



The Nature and History of Flooding in Soquel Village

Flood waters have flowed in Soquel Village at least eight times since 1890 (see Table 3). Severe damage was incurred during the floods of 1931, 1937, 1940, 1955, and 1982. Newspaper accounts tell a similar story for each of these flood events.

December 28, 1931

"The most popular song many Soquel families were singing was "River stay away from my door". Old timers had seen Soquel Creek on a rampage before, but those coming here within the last twenty years had never believed it could be possible to have it move right inside their homes".

February 14, 1937

Headline: "Soquel and Capitola Streets like rivers when Creek overflows". "Soquel Creek went rampaging down the highway in the center of town yesterday afternoon when it overflowed its banks and sent families living on the lowest portions of Porter Avenue scurrying for safety. There was no clearance under the (Soquel Drive) Bridge in the center of town and water covered a wide area in a remarkably short time".

February 29, 1940

Picture caption: "Logs jam at Soquel Bridge". "Scores of residents watched highway workers and a big crane work throughout the day to clear the log jam against the highway (Soquel Drive) bridge. This picture shows the hoist in action and by last night half the debris was cleared".

Same day -

"... in the early afternoon the runaway creek spilled over the highway and piled debris against the concrete and steel bridge".

December 25, 1955

Headline: "(Governor) Knight says Soquel damage as bad as Yuba City" ".The western half of the business district (in Soquel) suffered damage because of a tremendous log jam that forced water to divert most of its torrenting force in business houses".

The 1955 flood destroyed the Soquel Drive Bridge that was constructed in 1922 and had withstood the floods of 1931, 1937, and 1940. In its place the present bridge was constructed much to the displeasure of local residents. The greatest hazards associated with the present bridge are the low clearance (14 feet), and a single pier within the main channel which catches large woody debris.

The flood of January 4, 1982 was similar to previous floods on Soquel Creek. A log jam formed at the Soquel Drive Bridge and diverted the majority of the streamflow through town. Eyewitness accounts (Kane, Delineas, Negro, Hope, pers. comm.) have been used to put together the following sequence of events on January 4th:

9AM--Logs, some large, are seen floating downstream at intervals of one every few minutes. This is the approximate beginning of log movement which continues and increases throughout the day.

Noon - 1 PM--Water tops the bank and begins to flood Old Mill Mobilehome Park. Water flow (discharge) as measured by the U.S.G.S. streamgage just upstream, was 4,010 to 4,721 cfs.

2-3 PM--Mobile Home Park completely flooded. Downtown also flooded. Water at the Soquel Drive-Porter Street intersection (a low point) is about 2' deep. No log jam. Discharge of 6,034 to 6,883 cfs.

4 PM--Large logs start to float downstream in numbers. Still no log jam, but water deepens in downtown area. Discharge = 7,500 cfs, and U.S.G.S. stream gage stops working.

5-6:30 PM--Flows continue to increase. Many logs are moving downstream. U.S.G.S. personnel cannot lower their equipment into the water for fear of damaging it. Big logs (greater than 24" diameter) coming down at the rate of one every few seconds.

Sometime during this period a large log jam forms at Soquel Drive Bridge and the majority of stream flow is gradually forced out of the channel and through town.

6:30 PM-3AM/JAN. 5--Water crashes through town with tremendous velocity. Large logs caught in flow damage many structures. Water rises to over 5' deep in downtown. Sometime between midnight and 1AM peak discharge of 9,700 cfs is reached.

The aftermath of the storm found over 70 buildings flooded and 57 mobile homes seriously damaged (Thompson, 1982). The two mobile home parks were particularly hard hit. The log jam left behind the Soquel Drive Bridge contained 26,900 cubic yards of logs and sediment (Dodson, pers. comm.).

In each major historic flood (Table 3), water inundated the downtown area to a depth of several feet. In every case where detailed information on flooding behavior is available, a log jam formed at the Soquel Drive Bridge, and the area now occupied by the Old Mill Mobile Home Park suffered major damages. There are subsidiary flood channels in Soquel Village which behave in a manner similar to other uninhabited floodways upstream (Fig. 5 and 6). Most newspapers and local resident accounts state that flow jumps the banks upstream of the Soquel Drive Bridge in the Old Mill Mobile Home Park (formerly Willowbrook Lodge) and splits up into two weakly defined waterways. One goes directly toward the Post Office and then back into the stream, the other flows to the main intersection of town and continues down Porter Street before re-entering the stream near the Soquel Grange Hall. The force of the water flowing through Soquel Village is tremendous usually lifting floors, tossing mobile homes on their sides, and pushing logs like battering rams through buildings.

Log jams at the Soquel Drive Bridge increase the height of floodwater in Soquel Village such that a thirty year flood potentially produces a degree of inundation greater than the postulated 100-year flood (Thompson, 1982, U.S.A.C.E., 1973). Such was the case in the December 1955 flood when Soquel Creek reached a maximum elevation of 62.3 feet above sea level, just 0.3 feet short of the 100-year flood stage (1955 was estimated to be 12,000 cfs, a 30-year event, while the postulated 100-year event is 16,400 (U.S.A.C.E., 1966). Thompson (1982) found similar flood height discrepancies associated with the January, 1982 flood.

Even without a log jam at the Soquel Drive Bridge, Soquel Village is in imminent danger of being flooded. The Floodplain Information Study (U.S.A.C.E., 1973) produced a map showing areas flooded during the hypothetical 100-year flood (see Fig. 7). This map shows that nearly all of Soquel Village is within the 100-year floodplain. Their study concludes that flooding begins in Soquel Village when discharge exceeds 5,000 cfs. Obstructions, such as log jams, which would increase floodwater height in town, were not considered in their calculations.

Human impacts do not account for the onset of flooding conditions, but heighten the hazards associated with it. Besides the obstructions provided by the Soquel Drive Bridge, other human impacts that have increased flood hazard in the Soquel Village area are the encroachment of structures within the high flow channel, the removal of streamside riparian vegetation, the failure to adequately floodproof new buildings within the 100-year floodplain (Fig. 7 [not included in web excerpt]), and the addition of human-produced debris from upstream areas. Such debris may consist of bridge beams, streambank log cribbing, and all or portions of structures built too close to the stream. In 1931, a cabin from the Willowbrook Village area was swept into the channel, became lodged against the bridge, and had to be dynamited out. Today, the Old Mill Mobile Home Park is located in the same vulnerable location, with mobile homes extending to the brink of the streambank.

Inspection of historic aerial photos shows that the Old Mill Mobile Home Park has expanded its property several yards by filling in a small portion of the high flow channel. Other business and residences have also reduced the capacity of the channel to carry flood flows by building too close to the stream. Some houses below Wharf Road near the freeway have been constructed on a very low flood terrace that used to be covered with riparian woodland. These houses have a chance of being flooded once every few years. Although Santa Cruz County required the living quarters of each house to be elevated above floodwater levels, it is not likely that the buyers were aware of the degree of flooding and inconvenience they would be subjected to. The pole foundations of these structures, supposedly flood-proofed, may need a debris-barrier or floodwall to protect them from battering by logs. This type of development should not be allowed in the future.

The historical frequency of flooding in Soquel Village, the statistical analysis of the streamflow record from 1951 to 1982, and the manner in which flooding occurs upstream all indicate that Soquel Village rests upon a floodplain which Soquel Creek has used naturally for flood water storage and movement. The largest floods of recent times, 1955 and 1982, are relatively low order events with recurrence intervals of 30 and 16 years respectively. If a high-order event, such as a 100-year flood, occurs in conjunction with a log jam at the Soquel Drive Bridge, the damage to Soquel Village would be much greater.

Table 3 – Major Floods in Soquel Village 1890 to Present from Historic Newspaper Accounts (a)

Newspaper Date	Water through Town	Logjam at Bridge	Damage to Old Mill Mobile Home Park Area (b)	Landsliding in Watershed
Jan. 25, 1890	?	X	?	X
Jan. 20, 1906	X	?	?	X
Jan. 1, 1914	X	?	?	X
Dec. 29, 1931	X	?	X	X
Feb. 14, 1937	X	X	X	X
Feb. 28, 1940	X	X	X	X
Dec. 26, 1955	X	X	X	X
Jan. 4, 1982	X	X	X	X

Minor flooding is reported on January 22, 1895; March 23, 1907; January 23, 1909; December 11, 1937; January 21, 1943; and January 31, 1963.

(a) Source is *Santa Cruz Sentinel*; list may be incomplete since not all years were checked

(b) Formerly known as Willowbrook Village

Source

Singer, Steven. *Soquel Creek Storm Damage Recovery Plan: a reconnaissance level study with recommendations for watershed management*. Aptos, CA: U.S. Soil Conservation Service, 1983, pp. 21-24, 28.

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