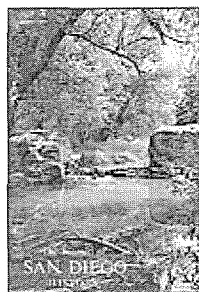


# Exhibit 1



- Photo Gallery
- Timeline
- Biographies
- Education
- Journal Publications
- Library Collections
- Gift Shop
- Expositions
- Events

THE JOURNAL OF  
**SAN DIEGO  
HISTORY**



The Journal of San Diego History  
Spring 1971, Volume 17, Number 2  
Contents of this Issue

**THE ROLE OF THE SAN DIEGO RIVER  
IN THE DEVELOPMENT OF MISSION VALLEY**

By Nan Taylor Papageorge

Images from the Article

*"Is today the day, Daddy? Can we pack a picnic lunch and sit on the bluff and watch the buildings go floating out to sea?" Any rainy day might bring forth that half-joking, half-hopeful question from one of our young sons. Their father, who had spent some of his childhood in San Diego, had told them what he remembered of the floods of the San Diego River in Mission Valley. And to their rather horrified delight, he had almost promised them that it would happen again someday. Since the San Diego River was almost completely invisible to them, and the great motels, office buildings and shopping centers were increasing in size and number most visibly, they were caught up in and delighted by what seemed to be a happening worthy of Walt Disney's "plausible impossible."*

*And so a shared family joke delights us still. But is there still a possibility of flooding in Mission Valley? Surely not! The great surge of building continues. The scarcity of water, not a surfeit of it, seems to be Southern California's problem. The actual presence of a San Diego River astounds the relative newcomer who is apt to state, "I didn't know there was one!"*

A glance at the latest San Diego City map will reveal a bright blue stream flowing through the heart of Mission Valley.<sup>2</sup> But a drive from Mission Bay six miles up to the head of Mission Valley where it narrows in to Mission Gorge will reveal only a couple of ponds and wet places. The river, for the entire span of its recorded history, has been a "now you see it, now you don't" vision for the inhabitants of the area. "It's upside down now!" chuckled one old-timer.<sup>3</sup> At present it does flow underground through the valley,<sup>1</sup> but where do its ghostly waters originate? A much quoted passage from Smythe's

*History of San Diego* describes it thusly:

The San Diego River rises in the Volcan Mountains 60 miles from the city. It flows through the El Cajon and ex-mission ranchos, the pueblo lands of San Diego and into False Bay. At Capitan Grande, 35 miles from its mouth, it is joined by a branch rising to the southeast of the Cuyamaca Mountains. Fed by numerous springs on its course, it flows to Capitan Grande all year, then it sinks into the sands and disappears in the curious manner of California rivers.<sup>5</sup>

"False Bay?" "ranchos?" "pueblo lands?" —Words from the past! We will find that the will-o-the-wisp river has played a dominant role in the settling and development of both Mission Valley and San Diego city as well.

### **La Canada de San Diego (1602-1846)**

Mission Valley was known to the Spanish as La Canada de San Diego (The Glen of San Diego).<sup>6</sup> The first mention of the San Diego River was in the diary of explorer Sebastian Vizcaino. In 1602 he left San Diego Bay to investigate what he called False Bay (now Mission Bay) and he reported at that time that it was a "good port, although it had at its entrance a bar of little more than 2 fathoms depth, and there was a very large grove at an estuary which extended into the land, and many Indians."<sup>7</sup>

When the Spanish returned in 1769 with the intent to settle the area, the San Diego River was found to be a "river with excellent water" by Captain Vicente Vila of the ship *San Carlos*. He also noted a village of thirty-five to forty families of Indians living along the river.<sup>8</sup> A chart by Vila shows the changeable river entering into San Diego Bay.<sup>9</sup> Fr. Juan Crespi told of the first exploration (by white men) of Mission Bay in his letter of June 22, 1769:

When we reached the port we found, about one league distant, a good river with sufficient water, but in a few days it ran dry. Yesterday, May 21, Fr. Viscaino, and I went out to examine it, accompanied by the lieutenant of the troops Don Pedro Fages, and the engineer Don Miguel Costanso and seven or eight soldiers. We followed the course of the river which runs through a canada of much level land, in places extending from a quarter to half a league. The soil seems to be good for raising corn and wheat. In some parts there seem to be marshes and humid soil. All along the river bed there are poplar, willow, and alder trees. We found it dry in many places. In some spots there were pools with water, and in others there was only a streamlet. We walked about three leagues up the river bed and the

valley; but conditions were the same, until we reached the sierra, where the bed narrowed; (ed. note. Mission Gorge) but there was no running water. We do not know whether any irrigation could be done from it. However, if there be sufficient rains, as in other parts, good crops of cereals could be produced, as there is much land and good pasture. Building stone we have not seen anywhere.<sup>10</sup>

When the group that had arrived by ship was joined by the land party of Fr. Junipero Serra, they moved their camp up to a bluff overlooking the river (both for safety and to be nearer the source of water) and on July 16, 1769 founded the Mission and military post that was known as the Presidio.<sup>11</sup>

The first year they planted their crops near the river, and the river rose so high that it carried away all that was sown. The second year planting was done further back from the stream, but water was so scarce that most of the plants died.<sup>12</sup>

The padres recommended that the Mission be moved further up the Valley in hopes of having better luck with the crops. Fr. Serra in his first report of the Mission for 1774 stated, "It is determined to move the Mission within the same canada of the port toward the northeast of the presidio, at a distance of a little less than two leagues. The place is much more suitable for a population, on account of the facility of obtaining the necessary water, and on account of the vicinity of good land for cultivation. The place is called Nipoguary."<sup>13</sup> The move was accomplished in August of 1774 and Mission Valley had its first white inhabitants and California's first mission had its permanent home.

It is thought that in 1774 the river returned to False Bay after a period of heavy rain.<sup>14</sup> (The San Diego River has apparently shifted its channel back and forth between Mission (False) Bay and the San Diego Bay many times in the past. Historians conflict as to the actual years of change. It would be fascinating to do the detective work necessary to try to pin down the facts, but that would be another story.) Scarcity of water was the pressing problem of the padres, their growing mission and the surrounding Indian Villages. In 1792 Frs. Mariner and Torrent discovered fresh springs and had an irrigation ditch 1300 vares long built to bring water to the fields.<sup>15</sup>

The Spanish Military forces remained at the Presidio. According to British Captain George Vancouver who visited there in 1794, the military were supported by the fields and labors of the missionaries and their Indian neophytes.<sup>16</sup> Thus Mission Valley supported both settlements.

The marvel of the mission era was the dam and aqueduct which was

started in 1807. Using Indian labor, they dammed the San Diego River at the head of Mission Gorge where the river ran the year round. An aqueduct was run nearly six miles through a rugged canyon to the fields of the mission. The padres didn't keep many records during this time but Frs. Sanchey and Martin reported in 1813, "We are working on an aqueduct, which is to bring water to the Mission." In 1814 they reported that 3.8 miles had been completed.<sup>17</sup> Judge Hayes, who viewed the dam in 1867, said there was a settling basin with sand traps to clear the water before it entered the flume, and a four-inch penstock through which water was forced to turn a grist mill.<sup>18</sup> With the advent of the water Mission agriculture flourished. Vineyards, orchards and crops were quite successful, as were herds of cattle. When the Mission was secularized in 1833, the inventories show that it was a thriving enterprise.<sup>18a</sup>

Don Blas Aguilar, an old time resident of San Diego, recalled that by 1821 there were 15 rancherias and two vineyards in Mission Valley. He said that all the crops were washed away and homes were damaged by a great flood that year, and the river changed its course back into False Bay.<sup>19</sup>

A tiny town slowly grew up at the foot of Presidio hill. The years of the 1820s must have been wet ones. Early citizens like Bandini and Pio Pico reported floods and each remembered a different year that the river changed course again. There is some evidence that the channel moved southward in 1821 and completed the change in the flood of 1825 back into San Diego Bay.<sup>20</sup>

All California came under the jurisdiction of the Republic of Mexico in 1824, and the town of San Diego was officially established as a municipality or pueblo in 1834. The townspeople planted their gardens in nearby Mission Valley, and obtained their water from the river or from under its sands.

In 1842, M. Duflot de Mofra, an attache of the French legation to Mexico, visited the area and spoke of the port:

Certain areas are shallow, and some parts are so covered with sand banks that ships can easily run aground on the silt that the tiny San Diego River brings down from the mountains in the rainy season. Within the last few years the river, through the negligence of the inhabitants, has returned to its former channel and now empties into the waters of San Diego Harbor.<sup>21</sup>

The wandering river was now threatening to choke up San Diego Bay as it had already done to False Bay, once a good deep port as reported by Viscaino in 1602.

The Mexican government sold the lands which formerly belonged to the Mission. Maria Estudillo received the El Cajon Rancho lying along the eastern San Diego River in 1845. In 1846, as the Americans were about to take over, Pio Pico gave a deed of sale to Don Santiago Arguello for "the remaining lands unsold" of the Mission San Diego.<sup>22</sup> A new era was about to begin. The Spanish had discovered the San Diego River and Mission Valley and though peopled sparsely, the valley was used for agriculture and cattle raising. After the first few years of adequate rainfall, the valley suffered under a long dry spell until the 1820s and 30s brought more rain and several floods. The Mission, once the center of culture in the valley, was falling into ruins.

### **Early American Days (1846-1900)**

After three hundred years of Spanish rule, and twenty-four years under the Mexican flag, the Pueblo of San Diego and all of California was ceded to the United States for \$15,000,000, in 1848. Captain S. F. du Pont, U.S.N., of the *U.S.S. Cyane* took the port of San Diego and his officer, Lt. Rowan, raised the American flag over the plaza of Old Town on July 29, 1846.<sup>23</sup> Du Pont later viewed the dilapidated mission and the remains of its gardens and vineyards, remarking that, "A more miserable and naked sight I never saw."<sup>24</sup> The first map by an American was made in 1846 by Henry D. Fitch. It shows two channels for the San Diego River. The one to the east enters San Diego Bay, the other stops short of False Bay.<sup>25</sup>

In 1849, Major A. R. S. Canby followed the San Diego River up to the ruined mission. He wished that the library could be cared for, and found the dam and aqueduct in good repair. With that water he felt that the valley could support a population of three or four hundred inhabitants.<sup>26</sup> Troops were stationed at the mission and were keeping it in good repair when John Russell Bartlett visited in May, 1852. They were withdrawn in 1858.<sup>27</sup> The mission was returned to the California Church in 1862 by President Abraham Lincoln,<sup>28</sup> but remained the haunt "of wild bees and owls"<sup>29</sup> for many years. In 1891 Father Ubach of San Diego began the first efforts to arouse interest in having it restored.<sup>30</sup>

In 1850, New Town was laid out by William Heath Davis closer to the port. But water for the ships and for the new community still had to be hauled from the river.<sup>31</sup> The population, according to the first census of 1850, was six hundred and fifty.<sup>32</sup> The diary of the artist Powell who came to San Diego during the gold rush days of 1850 states of the phantom river: "bed of river dry when we came in; today the water came rolling down a foot deep-strange sight."

The first government action to imply that the San Diego river stood in need of curbing was the U. S. Coast Survey whose report of 1851 by A. D. Bache warned that the bay may be destroyed by the silting action of the river. "The only remedy for this evil is to turn the river

into False Bay again. This is an excellent harbor and its loss would be severely felt."<sup>33</sup> Thus, Lt. George Horatio Derby, of the U. S. Army Corps of Engineers, was sent to San Diego in 1853 to build what was to become known as Derby's Dike. On his survey map he noted that "during freshets of the rainy season, the marsh south of town is entirely' inundated as well as part of the valley and plain bordering on the river."<sup>34</sup> Derby wanted to create a straight channel and levees for the river but he was ordered to deepen the old channel and build a levee from a point at the foot of the Presidio hill to the foot of Point Loma (1190 yards). The old *San Diego Herald*, Sept. 24, 1853; noted that "sixty laborers with carts, wheelbarrows, etc., are to be put on the work at once and by carrying it on energetically it is hoped that it may be entirely completed before the commencement of the rainy season." Derby complained that the plan was not sound, and funds were insufficient, and sure enough, the first "freshet" took out part of the dike, and in the heavy rains of 1855 the river went back into San Diego Bay.<sup>35</sup>

Derby became known nationally as a humorist and his own comment on this work at San Diego is typical:

Here I saw . . . Derby . . . an elderly gentleman of emaciated appearance and serious cast of features. Constant study and unremitting attention to his laborious duties have reduced him almost to a skeleton. . . . He was sent from Washington some months since 'to dam the San Diego River' and he informed with a deep sigh and mournful smile that he had done it (mentally) several times since his arrival.<sup>36</sup>

A painting shows Derby's Dike in 1853 and in Mission Valley beyond, there are a few farms outlined in trees, and a large undeveloped area.<sup>37</sup> Two years of heavy rainfall preceded 1855 when 12.7 inches of rain added up to the flood that washed out Derby's Dike and scoured out the old burial ground at the foot of Presidio Hill as it returned the river to its San Diego Bay channel.<sup>38</sup>

The great<sup>39</sup> flood of 1862 is said to have been the largest in volume.<sup>40</sup> (Precipitation was 15.75 inches that year.<sup>41</sup>) The vast flat between Old Town and False Bay was covered. Houses were swept out to sea; gardens, olive orchards, and a grove of trees thirty feet high were washed away. Capt. Sherman lost his horses trying to cross the stream and a Capt. Johnson was unable to get across to his home for two days. Although apparently the volume of water was vast, there was no terrible loss of property.<sup>42</sup> San Diego was only a town of about seven hundred and fifty people, and Mission Valley was still sparsely settled.

Although a few wells were in use in the town, Mission Valley was still the principal source of water. It was known to old-timer Stephen Peters as Aqua de la Comunidad and was for general use

as were the community grazing lands.<sup>43</sup> The water was obtained in dry season by sinking boxes or barrels into the sandy river bed.<sup>44</sup> Water was carted up to the Hotel in town and cost twenty-five cents a bucket.<sup>45</sup>

In the 1860s, a road crossed the river at Old Town and went up the north side of the river to the mission. One early resident of San Diego remembers that there were several houses on the north side of the river. One man had his house and garden in the river bed and people tried to tell him he would be washed away. He would not believe them, but woke up one morning in the flood of 1867 and found that he and his house were floating down to the bay.<sup>46</sup> Two years of heavy rains preceded the medium flood of '67. This one, together with the flood of '64, had washed away a twenty-four foot section of the Mission Dam although much of it remained in good repair.<sup>47</sup>

The 1870s and 80s were "boom and bust" years for San Diego. The population rose from 2300 in 1870 to 16,000 in 1890. Mission Valley (it received that name in 1870)<sup>48</sup> was the scene of truck gardening as far up as the mission. Sheep herding and bee-keeping were practiced and the marshes and fields were used for duck and dove shooting.<sup>49</sup> An advertisement in the *Union* of Jan. 6, 1893, offers 400 acres of level land in Mission Valley, five miles from town, for \$60.00 per acre. A road crossed the river at the foot of Sandrock Grade and a store called C. W. Sandrock's Tienda was located there. The farmers brought in straw during the summertime in order to pack down the damp sand to provide a firm crossing. Forging the river was impossible if the river was flowing to any extent.<sup>50</sup>

The San Diego Water Company was founded in 1872 to meet the needs of the growing town. While they had several wells in town, the people continued to rely on wells in the San Diego River bottom. The *Union* of June 15, 1877, described the large excavation in the river bed about seven miles from its mouth. There was a pumping station run by steam engines which pumped the water up to a reservoir on the table land rising to the north of the city. The system served the city until 1912.<sup>51</sup> The same newspaper article noted that two or three times during the last thirty years, the river had flowed all year, and several times it had flowed until September.

During the winter of 1873-74, the river overflowed its banks four times, in December, January, February, and March.<sup>52</sup> For two months the stages were unable to cross the river and the mail was ferried back and forth in a row boat. In 1875, Congress appropriated \$80,000 for a government dike to turn the river once more into Mission Bay. Work was done under the supervision of Lt. Weedon and the dike was completed in 1876.<sup>53</sup>



In 1881, the California Southern railroad was built across the San Diego River on pilings driven by steam power.<sup>54</sup>

The next great flood was in 1884. A record of 25.97 inches of rain fell that year with a long wet season continuing until June.<sup>55</sup> The warm and wet spring produced several phenomena. In a diary kept by Mr. Crouch of Oceanside, he remembered that the grass "outgrew itself" and contained no nutriment, causing the cattle to suffer and the lambs and yearlings to starve to death on the feed.<sup>56</sup> That spring also produced a flood of butterflies followed by swarms of cutworms and caterpillars, creating a disastrous year for farmers.<sup>57</sup> Damages to crops and cattle were severe, and although the pumping station was able to withstand the flood, it was moved to the south side of the river in 1805.<sup>58</sup> The railroad to the north was out for nearly nine months and the river flowed all year.<sup>59</sup> A flood occurred again in 1895, with its accompanying damage to crops. Bridges and railway trestles were washed out again.<sup>60</sup>

In 1887, Mission Valley had its land "boom and bust" fling in the Grantville residential project at the upper end of the valley near Mission Gorge. It was so named in hopes of attracting Civil War Veterans but it was never a success and the land "gradually became farming land as nature had intended it to be." (Opinion of Mission Valley Improvement Association, Union, 3-11-46, 7:2.) Allen's Dairy was developed on an old Mexican grant that was bought for taxes. Bernard started a large nursery in the valley with thousands of rose cuttings he brought from France.<sup>61</sup>

Thus Mission Valley retained its rural nature as the turn of the century approached. Floods periodically washed out the truck gardens and farms but actual property damage was slight as real property improvements were few and the population was small. The disruption of mail and rail routes through Mission Valley was a severe handicap for the citizens of the whole area during flood periods.

### **Dairies and Bridle Paths (1900-1950)**

At the turn of the century, San Diego was a growing city of 17,700 whose interests were elsewhere than in Mission Valley. "It's only Mission Valley," quoted one oldtimer who complained of the marshes and mosquitos.<sup>62</sup> An earlier visitor from Los Angeles had spoken of Mission Bay as having "No commercial value" and that the river could fill it up "with impunity."<sup>63</sup> To view the rural scene from above was, however, a favorite pastime of San Diegans who visited Mission Cliff Gardens at the foot of the trolley line on Park Avenue. The beautifully kept grounds opened onto a vista below of the river meandering through small groves and farms. A gazebo was perched on the rim of the cliff. This was also a favorite spot to watch the rampaging river during flood years.<sup>64</sup>

























































































































































If everything in the Fountain Valley plant is in perfect working order, its finished water will contain no detectable levels of bacteria, pharmaceuticals or agricultural and industrial chemicals. The same can be said of very few water sources in this country. But once the Fountain Valley water mingles with the county's other sources, its purity goes downhill. Filtering it through sand and gravel removes some contaminants, but it also adds bacteria (not necessarily harmful, and local utilities will eventually knock them out with chlorine) and possibly pharmaceuticals.

In other words, nature messes up the expensively reclaimed water. So why stick it back into the ground? "We do it for psychological reasons," says Adam Hutchinson, director of recharge operations for the water district. "In the future, people will laugh at us for putting it back in, instead of just drinking it."

Psychologists and marketers have spent a lot of time trying to figure out what makes a product, or a process, seem natural. Obviously, framing the issue properly is the key to acceptance. "If people connect the history of their water to contamination, you'll get a disgust response no matter how you treat that water in between," says Brent Haddad, an associate professor of environmental studies at the University of California at Santa Cruz. "But if you enable people to frame out that history by telling them, for example, that 'the clean water has been separated from the polluted water,' they no longer make that connection." We abridge history all the time, Haddad adds. "Think of the restaurant fork that was in the mouth of someone with a contagious disease, the pillow that was underneath people doing private adult things in a hotel bedroom. If you think of it that way, the intermediate steps, like washing with hot water, don't matter."

**All water on earth is recycled:** the same drops that misted Devonian ferns and dripped from the fur of woolly mammoths are watering us today. From evaporation to condensation and precipitation, the cycle goes on and on. But in the planet's drier regions, where the population continues to rise, we can expect the time between use and reuse to grow ever shorter, with purification, pipes and pumps standing in for natural processes. Instead of sand and gravel filtering our drinking water, microfibers and membranes will do the job; instead of sunlight knocking out parasites, we'll plug in the UV lamps.

You could argue that in coming to terms with wastewater as a resource, we'll take better care of our water. At long last, the "everything is connected" message, the bedrock of the environmental movement, will hit home. In this view, once a community is forced to process and drink its toilet water, those who must drink it will rise up and change their ways. Floor moppers will switch to biodegradable cleaning products. Industry will use nontoxic material. Factory farms will cut their use of antibiotics. Maybe we'll even stop building homes in the desert.

But these situations are not very likely. No one wants to think too hard about where our water comes from. It's more likely that the virtuosity of water technology will let polluters off the hook: why bother to reduce noxious discharges if the treatment plant can remove just about anything? The technology, far from making us aware of the consequences of our behavior, may give us license to continue doing what we've always done.

The recycled water coming out of the sink at the Fountain Valley plant looked good enough to drink. Wildermuth didn't press me to taste it, but I was eager for a sample — to satisfy my curiosity, and to be polite. I filled a plastic cup and took a sip. The water tasted fine, if a little dry; I'm used to something with more minerals. It did cross my mind that any potential health issues from drinking so-far undetectable























































































































































































































































































































































































































































































































**Table 1. Coastal Seawater Desalination Plants in California**

Plant	Purpose	Technology	Capacity**	Energy Use (kWh/AF)	Feedwater Source	Size**
<b>Existing Plants</b>						
Chevron Gaviota Oil and Gas Processing Plant	Processing plant	Reverse osmosis (RO)	460 AF/yr	15,000	Ocean	1,170 sq. ft.
City of Morro Bay***	Domestic	RO	600,000 gpd	8,900	Seawater wells	9,000 sq. ft.
City of Santa Barbara ***	Domestic	RO	7,500 AF/yr	6,600	Ocean	2.1 acres
DPR, Hearst San Simeon State Historical Monument ***	Visitor Center Uses	RO	40,000 gpd	Data not available (n.d.)	Ocean	n.d.
Monterey Bay Aquarium ****	Aquarium	RO	43,000 gpd	n.d.	Ocean	n.d.
SCE, Santa Catalina Island	Domestic	RO	132,000 gpd	n.d.	Seawater wells	2,100 sq. ft.
Offshore oil and gas platforms	Platform Uses	Both	2,000 to 34,000 gpd	n.d.	Ocean	n.d.
PG&E Diablo Canyon Power Plant	Power plant	RO	576,000 gpd	9,100	Ocean	1 acre
PG&E Morro Bay Power Plant	Power plant	Distillation	430,000 gpd	n.d.	Ocean	n.d.
PG&E Moss Landing Power Plant	Power plant	Distillation	475,000 gpd	n.d.	Ocean	n.d.
U.S. Navy, San Nicolas Island	Domestic	RO	24,000 gpd	n.d.	Seawater wells	160 sq. ft.

**Proposed Projects**

Sand City, Proposed Sterling Hotel/Conference Center *****	Private Development	RO	20 AF/yr	n.d.	Seawater wells	n.d.
Cambria Community Services District	Domestic	RO	1 MGD	n.d.	Groundwater wells or Ocean	n.d.
City of Buenaventura	Domestic	RO (probable)	5 to 7 MGD	n.d.	Seawater wells or Ocean	n.d.
Marina Coast Water District	Domestic	RO	1 to 3.5 MGD	n.d.	Seawater wells	n.d.
Metropolitan Water District of Southern California	Domestic	Distillation	5 MGD	6,000	Ocean	n.d.
San Diego County Water Authority	Domestic	RO	10 to 30 MGD	7,200	Ocean	2 acres
U.S. Navy, N. Island Naval Air Stn. & 32nd St. Naval Stn., San Diego	Power plant	RO	700,000 gpd total	n.d.	Seawater wells	n.d.

Excerpts from Chapter 2, pp. 15-26  
CRO/RB, 9/33

**Notes:**

- \* Shaded projects have been all or in part approved or conditionally approved by the California Coastal Commission.
- \*\* 1 acre = 43,560 sq. ft. 1 acre-foot (AF) = 325,851 gallons. In most cases, gallons per day (gpd)/millions of gallons per day (MGD) can not be converted to acre-feet per year (AF/yr) since most plants do not operate every day of the year.
- \*\*\* Plant is permitted and constructed but is not operating.
- \*\*\*\* Plant is permitted and is under construction.
- \*\*\*\*\* Plant was permitted but has not been constructed.

- Go to **Key Desalination Facts**
- Return to Seawater Desalination in California **Table of Contents**
- Go to Seawater Desalination in California **Glossary**
- Return to California Coastal Commission **Publications List**
- Return to **California Coastal Commission Home Page**



























































































































