San Diego River flood channel, even in those days, required a public hearing. For whatever reason, a public hearing on the proposed project did not occur for several years following the issuance of the 1964 report. Finally, a public meeting (the Corps preferred the term “public meeting” to “public hearing”) was scheduled for 7 p.m. on March 30, 1971, in the Town and Country Convention Center in Mission Valley.

By 1971, however, it had become harder to ram through projects such as this. The huge Santa Barbara oil spill had engendered the National Environmental Policy Act of 1969, better known as NEPA (“neepa”). It required the preparation of Environmental Impact Reports (EIRs) on significant projects. Of course, reports were different then. Instead of the voluminous EIRs that appear today on major projects, the one for the San Diego River flood control channel consisted of just six pages (mostly descriptive), contained no graphics or tabular data, and was not even dated, though probably was issued in either late 1970 or early 1971. It would be considered laughably inadequate today, but that was forty years ago. Times have changed.

It was fortunate that the hearing was scheduled at such a spacious venue. Whereas the 1961 hearing had drawn



San Diego Union article on the March 30, 1971 public meeting regarding the San Diego River. Photo by P.R. Pryde.

ninety-three participants, the attendance at the 1971 gathering was estimated at around one thousand.¹⁵ The meeting hall was packed, the overflow spilled out into the corridors, and over one hundred people submitted slips to speak. *The San Diego Union* writer noted, "Most who spoke were against the plans" (Figure 8).¹⁶ It was clear that the San Diego River was no longer to be ignored, nor its fate left up to governmental machinations.

Colonel Robert J. Malley, the head of the Los Angeles office of the U.S. Army Corps of Engineers, chaired the meeting and must have been surprised by the size of the turnout. He probably sensed it was going to be a long evening. Mayor Frank Curran, who favored the channel, opened the proceedings. Per normal procedure, after explanatory comments by Corps personnel, the proponents of the project spoke first. Only four businessmen spoke in favor of the plan; they were mainly property owners in the valley who believed the channel was needed to allow them to develop.¹⁷ Most influential among them was Bruce Hazard, a major landowner and developer in Mission Valley for whom Hazard Center is named.

Twenty-four others followed, all speaking in opposition to the project. Among the planning and environmental organizations that spoke against the proposed channel were the San Diego chapters of the Sierra Club and Audubon Society, Citizens Coordinate for Century 3, the Ocean Beach Ecology Action group, the Environmental Quality Committee, the Mission Beach and Ocean Beach Town Councils, the Navajo Community Planners, the College Area Community Council, the Community Planners Committee, the Park Northeast Planning Association, and other similar organizations. They were followed by a number of individual speakers who likewise expressed their opposition to the proposed concrete channel.

The one elected official who did speak was County Supervisor Jack Walsh, who had taken a personal interest in the project and opposed it, at least as proposed by the Corps, writing several letters to their offices in 1970 and 1971.¹⁸ He questioned the size of the project and asked for alternatives to be studied.

The author of this article presented the main statement from environmental groups in opposition. At the time, he chaired the Conservation Committee of the San Diego chapter of the Sierra Club, and his comments were endorsed by both the local Audubon chapter and Citizens Coordinate for Century 3, for whom he was also authorized to speak. These comments contained three main themes: (a) that a concrete channel was unacceptable, (b) that if any "improvements" were needed they should be as natural as possible, and (c) that the proposed size of the channel, and the size of the calculated flood that justified it, were open to question.

Interaction with the Corps concerning the project had begun well before the March 1971 public meeting. Among the many individuals preparing statements

or sending communications to the Corps prior to the hearing that questioned the projects were scientists in the biology and zoology departments at (then) San Diego State College, particularly Drs. Joy Zedler and Jason Lillegraven. Dr. Zedler's letter, which was more in the form of a position statement, was co-signed by eight other professors in the Department of Biology.¹⁹

As this was only a public forum to garner citizen and organizational input, no action was taken that evening. It is to Colonel Malley's credit that he conducted a very fair and even-handed hearing. *The San Diego Union* article quoted him as saying, "That's why we're here. We want to find out what the people think about the proposed channel. And it's only proposed. It's not final. It can be changed."²⁰ The latter turned out to be four very prophetic words.

The Re-think

Following the March 30 public meeting, interest in the fate of the San Diego River did not flag in the slightest. In the spring of 1971, various letters were sent to the San Diego City Manager asking if the city was going to reconfirm its August 1963 guarantees (noted above), and to Colonel Malley, requesting again that their proposal be restudied.

On May 11, 1971, this author went to the office of the Corps of Engineers in Los Angeles to speak directly with its staff about many specific details of the project. They were surprisingly helpful, perhaps because, on the same day, *The San Diego Union* reported that a decision to re-examine the project had already been made.²¹ This surprising message caused considerable, albeit restrained, rejoicing in San Diego. Even more heartening, the newspaper article quoted the Corps' Colonel Malley as saying that the restudy, "came about because of testimony at the hearing in Mission Valley" on March 30.²²

On May 21 the Corps issued a response to the letters requesting a re-study, signed by Edward Koehm, Chief of the Engineering Division at its Los Angeles office. In it, Koehm stated, "The alternatives, proposed by the Sierra Club and others at the public meeting in San Diego, are being studied...It is estimated that the proposed studies will be completed in eight to ten months. Another public meeting will be scheduled upon completion of the studies and before any final design selection is made. You will be notified..."²³

One of the main objections leveled at the Corps on March 30 was that the large flood envisioned for the San Diego River was not based on any meteorological event that had ever taken place in San Diego County, but rather on a huge storm that had occurred in 1943 in the San Gabriel Mountains north of Los Angeles. It was suggested that no such storm would be likely to occur under the considerably



Fig. 9. Development on the north side of the San Diego River's statutory floodway, 1976. Photo by P.R. Pryde.

different geographic conditions that characterize San Diego County. This point will be elaborated upon in the next section.

The May 11 newspaper article specifically mentioned that the underlying hydrologic calculations were being looked at. Col. Malley stated, "We are seeking to confirm our flow data leading to our estimates of a standard project flood." By "standard project flood" he meant the size of the calculated flood that would justify the very large concrete channel being proposed. If it could be proven that the size of their calculated flood was exaggerated, much of the justification for a large concrete channel would be rendered questionable.

It was hoped that their new study would contain not only a re-examination of the hydrological assumptions, but also specific alternatives to the increasingly disliked concrete channel proposal. Although perhaps not directly related to the Corps' restudy then underway, the city of San Diego in September 1971 adopted its first ordinance to start controlling development in floodplains.²⁴ The main purpose of this ordinance was to define a legal floodway to enable the city to qualify for Federal flood insurance (Figure 9).

Finally, on March 23, 1972, the San Diego City Council passed a resolution formally asking the Corps to study various types of alternative facilities, including "a natural bottom wide channel" throughout most of the valley.²⁵

The Critique

The communications from the Corps of Engineers in the spring of 1971 were most encouraging. But those who wanted to see the river kept unchannelized felt it would be desirable to keep pressure on the Corps to let them know San Diegans were still keeping a sharp eye on what was going on in Los Angeles.

Accordingly, the present author decided it might be beneficial to back up the questions that were asked at the March public meeting with a more detailed analysis of exactly what seemed to be wrong with the way the Corps calculated flood flows for the San Diego River. There was, of course, more than a little nervousness with this course of action, as one could easily visualize a Corps official looking at you over his glasses and sniffing, "And exactly which engineering degree do you have?" Nevertheless, the defense of the river called, and research on a critique of the Corps' procedures was soon underway.

A year earlier, to lend additional credibility to the opposition to the channel, a new organization had been formed, known as the San Diego County Floodplain Technical Committee (SDCFTC). It consisted largely of young faculty at San Diego State College, with the author as its chair, and several other members that included Joy Zedler (biologist) Arthur Kartman (economist), Howard Chang (hydrologist), Frank Stratton (civil engineer), and others. The SDCFTC sent out many letters and

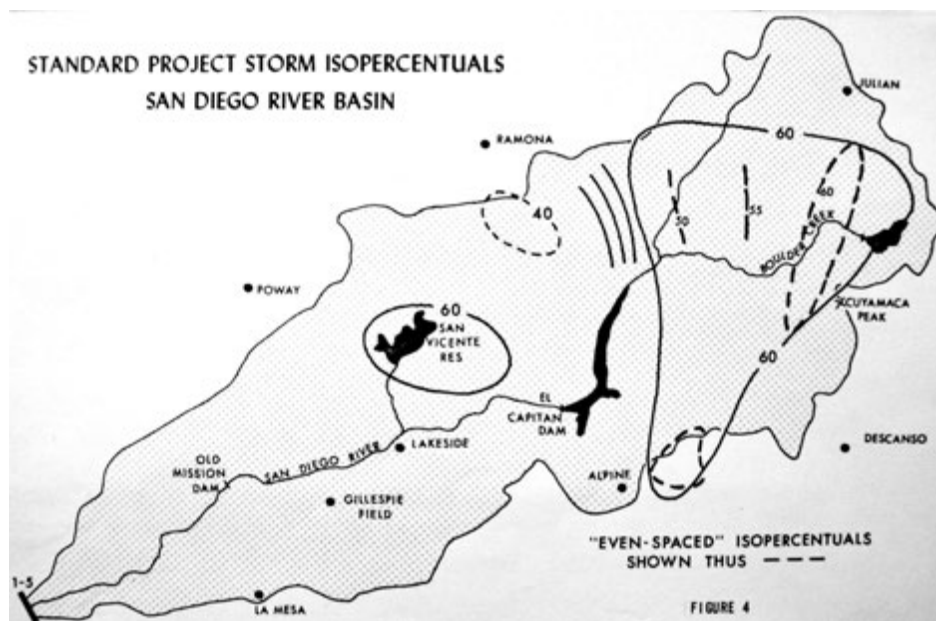


Fig. 10. The Corps' isopercentual map as transposed to San Diego County, used to justify a large concrete channel. Photo by P.R. Pryde.

position papers, but its most significant effort was the 1972 critique of the Corps' methodology for calculating a maximum flood in Mission Valley.²⁶

In summary, the critique said that the Corps procedure for predicting a maximum flood flow (in Corps parlance, a "standard project flood") for the lower San Diego River was invalid. The Corps' procedure was to take the largest 24-hour rainfall that had occurred in the mountains north of Los Angeles, depict cartographically the percent of normal annual rainfall that fell in that one day period (termed an "isopercentual map," see Figure 10), and then transpose that storm, on paper, to the mountains east of San Diego, centered on the upper San Diego River watershed.

The critique pointed out several reasons why you cannot do this. The Los Angeles mountains are higher, their windward slopes are steeper, they are aligned so as to face directly towards incoming storms, and more (and larger) storms move through Los Angeles than through San Diego County. The *coup de grace* was a statement in a major hydrology text that said, "storms in mountainous regions cannot be transposed...hence, the patterns are best defined by the major storms of the immediate area."²⁷

The report was disseminated to the Corps of Engineers offices in Los Angeles, the local media, local elected officials, and other interested parties and stakeholders.²⁸ Some years later, in a casual conversation with Corps personnel, the author inquired as to whether they had seen the SDCFTC report and asked if it had influenced their subsequent actions. They acknowledged that it had.

The Surprise

Now the question was: what kind of a reconsidered proposal for Mission Valley would the Corps of Engineers produce? Their response came back relatively quickly, received by the city in September 1972, only about six months after the city's official Resolution requesting the restudy. The new Corps study contained nine different alternatives, which are summarized below. To analyze all these new concepts, the city created a special Task Force for this specific purpose on September 22, 1972, and the Task Force also worked quickly, submitting a detailed report to the City Manager and Council in January 1973.²⁹

The nine proposals that the Corps looked at in the 1972 re-study fell into five conceptual categories. The first two, designated as Alternatives I-A and I-B, were essentially two variations on the existing plan, differing only in where the concrete portion of the channel would begin. Both would convey the previously proposed "standard project flood" of 115,000 cfs.

Next came Alternatives II-A and II-B, both involving one new dam on the river



Fig. 11. Site of the proposed San Vicente detention dam in Alternative V. Photo by P.R. Pryde.

north of Lakeside. One would have a concrete channel in Mission Valley and the other an earthen bottom channel with rock levees on the sides. A major conceptual difference here was that the size of the flood flow that would be accommodated would be dropped from 115,000 cfs. to 42,000 cfs. The latter figure was considered to be the “hundred-year flood flow.”

Alternatives III-A and III-B envisioned two upstream dams, but these would be smaller detention dams downstream from the existing El Capitan and San Vicente dams. III-A and III-B would again differ in terms of the nature of the downstream channel; the design flood would also be the smaller 42,000, or “hundred-year flood,” figure.

Alternative IV envisioned a new dam in the Lakeside area, but only a grass-lined channel in Mission Valley, starting near the present SR-163 crossing. It would also be designed to convey the smaller hundred-year flow.

Finally, Alternative V would entail two detention dams, similar to Alternative III, and only a grass-lined earthen channel downstream, again starting just east of the SR-163 bridge (Figure 11).

The ninth alternative was the “status quo”; in other words, doing nothing at all. The city warned that this alternative might entail a building moratorium in most of Mission Valley.

Then came the surprise. The Task Force turned away from the Corps’ earlier

concrete channel proposal (which the city had previously also supported), and selected the least intrusive of all nine variants, Alternative V.³⁰

The Task Force enumerated several reasons for doing this, aside from public sentiment. The Task Force examined all nine options from four perspectives: economics, engineering, regional planning, and environmental factors. Each of these categories had a number of sub-topics that were individually evaluated. As a result of this analysis, the top three candidates were Alternatives V, IV, and III-B, with Alternative V scoring first in all of the four primary categories except planning, where it was second. The least intensively engineered alternative, V, had proven itself to be the most desirable.³¹

Alternative V, however, assumed that the “big flood” would be entirely stored in the new reservoirs. It provided for a flood in Mission Valley generated by a very large thunderstorm occurring below the new dams, calculated at 25,000 cfs in the valley. This is the reason that a smaller, soft-bottom “green” channel could be proposed for Mission Valley under Alternative V.³²

To illustrate the problems with the more grandiose alternatives, the single new dam (the “Lakeside Dam”) proposed in Alternatives II-A, III-A, and IV would have been both huge and very destructive. It would have been built just north of El Capitan High School, almost 300-feet high, and stretching from the hills on the east side of Ashwood Street to the hills on the west side of SR-67, north of that highway’s present river crossing. The top of the dam would have been over a half mile long. The reservoir would have inundated virtually all of El Monte Valley, as well as most of Moreno Valley along San Vicente Creek and SR-67.³³ Property acquisition costs (using eminent domain) would have been enormous, even in 1973 dollars.

The Task Force report also identified several aspects of the overall project that it felt warranted additional study and analysis. Although Alternative V might be most desirable, it would provide safe passage for a much smaller flood than had been planned for previously. And the size of the flood that the city should be planning for in Mission Valley was very largely an unknown entity (and, it might be noted, that same statement could probably still be made today).

The Aftermath

Needless to say, most San Diego area environmental groups—feeling that a bullet had just been successfully dodged—endorsed Alternative V, as did almost everyone else. The SDCFTC sent a letter of support, as did the San Diego Chapter of the Sierra Club, whose letter carried the signature of its then Conservation Chair, none other than future County supervisor, mayor, and radio talk show host Roger



Fig. 12. The San Diego River flood of February 18, 1980 at Fashion Valley Road. Photo by P.R. Pryde.

Hedgecock.³⁴ On the whole, Alternative V looked good to most San Diegans, at least compared to what was being proposed previously. On April 17, 1973, the San Diego City Council voted 7-0 to approve the concept of Alternative V.³⁵

But that small bit of euphoria was destined to be temporary. Alternative V was not without its critics and, as noted above, would have involved two new retention dams immediately below the existing El Capitan and San Vicente dams. Some conservation groups and many individuals preferred an open space-green belt concept in Mission Valley, while a few landowners were still sympathetic to the concrete channel idea. A few years of discussions, planning, and additional thinking ensued.

The death knell for the Corps' proposal came in 1976 when the Corps itself opined that, based on a much lower estimated hundred-year flood size in the valley (25,000 cfs) plus the use of more realistic (higher) interest rates in its economic calculations, none of its nine 1973 alternatives would have a positive benefit-cost ratio. That statement pretty much killed any chance of getting a funding appropriation through Congress.³⁶

The city then began to seek ways to resolve the situation itself. It studied concepts for the river's floodplain that it could incorporate into the community plans for Mission Valley, and that embodied the idea of a "soft-bottom" channel (that is, with a bottom of soil and vegetation). Because some sections of the valley were already so well developed that there was little room for any kind of a channel left (for example, the Fashion Valley area near the Town and Country complex),



Fig. 13. The San Diego River flood of January 15, 1978 near the Town and Country Convention Center. Photo by P.R. Pryde.

flood planning for the valley would have to be done in segments, with different approaches used depending on how much of the floodplain remained in any given stretch of the river.

In the mid-1970s, much of the discussion at City Hall involved preparing, adopting, and applying the comprehensive set of floodplain zoning regulations required by the new Federal flood insurance law. The first such zones were adopted in 1973, but the application of comprehensive floodway zoning in Mission Valley was not accomplished until October 26, 1977. The city also prepared plans for small excavations in parts of the valley, calling them “pilot channels,” to direct smaller flood flows more quickly to the ocean.

One impetus for a heightened awareness of nature in San Diego city planning was the highly acclaimed Donald Appleyard and Kevin Lynch study, *Temporary Paradise*, which appeared in 1974. It urged that the city should “preserve all remaining undeveloped valleys and canyons,” and that “no further channeling of the streams should be permitted.” It lamented that the future of Mission Valley “appears gloomy,” calling it “an urban trench,” but also emphasized that it could still be transformed, if wanted, into a beautiful asset for the city.³⁷

About that time, Mother Nature must have decided that San Diegans needed a timely reminder about flood potential for, in both 1978 and 1980, the winter rains produced the greatest flooding on the river in many years (Figures 12 and 13). Significant flooding also occurred in 1983.

The flooding caused the major landowners in the valley to propose a plan to the city that would comply with the city's new floodway regulations, safely accommodate floods such as occurred in 1978 and 1980, and allow them to develop their prime properties between the SR-163 and I-805 freeways.³⁸ This was the start of planning for the first major flood control project in the valley, which eventually carried the name, First San Diego River Improvement Project (FSDRIP), affectionately pronounced "FizzDrip."

This concept required some major work by the City Planning Department but, by early 1982, the plan was completed and the Environmental Impact Report for the project was ready for circulation.³⁹ The entire plan was approved by the city council on November 16, 1982. It became a part of the newly prepared Draft Mission Valley Community Plan, which had been six years in the making.⁴⁰ The specifics of the proposed FSDRIP plan were embodied in a separate document, the San Diego River Wetlands Management Plan.⁴¹ The latter document included floodplain concepts for all of Mission Valley eastward to Zion Street, not just for the FSDRIP portion.

With the plans approved, the city was well into the process of acquiring all the many permits needed to begin construction of the FSDRIP project by 1984. Work was soon underway, and the project was completed in the early 1990s (Figure 14). Even before it was completed, there were good indications that it would be a biological success.⁴²



Fig. 14. The FSDRIP channel nearing completion, November 1989. Photo by P.R. Pryde.



Fig. 15. San Diego River flooding at Mast Park, Santee, March 4, 1978. Photo by P.R. Pryde.

In addition to FSDRIP, other plans for the river were being worked on in the 1980s. One was a similar concept for the middle stretch of the river between Padre Dam and the El Capitan Dam, which bore the name Upper San Diego River Improvement Project (USD RIP). This plan was authorized in 1978 but, because it involved multiple jurisdictions and complex planning problems, it was not completed until 1983.⁴³ The result was a small and highly schematic report, which has remained as merely a concept document, although some aspects of it have been carried out by the cities of Santee and San Diego. Santee, for example, has significant flooding problems of its own along the river (Figure 15). In response, it adopted the concept of the USD RIP proposal into its initial General Plan in 1981, just one year after the city was incorporated.⁴⁴

Provisions of the federal and state Endangered Species Acts required another plan for the river in order to protect the endangered Least Bell's Vireo (*Vireo bellii*), a migratory songbird that nests only in riparian woodlands. In order to protect such species and provide for their recovery, the U.S. Fish and Wildlife Service requires the preparation of Habitat Management Plans for, in this case, their breeding territories along the San Diego River. This plan was completed in July 1990.⁴⁵

There was one other plan that many San Diegans wanted to see developed: a master plan for a long dreamed-of San Diego River Park.

The Park

The idea of a San Diego River Park had been around for a long time, an enduring dream held by many. What was lacking was any coordinated effort to actually bring such a park into reality. The concept appears to have begun with a more modest vision of a river park in Mission Valley. In 1978, a *San Diego Union* article illustrated a possible "Mission Valley Regional Park" extending from Morena Boulevard eastward to I-805. The writer gave credit for the first use of that phrase to a paper prepared in 1975 by Kim Wiley, a student at Cal Poly Pomona.⁴⁶ As noted earlier, however, the idea of a park in the valley had been strongly urged in the 1974 Appleyard and Lynch report that may have influenced Wiley.

A year later, one of the earliest references by name to a "San Diego River Park" was in a lengthy 1979 article in *The San Diego Union* written by Roger Showley.⁴⁷ In it, he noted the many development projects pending in the valley, and lamented the uncoordinated planning that had taken place there in the past. His reference to a San Diego River Park at that time, however, referred only to the newly proposed Mission Valley greenbelt that accompanied the two-mile FSDRIP project.

The San Diego River Park concept continued to be discussed for a few years,

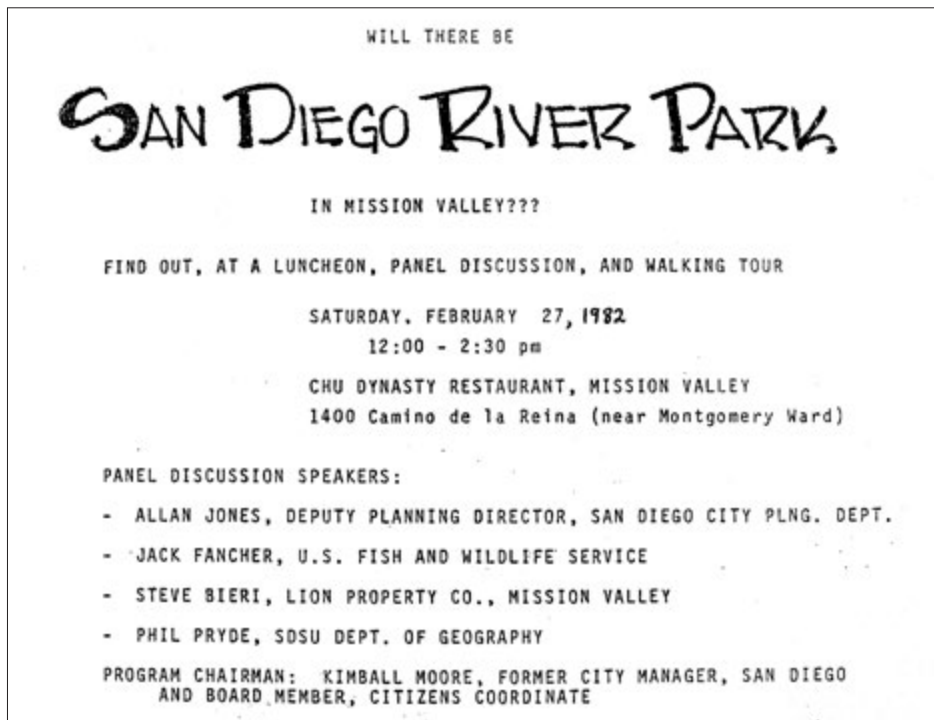


Fig. 16. Announcement of a public meeting to discuss a San Diego River Park, 1982. Photo by P.R. Pryde.



Fig. 17. Bathers enjoying the high flood flow behind Mission Dam, April 1941. Photo by Dr. Lauren Post.

including at a luncheon conference and walking tour of the river to promote the idea, sponsored by Citizens Coordinate for Century 3 on February 27, 1982 (Figure 16). As noted above, a portion of the river became a de facto open space park with the construction of the FSDRIP project in the late 1980s. But after that, the park concept seemed to fade into the background as the focus of city planning shifted to downtown redevelopment proposals, such as the Horton Plaza Shopping Center, the Convention Center, the light rail system, and the revitalized Gaslamp District. The river park idea was little discussed during the 1990s. The generalized river park idea still lacked an implementing vision and, for ten years or so, was largely absent from civic discussions.

In the year 2000, a small but determined group of San Diego conservationists, appalled by a huge sewage break into the San Diego River that year, became determined to breathe new life into the San Diego River Park concept.⁴⁸ Among the leaders in this effort were Michael Beck, Rob Hutsel, Jo Ann Anderson, Jim Peugh, and Mike Kelly. Their objective was to create a new organization with the goals of promoting, maintaining, and helping to fund an open space park along the entire course of the river. This was really the first time the entire length of the river had been envisioned as constituting “The San Diego River Park.”⁴⁹ The new organization, known as The San Diego River Park Foundation, was soon put together and its Articles of Incorporation were filed with the State on July 18, 2001.

There is no one basin-wide jurisdiction that is charged with creating a San Diego River Park; rather it involves a collaborative effort among all its “partners”—

the cities of San Diego and Santee, the County of San Diego, other appropriate agencies, private organizations, and the various landowners along the river.

To keep all interested parties informed and interactive, a coordinating organization called the San Diego River Park Coalition was quickly created in September 2001; any responsible group with an interest in the river may join. It meets monthly and, in 2011, had a membership of seventy-four affiliated organizations. One of its main tasks is to prepare and periodically update a Work Plan of projects that are desired within the river's watershed.

Three of the River Park's partners deserve special mention. One that predated the Foundation was the Mission Trails Regional Park, and is by acreage the largest single component of the San Diego River Park. The river cuts through the middle of it, creating an impressive gorge almost a thousand feet deep. And of course, the historic Mission (or Padre) Dam is one of its highlights (Figure 17).

Another significant partner is The San Diego River Park Lakeside Conservancy, created in 2001, with Robin Rierdan currently its Executive Director. This is a regional wetlands conservation endeavor in the unincorporated community of Lakeside, built around old sand and gravel borrow pits along the San Diego River. Some of its major tasks are wetlands restoration, improved flood management on the river, habitat preservation, and new community recreational opportunities.

The third significant restoration project is at Famosa Slough, a small marsh on the south side of the flood channel in Ocean Beach. Here, as the result of a twenty-year project spearheaded by Jim Peugh and the non-profit Friends of Famosa Slough, an amazing transformation has taken place from a polluted dump for tires and shopping carts to a healthy, water-bird filled tidal wetland.



Fig. 18. The entrance to the River Park Foundation's native plant garden in Mission Valley. Photo by P. R. Pryde.

Other significant partners and contributing organizations include the Coastal Conservancy, the San Diego Foundation, Friends of Dog Beach, I Love a Clean San Diego, San Diego Audubon Society, Friends of the Mission Valley Preserve, and many others. It might be noted that the Mission Valley Preserve was the only open space park in the Valley that predated the creation of the San Diego River Park Foundation in 2001.

Potentially, a large amount of support for the park could come from a newer organization, The San Diego River Conservancy. This is a California state agency, created by the state legislature on September 13, 2002, to protect and enhance the assemblage of natural resources found within the river's watershed. Its charter extends until 2020, and in 2011 its Executive Director is Michael Nelson. For the most part, the monies it receives go towards implementing some of the projects proposed in the Coalition's Work Plan. Its funding from the state has increased slowly over the years, but, nevertheless, in 2008 it was receiving the second smallest amount of funding of the nine state Conservancies.⁵⁰ However, it has also received significant funds from some of the state's environmental enhancement bond issues.

The San Diego River Park Foundation plays a major role in maintaining the beauty and health of the river. Since 2004, volunteers have removed more than 1.3 million pounds of debris and trash from the river's course,⁵¹ and in 2010 the Foundation received a national citation from the national Keep America Beautiful organization.⁵² Its environmental education programs include the creation of two native plant gardens, one in Ocean Beach and one in Mission Valley (Figure 18). The Foundation also has a major objective of restoring habitat along the river, including acquisition of key open space parcels, especially in the upper watershed of the river.

The Future

As a result of the creation of the San Diego River Park Foundation (SDRPF), together with its many partner organizations that are noted above, it is clear that in the early years of the twenty-first century, the river was being ignored no longer. The media was now very attentive to the future of the river (as well as to its past), and articles about the river were now more frequent and more detailed.⁵³ The previous section noted the wealth of pro-river activities that have taken place over the past ten years in Mission Valley and elsewhere along the river, but what about the future?

As projects such as FSDRIP become a part of the river's hydrologic and biotic reality, there will be a need to engage in monitoring the overall health of the river, and of its key components (aquatic wildlife, etc.) as well. This is currently



Fig. 19. SDRPF volunteer doing water quality monitoring on the San Diego River. Photo courtesy of the San Diego River Park Foundation.

taking place on several fronts. The biological results of FSDRIP were required to be monitored for a number of years. Both the State of California's Water Quality Control Board and the SDRPF monitor the quality of the water in the river. The number of sewer-line breaks has been diminished in recent years, although the city still lags behind the need in replacing old sewer trunk mains.

Even the general public is involved in protecting the river, and will continue to be so engaged in the future. And they are not just helping with trash cleanups, for there is a significant "citizen scientists" effort as well. For example, volunteers do much of the SDRPF's monitoring of water quality that was mentioned above (Figure 19). This will be an ongoing task. In February 2011, the author observed both excessive reed growth as well as young willow tree die-off in the FSDRIP section of the river in Mission Valley. The reason for the willow die-off is not known.

Another example is the effort of a large number of volunteers who are skilled professional and amateur ornithologists, and who are providing a good picture of the increases in bird numbers within Mission Valley. This information serves as a barometer of the total biological productivity of the emerging green belt, as well as long term time-series data that documents it. As vegetation there becomes more abundant and diverse, the numbers of birds and their diversity



Fig. 20. Flooded commercial property in the floodplain fringe area of Mission Valley, February 1980. Photo by P. R. Pryde.

should increase as well. Nevertheless, one expert on local birds, Paul Lehman, characterized the birds in the valley as “underachieving,” especially fall and winter migrants, as they currently seem to be present there in somewhat smaller numbers than might be expected.⁵⁴ The long-term biological sustainability of the river is still a work in progress.

One outstanding future development in the valley will be the creation of The Discovery Center at Grant Park. This will be a combination visitor center and nature education facility at a new park to be built on 17 acres of prime land along the river that was donated in 2009 by San Diego’s Grant family.⁵⁵ Funds still need to be found to build the Center but, when completed, it will be one of the crown jewels of Mission Valley and the answer to the long held dream of a significant open space park in the central part of the valley.

In the future, the Foundation and the Conservancy will likely devote increased attention to the upper portions of the watershed. The first step was taken with the acquisition of a large parcel in the mountains west of Julian that has become the River Park’s 516-acre Eagle Peak Preserve. Additional montane parcels will be acquired. The Foundation is also currently (2011) acquiring parcels in the Chocolate Creek-Peutz Valley area to create a mid-county continuous wildlife corridor from the mountains to the foothills. Also, in the middle portion of the Watershed is the 752-acre Silverwood Wildlife Sanctuary and Nature Center, owned and operated by the San Diego Audubon Society. The San Diego River Park Foundation has acquired some properties of its own near this facility as well.

There still remain, however, three related problem areas in the Mission Valley part of the river that relate to floodplain management and flood loss prevention. At the start of the new century, there was no coordinated plan for flood protection on the river. One problem is the continuing development taking place in the Valley, right up to the edge of the floodway. A 2003 article in the *San Diego Union-Tribune* focused on the problem, noting that ongoing urbanization in Mission Valley is having the effect of increasing the elevation reached by floods of any given size, as open areas in the floodplain fringe that formerly served to temporarily store flood waters, and function as a natural “sponge,” are lost to urban development (Figure 20).⁵⁶

Closely related to this is the second problem: over time various stretches of the river have been developed with vastly different flood sizes in mind. Thus, at the east end of the valley there is the 250-foot right-of-way for a flood channel, but without any formal improvements as yet. The stadium parking lot, and stadium, are still part of the de facto floodway, as was famously demonstrated at the December 2010, Poinsettia Bowl. From there, floodwaters flow into the FSDRIP section with a presumed hundred-year flood capacity of 25,000 cfs. Then the river flows under the SR-163 bridge and into the trolley station—Town and Country section—that has virtually no channel at all. It next crosses Fashion Valley Road (which is often flooded out), and onto a golf course that provides a grassy channel



Fig. 21. Flooding at the Fashion Valley Transit Station, December 2010. Photo courtesy of the San Diego River Park Foundation.

of sorts with an uncertain floodwater capacity. Flowing under I-5, the river then enters the very wide rock-sided channel built in 1953 that can convey a much larger flood than has ever been recorded on the river.

This historical piece-meal approach to flood planning in Mission Valley has been lamented for decades, but no plan yet exists to correct this third problem. To be sure, both economically and politically it is an extremely complicated dilemma. Nevertheless, thirty-five years after the demise of the concrete flood channel concept, the problem remains unresolved.

Compounding this dilemma is the fact that we really do not know how big a flood to plan for. Just between the mid-1960s and mid-1970s, the size of an anticipated flood varied from 110,000 cfs in the 1960s, down to 36,000 cfs, then back up to 49,000 cfs, and finally, with Alternative V, down to 25,000 cfs. Huge floods are so infrequent and randomly spaced that one would prefer to have at least five hundred years of records to work with. On the San Diego River, even though some mission records exist, we have just a little over one hundred years (and, parenthetically, far less than that on all the other San Diego County rivers). Further compounding the challenge of putting a number on the hundred-year flood is the “inconvenient truth” of climate change, with its unknown future implications for precipitation and winter-season storms in the San Diego River watershed, as well as elsewhere in the County.⁵⁷ But one thing we know for certain, floods will continue to occur in Mission Valley (Figure 21).

Still, the changes that have occurred over the past four decades have been very heartening. The stake remains through the heart of the concrete-channel monster. The river course through Mission Valley is starting to look healthier and more attractive than it has for a great many years, and certainly far greener. Many more amenities now exist, along with thousands of new residents living on the floodway’s edge. The new walkways, bikeways and open space parks along the river are one of the city’s great recreational opportunities. The river lives again.

From time to time, when San Diegans are enjoying the tranquil beauty of the open space and wildlife habitat along the river in Mission Valley, it would be appropriate to recall the events of the evening of March 30, 1971, and quietly celebrate the day the citizens of San Diego rallied together to save the San Diego River.

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