plained bitterly that Standard Oil had not been held to the same 100 percent damages standard. Attorney General U. S. Webb had brought criminal charges against the company that trespassed on Pacific Western's property. Yet Rolland Vandegrift only sued Huntington Beach trespassers for full damages and an injunction when they refused to pay low royalties, and he dropped the suits as soon as he achieved settlements.46

The Rolph administration had its reasons for settling for such low royalties. Vandegrift and Governor Rolph trod a fine line with their Huntington Beach policy. On the one hand, they favored the politically powerful operators and their political policies, and they wanted the boost that oil royalties, though low, would bring to the state budget. On the other hand, oil operators elsewhere in the state, as well as public officials, pointed out that Huntington Beach crude was contributing to the overproduction and low oil prices that plagued the state oil industry during the 1930s. Huntington Beach operators were among the chief offenders in disregarding state oil quotas, complained Ralph Lloyd, the head of the state conservation committee that sought to reduce output and boost prices. Vandegrift also could not completely ignore the 1921 prohibition on tidelands leasing near municipalities and the 1929 law barring leases along the coast. To allow some production, but not too much, Vandegrift struck deals with operators who had begun drilling wells illegally by November 1933. But Vandegrift would not negotiate with those who began trying to drill beneath the tidelands only after he had signaled, through the settlements, that it could be legal to do so. Vandegrift's solution rewarded oil operators guilty of trespass and theft while freezing out those who obeyed the law.47

California's struggle over coastal oil drilling in the 1920s and early 1930s underscored the increasingly uneasy relationship between coastal extractive industry and the booming tourist, recreational, and residential economy. The controversy also deepened the conflict over who would reap the economic benefit of California's rich coastal oil fields—local oil operators, Standard Oil, or the state government—and when that development would occur. The outcome of the struggles to develop California's coastal oil was determined not by the market, but instead by fierce political struggle among competing interests. In the end, slanted drilling from the uplands largely protected the coastal waters from pollution. But the trespassing and royalty agreements state officials crafted did little to capture revenue for the state government or to speed Huntington Beach's transition to its future beach economy.
flood control agencies were responsible. The river of today was largely constructed under the direction of the U.S. Army Corps of Engineers between 1935 and 1959, after the federal government took over a local flood control program that had proved incapable of satisfactorily limiting the flood hazard in a rapidly growing metropolis. Construction crews working under contract to the Corps of Engineers enlarged the river’s channel, straightened its course, and lined its bed and banks with 7 million barrels of concrete. They created the fifty-one-mile storm drain that is still flatteringly called the Los Angeles River.

In truth, however, the destruction of the river was more gradual and complex, and flood control officials were little more than undertakers, closing the coffin on a river that was by then almost dead. The transformation of the river began a half century before the first concrete was poured, when American settlers from more humid eastern states, unaccustomed to the climate and hydrology of Southern California and unimpressed by the little stream that barely flowed most of the year, drained the river dry and turned it into an industrial site and a dumping ground. By the time a coordinated, regional flood control program began to be viewed as a necessity, the river had been so deprived of its surface flow and defiled by the growing population along its banks that few cared if it was covered with concrete. The nature of development and the price
of real estate along the river, moreover, largely limited the flood control strategies that government officials could consider.

The Importance of Perceptions

Nothing doomed the Los Angeles River more than the physical environment that created it and human perceptions of that environment. Although some mountain peaks in the area receive forty inches of rain and snow a year, coastal Los Angeles County receives but fifteen inches of precipitation on average, and, because of the erratic nature of the region’s climate, even that number exaggerates what can be expected in most years. Rainfall, moreover, is largely limited to three winter months and seldom falls during the peak growing season, so if settlers wanted to plant crops, they had to transport water to their fields from one of the few surface water sources that existed. Because of its particular geology, the Los Angeles River was one of the only streams in the region to flow year-round. Consequently, the earliest villages, aboriginal and European, tended to be located nearby. At least two dozen Indian villages were located along various courses of the river. When Spain, in the eighteenth century, decided to establish an agricultural settlement in the area to supply food to its military operations on the coast, it too chose a location beside the river, founding the pueblo that became Los Angeles in 1781. The river and its underground supply would be the city’s sole source of water until 1913.3

For its first century, Los Angeles remained a small agricultural village, and the river proved a satisfactory source of water for both irrigation and domestic use. It was not until the first transcontinental railroad line to Southern California was completed in 1876, and increasing numbers of Americans moved to the region, that the water supply began to pose a problem. Elsewhere, the environmental limitations presented might have naturally slowed settlement, but here the other physical attractions were so great that such shortcomings were easily overlooked (see figure 6.3).

The same climate that produced minimal rainfall, and left most stream channels dry much of the year, also had positive attributes. The sun shone (and shines) nearly every day. Winter never came, at least not in the sense that the Iowan or New Englander knew it. Tall mountains rose majestically nearby, and, for an alternative view, the beach was a trolley ride away. Real estate promoters capitalized on such conditions, and the mass migration of people to Southern California continued unabated for decades. Even today, with its earthquakes, pollution, traffic, and gangs, Los Angeles retains a powerful pull on people from places that are mountainless, beachless, cloudy for months on end, and hostage to the grip of winter. But the Los Angeles River, even before it was paved, was not seen as part of the benefits package. To emigrants from the east-

cern United States, it was hardly a river at all; it was little different from the nameless creek or brook they knew back home.

Unusual though the Los Angeles River was in the semiarid region, the fact remained that it was a relatively small stream and a limited source of water compared with those possessed by other urban areas. Thus, as hundreds of thousands of newcomers poured into Southern California, the river did not stand a chance. River water carried through numerous open irrigation ditches, or zanjías, that wound through the city had helped to make Los Angeles the earliest wine center in the West and one of the most productive agricultural regions in the nation (see figure 6.4). The first oranges shipped east from California were also irrigated with river water. The river, furthermore, was instrumental in creating the verdant landscape that charmed travelers and settlers from eastern states and contributed greatly to the development of the region’s reputation as a garden paradise. But as the population grew, agricultural interests lost out in the competition for the river water supply. Vineyards and orange groves were subdivided for homes and businesses. The zanjías were gradually filled in and built over. Completion of a second cross-country railroad

Figure 6.3. The Los Angeles River near downtown, ca. 1900. Seaver Center for Western History Research, Natural History Museum of Los Angeles County.
line in 1886 spurred a fare war that inspired an even greater population boom. Eventually, the river would prove unable to meet the city’s water needs.Officials of the private water company that supplied water to Los Angeles residents in their homes first showed concern over the volume of water in the river about the time the second railroad line came to town. Between 1883 and 1892, the number of customers supplied by the company grew from nineteen hundred to nine thousand. In response to the increased demand, the water company sought to conserve more of the river’s surface flow by enlarging its only reservoir, increasing its capacity from 1 million to 13 million gallons in 1884. Despite the added storage, the surface flow of the river soon became insufficient to supply the needs of the growing city. To increase the amount of water available to it, the water company in 1886 installed a double line of perforated pipes—a device known as an infiltration gallery—ten to fourteen feet below the river bottom to capture the river’s underground flow. Water pumped from the infiltration gallery provided an additional 10 million gallons of water a day. The significance of this innovation to the future of the river was even greater. Before long, the river would be drained dry by such developments and Los Angeles would turn its back on the stream that was the city’s reason for being.

As more and more water was required to meet domestic needs, the city of Los Angeles, which maintained control of the irrigation system, became less able to accommodate the water requirements of farmers. By 1886, the network of zanjas had grown in size to irrigate more than eleven thousand acres in and around Los Angeles. More than a dozen named zanjas meandered fifty miles within the corporate boundaries of the city and extended several miles south of its limits. As late as 1894, the city official who oversaw the irrigation system commented that “there is plenty of water in the river.” But by 1897, following three winters of subnormal rainfall, his successor warned that a shortage was developing. “Irrigators are clamoring for water,” he said, “and it seems impossible for me to furnish the same to them.” In 1899, the city water overseer complained that the private water company was “at times taking almost all the water in the river.” As a result, the city was occasionally unable to supply water it had contracted to deliver to irrigators and for which it had already been paid. The situation became so serious in 1900 that Los Angeles was forced to spend seventeen hundred dollars to hurriedly install three pumping plants in the river to tap still more of its underground flow, this time to meet irrigation needs. The Los Angeles River, meanwhile, was beginning to resemble a desert wetcourse.

The city of Los Angeles gained control of the domestic water system in 1902 after a decade-long legal battle. About that time, city engineers calculated that the river, under normal conditions, could be expected to provide at least 45 to 50 million gallons of water a day, even during the summer. At the then current rate of consumption, that was enough water to supply a city of perhaps 150,000 residents. If the Los Angeles River was to continue to resemble a river, it would not be capable of providing even that much water. But as Los Angeles filled up with homes, the notion that the native character of the river should
be preserved never entered the public debate. City officials faced the more pressing problem of how they would supply water to a city that was growing so fast. Aesthetic concerns have little chance when basic human needs are threatened; government officials, moreover, had no mechanism for stemming the tide of newcomers. When the city took over the water system, Los Angeles had a population of about 128,000, and hundreds more were arriving every week. Four years earlier, city officials had begun to investigate options for augmenting the river's supply, and, in 1907, construction would begin on an aqueduct to transport water to Los Angeles from the eastern slopes of the Sierra Nevada, more than two hundred miles away. In the interim, however, they had to take immediate action to prevent faucets from running dry.7

Facing imminent crisis, city officials sought to curb individual consumption through the installation of thousands of water meters and to conserve existing resources by building new reservoirs, but they also sought to drain every last drop of water from the river. Wells were driven into the river at three different points north of downtown, increasing the city's water supply by 15 million gallons a day. New infiltration galleries were also installed. In 1904, a 1,178-foot tunnel was driven into bedrock 115 feet beneath the river bed near the outlet of the Arroyo Seco. Nine wells were then drilled in the river to allow water to percolate into the tunnel. Additional infiltration galleries were installed across from Burbank in 1905, and, the following year, the infiltration galleries constructed by the private water company in 1886 were extended two thousand feet. By removing the subsurface flow of the river, the wells and infiltration devices sucked the river dry. A series of photos taken a few years later by county flood control officials dramatically illustrates the impact such developments had on the character of the river. One shows the river near Griffith Park, upstream from most diversions from its channel, its flow ample, its banks lined with brush and willows. In another, taken "200 feet below (the) filtration galleries," the river is dry, a puddle in midstream the only reminder of its former state.8

The population of Los Angeles rose to nearly a half million by the time the Owens River aqueduct delivered its first water in 1913. The only way the city was able to prevent a shortfall of water in the meantime was by cutting per capita consumption in half, enlarging storage space by nearly a billion gallons, and increasing its use of water from underground sources. The river that had been a magnet for settlement for thousands of years and had nurtured the city for more than a century was destroyed in the process. The once ample stream became a local joke. A turn-of-the-century newspaper columnist later remarked that its channel was "so dry eight months out of the year that a pollywog would have to stand on his head to get enough moisture to soothe a headache." Even booster publications began to find humor at its expense. One such publication referred to the river in quotes. "This 'river'—as the tourist scoffingly emphasizes it—generally only flows underground," it said.9

The Owens River aqueduct increased the volume of water destined for the Los Angeles River because irrigation water applied to fields percolated underground and eventually returned to the surface in its channel. Still, as urban development spread along the river, pollution began to threaten its surface flow. As a result, the stated goal of the city in managing the river was to keep any water from flowing in its channel. The city water department sought instead to intercept any water destined for the river while it was still underground and clean, pumping it from the groundwater basins that were its natural source.

Expansion of two infiltration galleries enabled the city in 1917 to halt all surface diversions from the river and discontinue use of two chlorination plants. When aqueduct deliveries were later increased, however, 5 million gallons of water a day again flowed in the river east of downtown. To prevent water from traveling that far, a new set of infiltration galleries was constructed in 1930. Then, in 1935, twenty-four wells were drilled in the San Fernando Valley, the huge natural reservoir that was the source of most of the river's flow. In 1936, ten more wells were installed. "The object of these wells," said a report of the Los Angeles Board of Water and Power Commissioners, "is to lower water levels enough to prevent any surface water from flowing under the Dayton Avenue bridge, except during flood periods."10 Such statements made clear that the Los Angeles River had become a river in name only (see figure 6.5).

Economics versus Aesthetics

Vital as the river was to the growth of Los Angeles, its significance was always more economic than aesthetic. Though the utility of the river was certainly appreciated, its appearance rarely seems to have been. For the most part, in fact, the river was ignored. It was never the center of local life as some modern-day environmentalists have supposed. The earliest commentaries about Los Angeles rarely mention it, except when it turned vicious and overflowed its banks. Promotional publications marveled at the bountiful harvests its water produced, but said little about the river itself, except in brief historical passages. Guidebooks may have sent tourists this way and that across its channel, to visit picturesque vineyards or steep mountain slopes, but the river seldom received even passing notice. Despite its utilitarian importance, the river also seems to have been one of the least photographed landmarks in early Los Angeles. In the hundreds of images that chart the development of the city in the nineteenth century, the river is almost never seen, except far in the background.

As the Southern California landscape was transformed following the arrival
of the railroads, the character of the river was significantly altered, and soon it was as much deplored as it was ignored. The river, indeed, became the antithesis of the Arcadian ideal so central to the promotion of the region, despite its role in creating that image. Elsewhere, palm trees were planted to confirm the region's reputation as a Mediterranean paradise. Homes and gardens became inseparable. People could sleep outside year-round, or so the popular songs said. But even in the enlightened metropolis, an industrial base had to be developed and the refuse of urban life had to go somewhere. Like so many urban waterways, the Los Angeles River became a dumping ground. But in other ways its plight was unique. Because it carried so little water on much of

its course, its use as a dump was more conspicuous, and the other uses of its channel unique. People actually lived in its bed. Not only was the river linked with industry, it became an industrial site itself.

In Los Angeles, as in other cities, industrial development followed stream courses, though in Southern California this did not occur for all the usual reasons. Elsewhere, rivers provided a means to transport industrial products. They supplied the water that powered turbines and provided a convenient way to dispose of liquid wastes. The flow of the Los Angeles River, however, was too insignificant and irregular to enable waterborne commerce. By the time industry became widespread in Los Angeles, moreover, the river had been so deprived of its surface flow that power generation was not a possibility. The river also had limited potential as an outlet for sewage because there was too little water in its channel to dilute effluents or wash them downstream.

In Los Angeles, industry developed along the river because it was there that the earliest railroads were built, probably because the riverfront lands were prone to flooding and were therefore less desirable for other uses. Southern California's first railroad, the Los Angeles and San Pedro, built in 1869 to link Los Angeles and its future port, constructed its depot one half mile west of the river. Though the impact of this railroad on development was less dramatic than that of the national lines that arrived a few years later, it did inspire the first significant industrial building in the city. Warehouses, lumber yards, blacksmith shops, foundries, and wagon factories began to displace the vineyards and orchards near its station.

When the Southern Pacific Railroad came to Los Angeles in 1876, it took over the tracks of the Los Angeles and San Pedro. The Southern Pacific built its line from San Francisco along the eastern edge of the San Fernando Valley, then south to Los Angeles along the east bank of the river. Its tracks crossed the river near its confluence with the Arroyo Seco and ran south though present-day Chinatown to its meeting with the old Los Angeles and San Pedro. The Southern Pacific constructed its first station a quarter mile south of the Los Angeles and San Pedro depot. Within a few years, a small manufacturing district made up of a gas plant, flour mills, slaughterhouses, and freight yards developed in the vicinity. Railroad development along the river intensified in 1886 when the Los Angeles City Council gave the Atchison, Topeka & Santa Fe a fifty-foot right-of-way on the west bank of the river for its tracks. Before long, spur lines crisscrossed the former agricultural lands adjacent to the river.

Industry was most heavily concentrated in the area between Alameda Street and its channel. This area was home to planing mills, foundries, lumberyards, fuel plants, food and beverage manufacturers, warehouses, and the like. Devel-

Figure 6.5. The dry, sandy bed of the Los Angeles River near downtown Los Angeles, ca. 1930, shows that efforts to prevent any water from flowing on the surface of the river during the dry season were successful. Department of Special Collections, University of Southern California, California Historical Society Collection.
development of the downtown riverfront was completed in 1891 when the Los Angeles Terminal Railroad built a line to San Pedro on the east bank of the river.15

Railroad and industrial development so changed the landscape beside the river near downtown that as the stream channel was gradually robbed of most of its surface flow there was little demand for its care or improvement. Perception of the river had been so altered that in 1887, when eighty horses were killed in a stable fire, their carcasses were dumped in the river bed. Thus, as Los Angeles city officials wrestled with the problem of what to do about the growing volume of sewage produced in the city, many thought it only logical that the city’s liquid wastes be discharged into the river. Perhaps realizing that the river would do little to carry the sewage away, city engineers proposed instead that a comprehensive sewer system be built at a cost of 1 million dollars. The proposal called for the construction of an outfall sewer to transport the city’s sewage fifteen miles across the coastal plain to the Pacific Ocean. Some saw this as an unnecessary expenditure with the river so close. The Los Angeles Times, in an editorial, said, “A fair investigation will make it apparent to all reasonable persons that the building of the outfall sewer would involve a needless expense. The river route...is the natural route.”16

The ocean outfall sewer was eventually approved by voters in 1892, but that did little to prevent degradation of the river. In 1896, for example, the city council received complaints that rubbish was being dumped in its bed. A few years later, the board of health reported that the river channel was becoming a health hazard because of “pollution by pigeons and other species of fowls,” a reference to a large pigeon farm that existed beside the river (though it may seem strange by today’s standards, the pigeon farm was a far more popular attraction than the river). In 1904, five local residents complained to the council that large amounts of tar and oil dumped in the river bed posed a threat to humans and livestock. So much tar and oil had been dumped in the river, one man testified, that a pool had formed that he said was two to ten feet deep and covered an area thirty by eighty feet. Because a thin layer of dust sat atop the pool, he added, it was largely invisible and, as a result, several men and animals had become stuck in it. Four cows, in fact, had to be rescued when they became trapped in the sludge and sank up to their necks. “Only about four to six inches of the cows were visible above the tar,” the man said. “In order to save them from perishing it was necessary to fasten ropes to their heads and with the aid of about forty men, and a team of horses, the animals were dragged from the deposit.”17

With so little water in its bed near downtown, the river also became home to increasing numbers of transients. The Los Angeles Times in 1901 featured a long article on the “ever shifting class that inhabits the river bed.” They includ-

ed thieves, “men of morose disposition with ambition dead,” a drug “fiend,” and even an ex-millionaire. Three photos published with the article show that some of their dwellings were remarkably permanent looking. One looks two stories tall, perhaps to enable its owner to survive high water. In 1903, the city health officer complained that “manure, garbage, etc.” left by “squatters” living in the river threatened the health of local residents, and recommended that the city council enact an ordinance prohibiting people from living in the river channel. Just such an ordinance was approved in 1911, but people continued to live in the river, particularly during hard times. Folk singer Woody Guthrie, commenting on a song he wrote about a deadly 1934 flood in Los Angeles, claimed that many more people were killed than were counted in official death tolls—dirt-poor “Okies” living in the river bed.18

As industrial development spread along its banks, the most common use of

Figure 6.6. Mule-drawn teams haul sand and gravel from the riverbed near downtown Los Angeles in the 1920s. After the river was sucked dry by water developments, the most visible use of its channel was as a source of sand and gravel for construction crews. Los Angeles Public Library, Security Pacific Collection.
the river was a source of sand and gravel for construction crews (see figure 6.6). City council records from the late nineteenth and early twentieth centuries are filled with requests from contractors seeking permission to remove sand and gravel from pits in the river bed. In 1901, the council even approved the construction of a bridge into the bed of the river at Aliso Street to make it easier for teams to haul gravel from its channel. City officials reported in 1907 that one thousand to twelve hundred truckloads of sand and gravel were being removed from the riverbed every day. So much sand was hauled from the river that a city street superintendent warned that the stability of bridge supports and levees built along the river was being threatened.17

The Los Angeles City Council in 1910 sought to gain some control over activity in the river when it enacted an ordinance prohibiting the dumping of refuse and rubbish in its channel. The law, however, was clearly a failure. Even city officials ignored it. Two years after passage of the ordinance, a Los Angeles parks commissioner remarked that the river was “unsightly to the extreme.” He reported that not only were huge volumes of sand and gravel being hauled from the river, but that “teams engaged in removing gravel frequently haul back trash and dump it into the river bed.” The parks department conducted a survey of such activity in 1912 and reported that an average of twenty-seven truckloads of rubbish were being dumped in the river each day. Adding to the unsightly and unsanitary character of the river through downtown was a huge city dump that sat on the west bank of the river and projected into its channel. City council records indicate that, despite the 1910 ordinance, the city continued dumping refuse into the riverside dump until at least 1925 (see figure 6.7).18

There were occasional proposals not only to clean up the river but to beautify its channel, but these appear to have been isolated suggestions, the most sweeping of which, perhaps not coincidentally, were made by nonresidents and relative newcomers, whose ideas about the river may not have been shaped by local attitudes. None of these proposals made it past the idea stage, moreover, which probably reflects the lack of care Angelinos had for their river. The earliest proposal to improve the river was made by Dana Bartlett, a New England–raised minister and settlement-house director, who suggested in 1906 that “despite the fact that its banks are lined with factories and the river bed itself is polluted by utilitarian corporations,” the river could be “made into a line of beauty.” In 1910, another easterner, Charles Mulford Robinson, a proponent for City Beautiful planning, recommended that the river be cleared of trash and that trees be planted on its banks. Even he acknowledged “the river presents a very serious problem, and one which cannot be solved with entire aesthetic satisfaction. A river bed that for most of the year is dry and that has on both of its banks a railroad is not an attractive object.”19

The nature of still other proposals, moreover, suggests much about local perceptions of the river. Joseph Mesmer, an influential local merchant, recommended about 1910 that the river, the “most unsightly sight in the city” in the words of an article describing his plan, be transformed into a series of parks, lakes, and esplanades. To men such as Mesmer, the improvement of the river was an economic issue because the river was the first thing many out-of-town visitors saw when they arrived in Los Angeles by train. More interesting, though, was what Mesmer proposed to do to the river. To create a park six miles long, he recommended that the river’s bed and sides be “lined solidly with concrete.” About the same time, a member of the Los Angeles Board of Park Commissioners made a more modest proposal, recommending only that quarrying activities in the river be regulated and that steps be taken to prevent further dumping in the riverbed. His comments are even more telling. “It would be expensive and difficult, if not impossible, ever to make the river bed a thing of beauty,” he said, “but it is not necessary to have it so ugly and unsanitary.”20
Real Estate and the River

The geographic dimensions of settlement in Los Angeles in the late nineteenth and early twentieth centuries also strongly influenced the future treatment of the river. The city's original Spanish and Mexican settlers, like the Indians before them, understood the erratic nature of streams in arid regions and built their homes far enough from the river to, for the most part, assure their safety in times of flood. Despite its reputation as a land of perpetual sunshine and little rain, Southern California faces a greater hazard from catastrophic floods than probably any other metropolitan area in the nation.

Los Angeles is naturally flood prone because of the region's climate and topography. Tall mountains ring the valleys and coastal plain, trapping runoffs and speeding runoff. Some of the most concentrated rainfall ever recorded in the United States occurred in the San Gabriel Mountains, which rise more than ten thousand feet above Los Angeles. Before their channels were remade by humans, the rivers and streams of the lowlands were ill equipped to carry the great quantities of water, mud, rocks, and trees that cascaded from these mountains during storms. The Los Angeles River overflowed its banks at least ten times in the first one hundred years after Los Angeles was founded. It also changed courses repeatedly and, during one great flood in 1825, shifted its mouth twenty miles down the coast, cutting an entirely new channel directly south after leaving Los Angeles.21

Until the boom of the 1880s led to the rapid subdivision of agricultural lands and increased urban development throughout Southern California, however, floods were usually relatively benign and were seen by many as beneficial because they restored moisture and nutrients to soils. "A flood might be a temporary evil," remarked one early observer, "but like the overflow of the Nile, a year of plenty always followed." There was also less potential for damage from floods before the arrival of the railroads because most of the land near the river was still devoted to farming and few structures had been built on the most flood-prone lands. Maps show that as late as 1876 nearly all of the land within a half mile of the river was still under cultivation. The earliest residential areas in Los Angeles were laid out on the benchlands further from the river and on the terraces east of its channel. This helps explain why, after a flood in 1862, that may have been the most extensive in the history of Southern California, a local newspaper commented that "the losses ... on the whole ... have been quite insignificant."22

The new class of settlers who moved to Los Angeles after the arrival of the Southern Pacific had a very different attitude toward the river, however. Not only did they fail to appreciate the river aesthetically, but they had little respect for its potential dangers. Urban development, as a result, began to seriously encroach on the floodplain. The first significant subdivision of agricultural lands had begun a few years earlier, when the Los Angeles and San Pedro Railroad had built its depot one half mile west of the river. This had spurred a small property boom in the area, and before long home lots began to be sold in the vicinity. Development intensified when the Southern Pacific took over the Los Angeles and San Pedro. Warehouses and factories were constructed near its depot, and the area immediately surrounding the incipient industrial complex was subdivided for residences to provide homes for laborers in the area. Within a few years, much of the area between Alameda Street and the river was occupied by small houses. By the late 1880s, residential development had spread north and south on both sides of its channel (see figure 6.8).23

As Los Angeles grew, few paid much attention to the stream that flowed gingerly through the center of the city. Most probably laughed at the Los Angeles River when they thought of the "real" rivers back home. One who did take

Figure 6.8. Taken from a balloon looking east across the river in 1887, this photograph shows the encroachment of urban development on the west side of the river, east of downtown Los Angeles. Seaver Center for Western History Research, Los Angeles County Museum of Natural History.
the river seriously was J. J. Warner, an early Los Angeles newspaperman who had arrived in Southern California in 1831. As development moved ever closer to the river, he warned in a series of letters published in the Los Angeles Times in 1882 "of the risk to which many ... are exposing themselves, their property and their families in the selection of places upon which to build their dwellings." Warner, who had witnessed major floods in 1832, 1859, 1862, and 1868, wrote, "There are many now living in Los Angeles who do not know the magnitude of the volume of water which flows through this city when the river is flooded." He castigated the "reckless and crafty" real estate agents who had sold property along the river and cautioned that if a flood of the magnitude of previous floods occurred again, it "would destroy a large part of the property situated in that part of the city."24

Such warnings did little to deter newcomers from buying lots in the area, some of them scoffing at the idea that the harmless-looking river could possibly be a threat. The case of Alfred Moore is especially telling. Moore arrived in Los Angeles in 1876, the same year as the Southern Pacific, and bought a large lot a few hundred yards west of the river, where he built a house. An auctioneer by trade, Moore eventually bought several other lots in the neighborhood. Some he sold, but he built small homes on others and began renting them. After Warner's letters were published, Moore responded with a letter of his own, thumbing his nose at the danger. "We need not, I think, feel at all alarmed about a flood," he said. "I have lived on the Aliso Tract ... for the past eight years and never saw a flood yet." He boasted that he had sold six lots "within a few feet of the river" to a woman who was "plucky enough" to disregard the warnings of her neighbors about the possibility of an overflow. "I am selling bottom land lots, so-called, rapidly ever since," he wrote. As it turned out, Moore would be among the hardest hit when Los Angeles experienced a series of major floods beginning two years later. He lost at least eight houses and by the following decade had moved away from the riverfront.25

Still, because long dry periods usually separated the great floods, a characteristic of the region's Mediterranean-type climate, and thousands of newcomers oblivious to the flood risk continued to move to the region, urban development began to line the river up and down its course in succeeding decades. The cities of Burbank and Glendale, located along the river in the San Fernando Valley, and Long Beach, astride the river's mouth, were founded during the Boom of the Eighties and grew rapidly after commuter rail lines were built to them from Los Angeles just after the turn of the century. The first leg of the Pacific Electric commuter railroad was built from Los Angeles to Long Beach in 1902. The line became an immediate success and helped Long Beach grow from a small town to the third largest city in the county by the end of the decade. The Pacific Electric extended its tracks to Glendale in 1904 and Burbank in 1911, and both those towns grew rapidly thereafter as well.

The opening of the Owens River aqueduct in 1913 spurred increased urban development beside the river in the San Fernando Valley. Towns also began to spring up near the river along the Pacific Electric line from Los Angeles to Long Beach. Emblematic of the amnesia Los Angeles had about the danger posed by the river was the fact that two of these cities, Vernon and Huntington Park, were platted directly in the former channel of the river, as it had existed until a flood in 1889 caused it to shift its course sharply east. Within a few years, a large petroleum plant was built right in the old bed of the river.26

Government officials were largely powerless to prevent development on the flood-prone lands adjacent to the river. When the first large-scale flood control program in Los Angeles was initiated in 1915, legal instruments such as floodplain zoning, designed to prevent development in high-risk areas, did not yet exist. Such strategies were still considered to be on shaky legal ground thirty years later, after the federal government had taken over the flood control program.

Further limiting the power of planners was the fact that ownership of much of the river channel itself was in private hands. Elsewhere in the United States, navigable rivers had been set aside as public property, but this was not the case in Southern California since the river carried too little water on most of its course to float a boat. Consequently, as the county flood control program was getting under way, engineers were limited in the strategies they could consider. The cost of land along the river south of Los Angeles, for example, prevented them from giving the river a wide berth and allowing more of its natural character to be maintained. "Land is here so valuable that it is advisable to keep the right of way as narrow as possible," wrote a member of a county flood control planning board in 1915. By the 1930s, the nature of development along the river made it virtually impossible for government officials to consider more ecologically sensitive approaches for preventing floods.27 In truth, however, there seems to have been little public sentiment at the time that such approaches were even desirable. Significant environmental concern for the river is a modern phenomenon.28

It is important to remember, too, that all development in the watershed of the river, not only that in its floodplain, increased runoff, heightened the flood hazard, and ultimately contributed to the remaking of the river. Every new house, driveway, shopping center, and parking lot further transforms the hydrology of the region. Contemporary environmentalists, many of them living outside the area that is considered most susceptible to floods today, have been critical of those living beside the river along its lower reaches who have
fought mandatory flood insurance and have supported efforts to increase structural flood protections along its channel. Such people fail to acknowledge that they, like all Southern Californians, have contributed to the flood risk, that the homes in which they live, the roads on which they drive, the places they work, and the stores where they shop were built atop a landscape that once absorbed and stored most of the seasonal rains. By their very presence in Southern California, they are complicit with the flood control engineers with whom they are so often at odds.

We must resist the temptation, furthermore, to judge history and those who shaped it by contemporary standards. It is essential to consider the context in which people from an earlier time made their decisions. The Los Angeles River, like other urban rivers in the late nineteenth and early twentieth centuries, was viewed as a resource and little else. Residents took from it all they needed to survive until its channel was drained dry. And then they took some more. Flood control projects are generally blamed for turning the river into an eyesore, but in truth it was the city’s increasing reliance on the river for its water supply that first transformed it from a thing of beauty (albeit seldom appreciated as such) into an object of ridicule. Urban development further remade the river, so that even before the first extensive flood control projects were begun, it was rarely viewed as an asset, as something to be saved. Rather, it was an occasional hazard that had to be controlled. Concrete channels merely became the coffin for a river that had already been sapped of nearly all its life.

7

Flood Control Engineering in the Urban Ecosystem

JARED ORSI

A winter storm rolled onshore at Los Angeles on February 13, 1980. A second storm followed a day later, then a third and a fourth and a fifth. A sixth storm brought the heaviest rains yet, swelling the Los Angeles River to its levee tops. Meanwhile, weather forecasters spotted a seventh storm brewing out on the Pacific. As water rose in the dark that night, the swamped electronic stream gauges stopped functioning, and the technicians at the flood control headquarters lost track of how high the water was running. If the river were to spill over its walls, it would eat away at the levees from the landward side. They would crumble, and the torrents would gush into adjacent neighborhoods. No one knew if the channels could handle one more storm. Fortunately, the rain stopped that night, and the seventh storm never materialized. When the sun rose the next morning, inspectors from the Los Angeles County Flood Control District (LACFCD) found flood debris strewn atop the levees near the Wardlow Road overpass in Long Beach. Apparently it had been a very close call.1

The levees at Wardlow Road and other Southern California flood defenses have enjoyed much success. They have prevented more than 4 billion dollars of damage since 1917 and saved an untold number of lives. As the troubling debris atop the levee attests, however, the flood danger persists. Although the levees held in 1980, the storm produced 270 million dollars in property damages, and the brush with catastrophe led the Federal Emergency Management Administration to contemplate raising flood insurance rates and strengthening building codes for property owners along the lower Los Angeles River. By 1987, the Los Angeles District of the U.S. Army Corps of Engineers declared the levee sys-

40. The city’s position is given in "Restraint of State Oil Suits Sought: Beach City Assests Action Interfering with Valuations," San Francisco Chronicle, January 5, 1934. On the concerns about Standard Oil, see George Bush and Lewis Blodget, "Reply Memorandum on behalf of Certain Defendant Property Owners," April 1934, Olson Papers, box 3, Bankcroft Library, University of California, Berkeley, from the case of State of California v. Midway Oil Co., Pacific Electric Railway Company v. Midway Oil Co., Orange County Superior Court, 4-5.

41. "State Demands $400,000 from Oil Operators: Suits Filed in Attempt to Shut Down Beach Producers," San Francisco Chronicle, January 31, 1934; "State’s Share on Oil Set High," Los Angeles Times, January 24, 1934; "Beach City Accuses State in Oil Scheme: Municipality Says Group Promised Leniency to Large Firms," San Francisco Chronicle, February 4, 1934.

42. On Shadie’s estimate, see "Tide Lands Oil Row Settled," San Francisco Chronicle, December 16, 1934. For the later calculation, see "Production Data Huntington Beach Field," October–November 1936, Olson Papers, box 3, Bankcroft Library, University of California, Berkeley.


44. R. E. Allen to members, Central Proration Committee, August 14, 1933, Lloyd Collection, box LCL 8 (1), folder Central Proration Committee and Planning and Coordination Committee, letters, and so on, Huntington Library, San Marino, CA; see also Emil Kluh to Ralph B. Lloyd, October 26, 1933, Lloyd Collection, box LCL 8 (1), folder Central Proration Committee, Huntington Library, San Marino, CA.


47. Ralph Lloyd to Harold Ickes, September 18, 1933, Lloyd Collection, box LCL 8 (1), folder Central Proration Committee and Planning and Coordination Committee, letters, and so on, Huntington Library, San Marino, CA. In January 1934, Orange County assemblyman Craig asked Vandegrift to allow one hundred additional property owners in Huntington Beach to drill into the state pool on a royalty basis, but Vandegrift refused, declaring the Huntington Beach field overdilled. "State’s Share on Oil Set High," Los Angeles Times, January 34, 1934.

Chapter 6: Who Killed the Los Angeles River?


7. Los Angeles Board of Public Service Commissioners (hereafter LAPBSC), Complete


17. Los Angeles City Council, *Minutes*, April 27, 1896; November 11, 1901; August 3, 1903, November 18, 1907.

18. Los Angeles City Council, *Minutes*, February 13, 1912 (quote from parks commissioner); James W. Reagan to Los Angeles City Council, October 7, 1920, Los Angeles City Council Petitions 1920, Communication 2606, Los Angeles City Archives; Los Angeles City Council, *Resolution*, October 20, 1924; Los Angeles City Council Petitions 1924, Communication 6420, Los Angeles City Archives.


Chapter 7: Flood Control Engineering in the Urban Ecosystem

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1. National Research Council, Committee on Natural Disasters, and Environmental Quality Laboratory, California Institute of Technology, Storms, Floods, and Debris Flows in Southern California and Arizona, 1978 and 1980: Overview and Summary of a Symposium, September 17-18, 1980 (Washington DC: National Academy Press, 1982), 11. There is some dispute about how the debris got there. Flood-control officials maintained that the water nearly overflowed the levees, leaving the debris behind as evidence. A few Long Beach residents, however, claimed that waves well below the levees could have tossed it there; Friends of the Los Angeles River (hereafter FoLAR), "Proposed Flood Control Strategy for the Los Angeles and San Gabriel River Systems," appendix (Los Angeles Public Library, hereafter LAPL, 1993); D. J. Walzle, "The Myth of the L.A. River," Buza, April 1996, 64.

2. I borrow this term from the geographer Kenneth Hewitt, who uses it to describe disaster-management systems that give "precedence in support and prestige to bureaucratically organized institutions, centrally controlled and staffed by or allocating funds to specialized professionals." He suggests that technologies both support and are supported by a paradigm that conceives natural disasters to be extraordinary disruptions to otherwise stable and predictable societal systems. After defining disasters in this way, society "can then focus daunting technical expertise and expertise upon tasks technocracy understands: forecasting physical conditions; ever more complete containment of natural processes; educating government and the public; devising general, centrally controlled systems to protect those at risk; and zone 'high hazard' areas; redesigning installations; and if all else fails, organizing relief on a grand scale." Kenneth Hewitt, "The Idea of Calamity in a Technocratic Age," in Interpretations of Calamity from the Viewpoint of Human Ecology, ed. Kenneth Hewitt (Boston: Allen & Unwin, 1983), 8, 16, 19, 20.


5. Los Angeles County Flood Control Association, "Minutes of Convention," July 1, 1914, Old Document Files 4834F, Executive Office of the Los Angeles County Board of Supervisors (hereafter LACBS), Los Angeles. On the proposal, see Los Angeles County Board of Engineers, Flood Control (hereafter LACBEC), by Frank Olmsted, Los Angeles, to Los Angeles County Board of Supervisors, Los Angeles, August 3, 1914, Old Document Files 4838F; LACBS; LACBEC. Los Angeles, to Los Angeles County Board of Supervisors, Los Angeles, September 19, 1914, Old Document Files 4850E LACBS; "Notes for River Control," n.d., Old Document Files 4877F; LACBS; LACBEC, Reports of the Board of Engineers Flood Control to the Board of Supervisors Los Angeles County California (Los Angeles, 1915), 5-11, the engineer's quote is on p. 11.

6. Technically, the flood-control district was a separate entity from the county. This was important because county bond elections required a two-thirds majority approval from the electorate, whereas special districts such as the LACFCD could get bonds approved with a simple majority. In practice, however, the district was essentially a county agency. Its boundaries coincided with the urbanized portion of the county, its executive body was the County Board of Supervisors, and its legal and administrative staffs were also made up of county officials. Eventually the district merged with the county government.


9. "Why Build in Flood Control Channels?" Municipal League Bulletin, April 1938, 4; Parks, Playgrounds and Beaches for the Los Angeles Region: A Report Submitted to the Citizens' Committee on Parks, Playgrounds and Beaches (Los Angeles: Citizens' Committee on Parks, Playgrounds and Beaches, 1930); Charles W. Eliot and Donald F. Griffin, Waterlines: Key to Development of Metropolitan Los Angeles (Los Angeles: Haynes Foundation, 1946); Planning Board, "Flood-Plain Zoning," 10-18. Various forms of flood-hazard zoning were also in effect in the 1920s in cities in New Hampshire, Ohio, and Wisconsin; Planning Board, "Flood-Plain Zoning," 1.

10. On the LACFCD officials' comments, see N. B. Hodgkinson to Paul Baumann, October 27, 1937; Hodgkinson to Baumann, November 30, 1937; Finley B. Lavery to Baumann, October 28, 1937; each letter is housed at the Los Angeles County Department of Public Works Technical Library (hereafter LACDPWTL), Alhambra, CA. On the engineers, see James G. Jobes, "Lessons from Major Disasters" (address to the University of Southern California Institute of Government, June 15, 1939, Public Affairs Office of the Los Angeles District of the Army Corps of Engineers (hereafter PAO), Los Angeles); Anthony F Turhollow, A History of the Los Angeles District, U.S. Army Corps of Engineers (Los Angeles: U.S. Army Engineer District, 1975), 229.


12. On the early initiatives, see Marc A. Weiss, The Rise of the Community Builders: The American Real Estate Industry and Urban Land Planning (New York: Columbia University Press, 1987), esp. chp. 4. On the chamber of commerce position, see Los Angeles Chamber of Commerce, "Stenographer's Reports," April 1, 1936, 8-10, box 21, Los Angeles Area Chamber of Commerce Collection, Regional History Center, University of Southern Cali-