# Landscape History of the Trancas

Historical Ecology Research Summary for the Trancas Crossing Park and Napa River Trail, City of Napa

Technical Memorandum to
Design, Community & Environment

SAN FRANCISCO ESTUARY INSTITUTE

Robin Grossinger
Erin Beller

SAN FRANCISCO ESTUARY INSTITUTE

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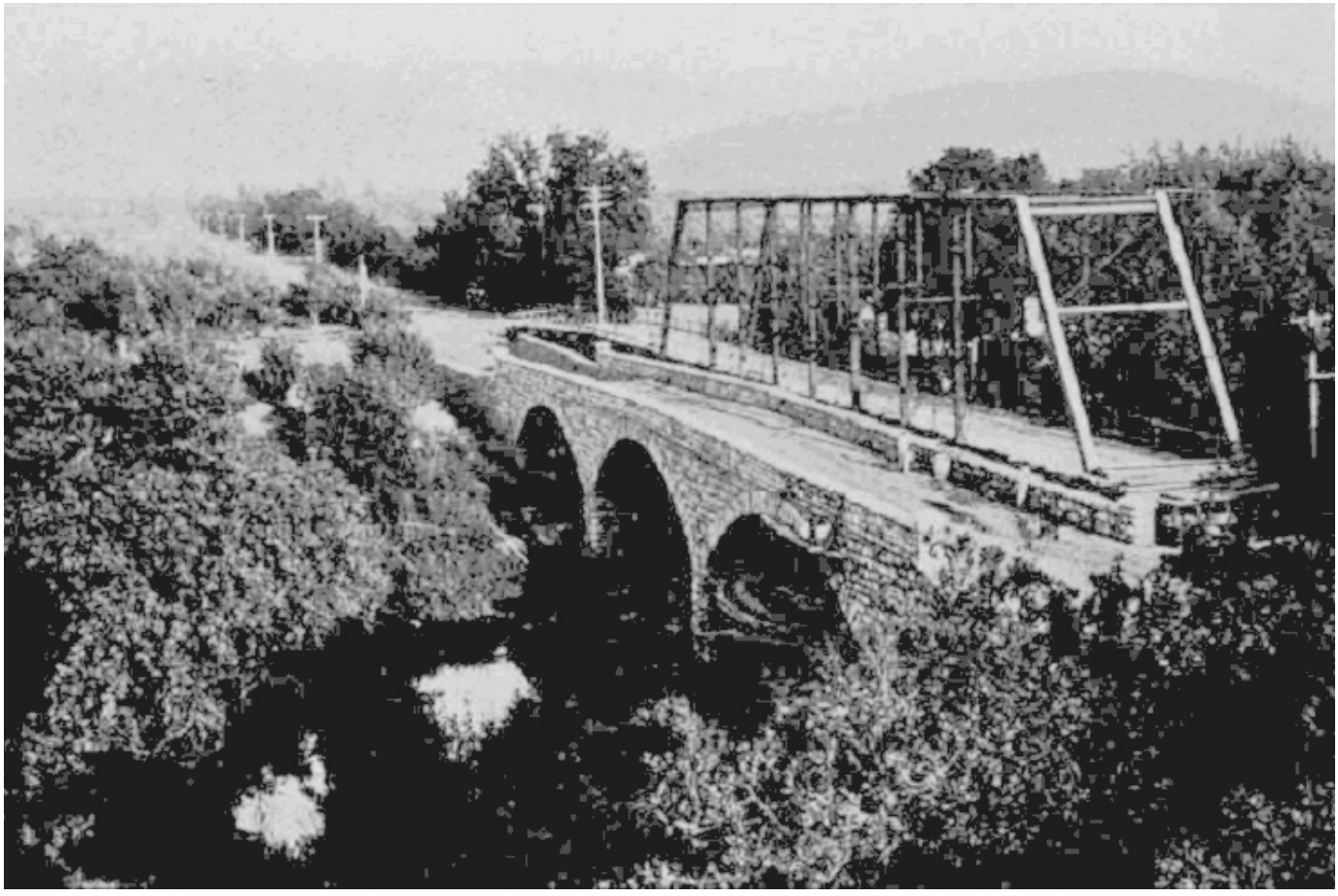


The Trancas Bridge in 1913. Courtesy California Geological Survey (California State Mining Bureau).

One of the earliest Spanish place names in the valley, *Trancas* means barrier ("tranca" = beam or crossbar in Spanish). Its use as a place name on Napa River derives from both the hydraulic and the land use characteristics of the valley during early Euro-American settlement: the inland reach of tidal waters, and the ranch owner's challenge of containing cattle.

While Trancas Road is sometimes thought to indicate the historical head of tide, it more precisely reflects the point in Napa River at which tidal waters were shallow enough that cattle could cross from one side of the river to the other. Downstream of this point, Napa River was continuously filled by sufficient tidal water to serve as a natural cattle fence. Noting this problem, in about 1841 the Vallejos constructed a barrier—"tranca"—made of 30-foot long timbers cut from redwood forests in the westside hills, adding vertical posts to form a fence (Winfrey 1953, Gudde 1998). The Trancas became a landmark for travelers heading north.

## TRANCAS CROSSING

While the redwood fence prevented cattle from straying across the creek, and provided the enduring name, the long-standing importance of the site was as a natural ford for people, rather than cows, to cross the river. Coming from the south, Trancas was the first reliable place for crossing the creek, as fords closer to Napa were difficult to pass at high tide by foot or on horseback.

The west side of the river, including the future site of the Trancas Park, was granted to Salvador Vallejo as the Napa Rancho in 1838. Vallejo also ended up with title to the Yahome Rancho on the other side of the river, creating a massive combined rancho occupying both sides of the river.

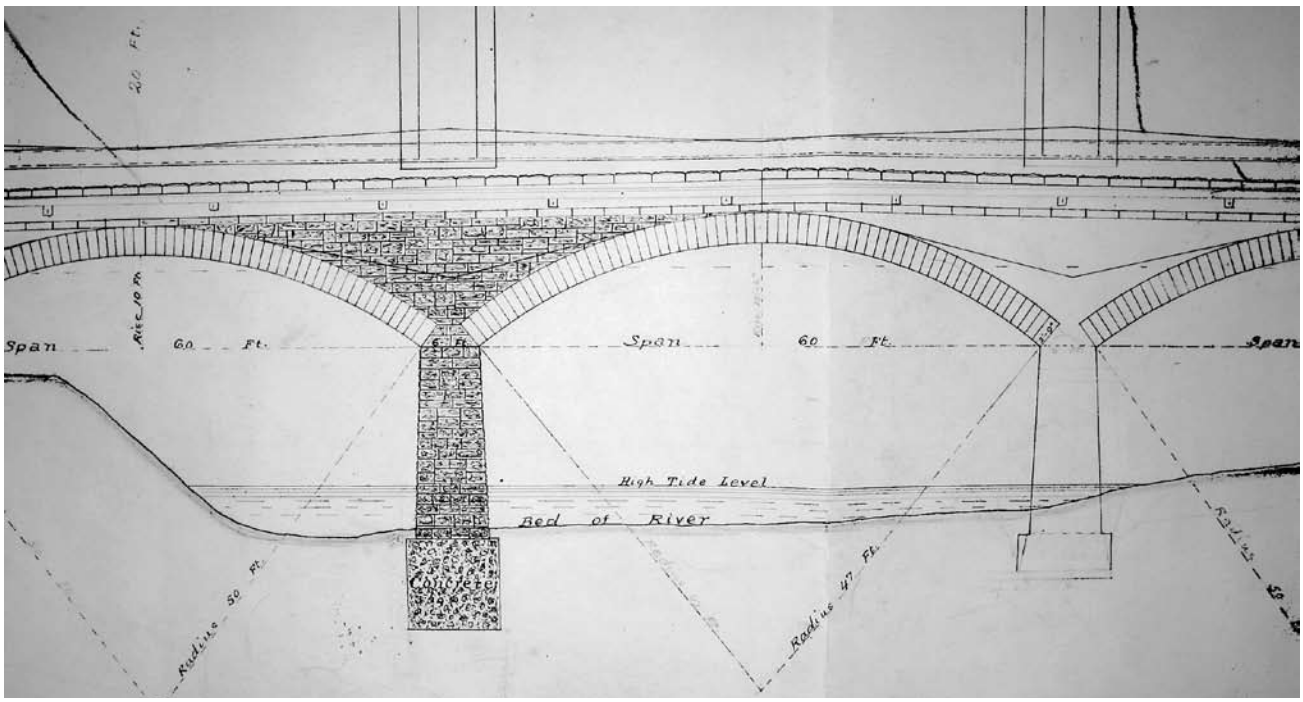
The Trancas became an important cultural center in Mexican rancho times (circa 1835-1850) both for cross-valley transportation and as the upper limit of navigation and commerce using the tidal river. Dillon (2004: 86) reports that small launches were sent up Napa River as far as the Trancas from trading ships stationed in San Pablo Bay, to purchase hides and tallow from Salvador Vallejo at Casa las Trancas. The Casa, built in the early 1840s, was a storehouse and center of Spanish/Mexican colonial activity. It was constructed near an Indian settlement and supplied with corn, barley, pumpkins, and chilies and (presumably) cattle products, produced by Indian labor in the new

fields and ranch lands (Winfrey 1953). Stone (2003) describes a historical marker for the house (which was destroyed by fire in 1919) on Trancas Road about 200 feet south of the house's former location.

The ford was still potentially treacherous at high tide because of a pool of deep water just below the ford. Davis (n.d.) tells the story of how even at low tide two horses and a buckboard ended up in the deep water, with both horses drowning. (Additionally, Davis ascribes the introduction of carp to the Napa River to this incident, as the expedition was carrying young fish to stock newly created fishponds at the home of General Miller on Milliken Creek.)

The ford was eventually replaced by a series of bridges. The crossing location was generally set by the now well-established roads, but was adjusted slightly south, presumably to take advantage of the narrower and steeper channel geometry which was more favorable for bridge construction. A three arch stone bridge across the "Big Trancas" was built in 1913 with stone from the Wing Quarry in the hills to the northeast (Bradley 1915). (The Trancas Road bridge over neighboring Milliken Creek was referred to as "Little Trancas.") A number of historical photographs document the Big Trancas construction (frontspiece, 1.2). An elegant engineering drawing shows the brick-by-brick design of the bridge as well as the channel geometry and "High Tide Level". (1.1)

**1.1** Detail of the original "as-built" drawing for the 1913 Trancas Bridge. Courtesy Napa County Recorder's Office.

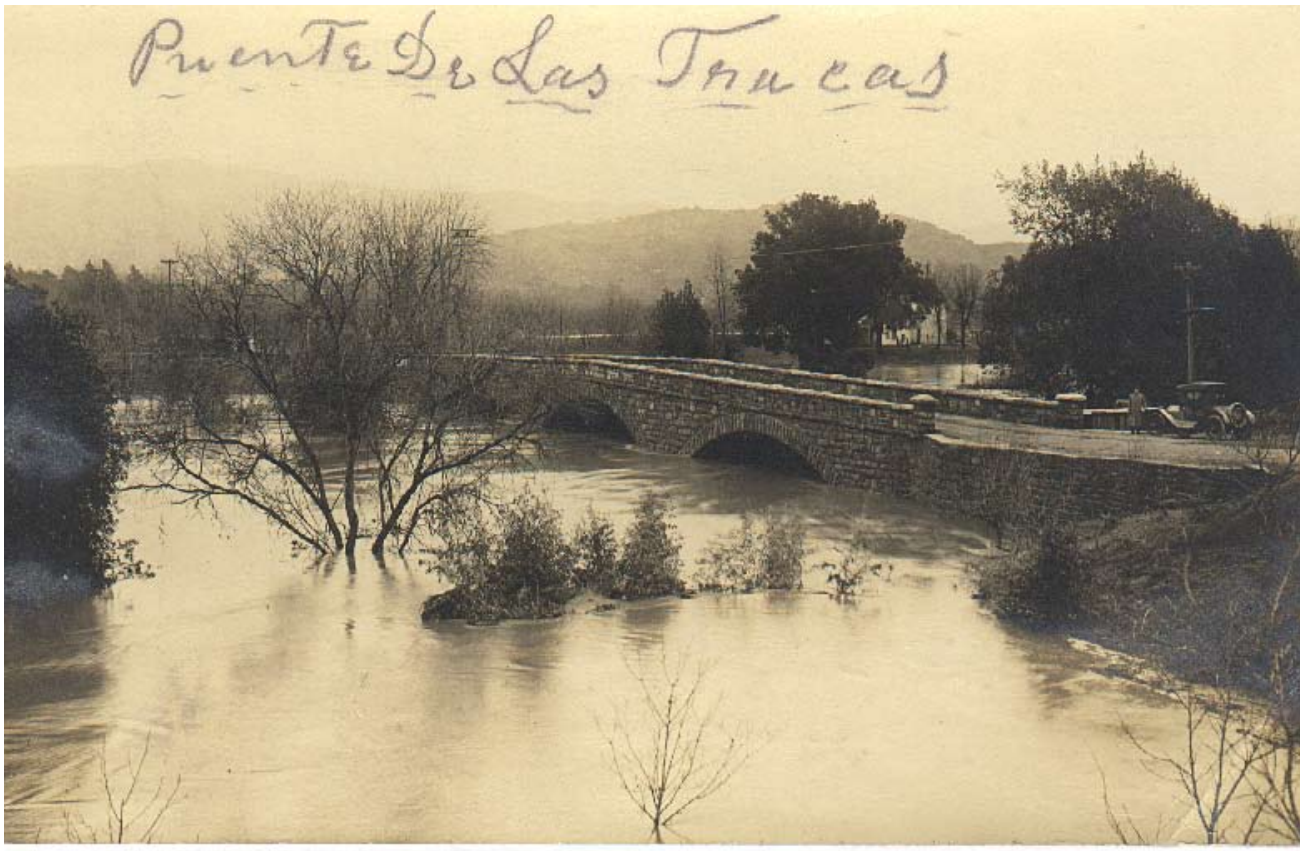


**1.2** Construction of the Trancas Bridge. Courtesy Al Edmister.

## NAPA RIVER DAM

One of the less well-known historical aspects of the Trancas area is the Napa River Dam, a major modification to the river that persisted for almost fifty years. After decades of failed efforts to develop a reliable surface water supply for the growing town of Napa, prominent local citizens formed the Napa City Water Company in 1883 (Stone 1983). Within several years a dam had been built far enough upstream to be above tide limits, backing up "a quarter-mile lake like stretch of clear water." (Tortorolo 1978). Tortorolo describes the structure as a concrete dam "not much more than 10 feet high." Water was filtered through an old locomotive boiler full of sand at the dam site and piped by gravity to cisterns and a pumping plant at Hagen Road at the Silverado Trail for storage in a reservoir constructed upslope.

The dam remained in place for nearly a half-century, long after it ceased to provide Napa's water supply. Though Napa residents advocated "to leave the old Napa Water Dam stand as it is, and to permit those who




**1.3** Trancas crossing in flood, early 1900s. Courtesy Al Edmister.

have in the past enjoyed fishing and swimming to continue to do so without interference", upper valley residents petitioned the Napa City Council for the dam to be removed to allow fish passage upstream (City of Napa 1926, 1927). The dam was dynamited sometime around 1931 (Tortorolo 1978).

The Napa River Dam played an important role in the development of the City of Napa, serving as a major source of water until the Elm St. well field was installed in 1906 (Tortorolo 1978). Increasing demand and brackish groundwater led to the construction of Milliken Dam in 1924.

The dam may also have played a significant role in the decline of the Napa River's anadromous fishery. Chinook salmon, which may have been present in the river historically (Napolitano et al. 2006), would be largely excluded by a barrier of this size. A long-term impassable barrier such as the Napa River Dam could have effectively eliminated runs of Chinook from the Napa River (Leidy personal communication).

The location of the dam has been described as "one third to one half mile" upstream of the Trancas bridge crossing (Tortorolo 1978, Hoover n.d.). As part of this project, the original deed by Vallejo to the Napa City Water Company was uncovered by city staff, providing more locational detail.

The company bought the right to build a dam on Vallejo's property for $250 in 1885:

> ...to build, erect and construct a dam on the west bank of Napa river to the middle of the said river, to the heighth [sic] of five (5) feet above the ordinary level of the water, so as to raise the water by the said dam five (5) feet above the usual water level, and to

> sink and excavate beneath the earth on the bank, and in the river bed as deep as may be necessary to make a permanent safe and reliable dam to hold water. The point at which the dam is to be erected is N. 47 W. and about 4500 feet from the machinery of the Napa City W. Company's works.

The description of the dam's proposed location in relation to the Waterworks places it about 1750 feet north of Trancas Road, definitively within the park site and within 10 m of an apparent artificial stream bank structure in 1940 aerial photography (1.4). Given the erosion of the west bank, it is unlikely that remnants can be found on this side, but on the east side, which has been largely depositional, ruins have been observed in recent decades (Gardner personal communication).

Vallejo's specifications for the dam design give some information about channel conditions. The top of the stream banks here is currently about 30 feet elevation (USGS 1980; Aerometric Surveys 2007). The Waterworks site, which was gravity fed from the dam, lies at about 20-25 feet elevation. So it appears that the dam was sited just far enough up stream to lie uphill from the waterworks and would have had to extend to top of bank to achieve the necessary elevation. This would suggest that the stream bed was also "not much more than" 10 feet deep. A photograph of the dam circa 1918 (Tortorolo 1978) appears to affirm this geometry; the 10 foot high dam was not in a much deeper chasm. Presently the stream is 20+ feet deep at the site.

*A communication was received from Lodi Farm Center asking that the Council caused the Dam in Napa River north of the City removed so as to allow the natural run of steelhead to their spawning grounds, the tributaries of the Napa River.*

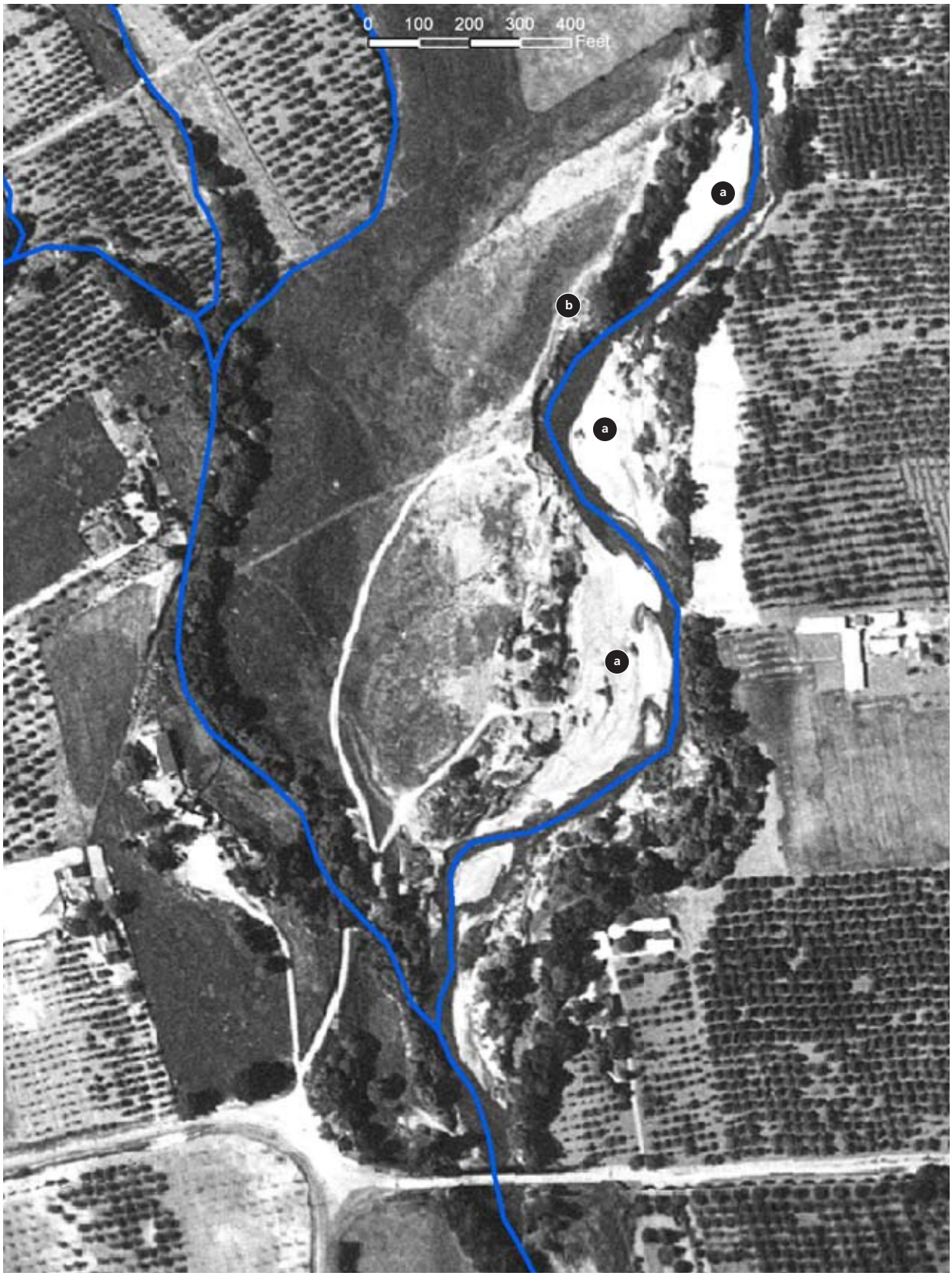
(Napa City Council 1927)

## RIVER DYNAMICS

Several other physical characteristics of the site contribute to its distinctive history and contemporary conditions. Historically, a large secondary channel of Napa River rejoined the main stem here. This overflow channel has been disconnected and largely filled, but its lower portion remains intact. It serves as the lower portion of the Salvador channel, and can be seen on the west side of the site. Evidence for smaller overflow channels or swales can be seen in topographic maps (USGS 1980, Aerometric Surveys 2007). The dynamic, frequently flooded nature of the site has precluded successful conversion to agriculture despite efforts in the past.

The Trancas bridge crossing is one of the relatively few places in the lower valley where the main stem of the Napa River lies at the outer edge of its floodplain and has cut into a large alluvial fan of a tributary creek. On its west bank, the river has cut into the southernmost portion of the broad Dry Creek fan, probably overlaid with sediment deposited by Napa Creek as well. The Charter Oak Bank (and, previously, the Tomfoolery bar) has taken advantage of this steep bank to hang over the creek channel.

On the other side, the bank is much lower as the floodplain extends broadly to the east. This asymmetry has affected bridge design, creating a downward slope of about 10 feet from west to east.




**1.4A.** 1940 aerial photograph of the Trancas Crossing Park site. The blue lines indicates the Napa River mainstem and secondary channels (sloughs). Note the large, unvegetated gravel bar surfaces (a); similar features are found consistently upstream along the river in this era. The probable location of the Napa River Dam (b);based upon Vallejo's 1885 description, corresponds to an anomalous narrowing of the channel, presumably ruins of the dam (destroyed ca. 1931). Image from SFEI photomosaic of Napa RCD/NRCS photographs.


**1.4B.** 1965 aerial photograph of the Trancas Crossing Park site. While this image is not georeferenced, substantial changes can be seen. The mainstem has straightened and a large bar has been deposited on the west side a. Riparian forest has expanded onto former gravel bars b. The likely site of the former Napa River Dam is shown at c. Courtesy Earth Sciences and Map Library, University of California at Berkeley.


**1.4C.** 2005 aerial photograph of the Trancas Crossing Park site. The *ca.*-1940 channel network is shown in blue. The channel has exhibited substantial lateral migration and riparian forest expansion. The likely former site of the Napa River Dam (a) has probably been eroded on the west bank, but remnants may still be preserved on the east bank. Courtesy NAIP.

At the bridge crossing, historical cross-sections from 1913 (Napa County) and 1960 (Napa County) each indicate similar channel geometry to contemporary (Napa RCD 1996) conditions. However, further upstream the river is less confined and has been more dynamic. The Napa River Dam information suggests that the channel was much shallower in the late 1800s to allow a 10 foot dam to divert water across the adjacent valley surface. Field observations also suggest substantial incision, on the order of as much as 10-15 feet, although this is not conclusive. It is possible that incision is not observed downstream because tidal processes attenuate erosive forces in the tidal reach.

Comparison of 1940, 1965, and contemporary aerial photography also indicates substantial lateral channel movement (1.4). For example, comparing the river position between 1940 and 2005, we observe a loss of approximately 40 m (132 feet) at the large, currently eroding bend on the east side of the park site (1.4).

Assuming a constant rate of change over 65 years, annual land loss at this point would be ~0.6m/yr (2ft/yr). Comparison with 1965 imagery indicates that channel movement has not been constant, and recent lateral migration rate has probably been greater than the longer term trend.

At the same time, in-channel habitat has changed dramatically. Whereas extensive unvegetated gravel bars were visible in 1940, riparian forest has colonized nearly all of these surfaces in subsequent decades. It is likely that these bars received frequent overflow and scour historically but, as a result of incision, now function as elevated terraces that receive little natural disturbance by flood flows, permitting vegetation expansion.

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