

**From:** [DELOS PUTZ](#)  
**To:** [Board Comment](#)  
**Cc:** [Judy Arnold](#); [Damon Connolly](#); [Moulton-Piers, Stephanie](#); [Katie Rice](#); [Dennis Rodoni](#)  
**Subject:** PLEASE IMPOSE RATIONING NOW  
**Date:** Saturday, March 19, 2022 6:49:20 PM

---

We are in the midst of a severe drought. We need to conserve the water that we have. Restrictions on water use should have been imposed many months (years) ago. Raising the price of water does not restrict use in a rich county. It is evident that people will not stop watering their lawns and otherwise wasting water unless MMWD requires them to do so. PLEASE IMPOSE MEANINGFUL RESTRICTIONS IMMEDIATELY. Building a pipeline to import water from the East Bay does not guarantee that water will be available from the East Bay when needed. IF YOU ARE CONCERNED THAT RESTRICTION WILL OFFEND VOTERS, YOU PROBABLY DO NOT BELONG ON THE BOARD OF THE MARIN MUNICIPAL WATER DISTRICT.

Marin also needs to build a water treatment plant--or two or three of them. This problem is not going to go away on its own.

C. Delos Putz  
San Geronimo

March 21, 2022

Board of Directors  
Marin Water  
220 Nellen Ave  
Corte Madera 94925

Interested Parties:

re: Phoenix Lake

In your consideration of what role Phoenix Lake might play in Marin Water management, the following may have relevance? These were prepared for the April 2016 USACE Workshop in Ross, chaired by Jared Huffman.

Please, note the history of water level changes enacted to ensure public safety includes multiple reviews by CA Department of Water, Division of Safety of Dams. Unless this state agency has been declared utterly inept, their prior actions should be of interest to this Board and current MW Staff who may be unaware of past proposals' outcomes.

I commend to your attention also the Geotechnical Data Report prepared for MCFCWC by URS Corporation in April 2015 as well as related reports regarding stability of the slopes surrounding Phoenix Lake.

Thank you,

A handwritten signature in black ink, appearing to read 'Garril Page', with a long horizontal stroke extending to the right.

Garril Page

cc:

Ben Horenstein  
Paul Sellier

## Phoenix Lake

Construction of Phoenix Lake began 1905, and was completed in 1906. The reservoir and dam are in a highly active seismic area, six miles from the San Andreas and eleven miles from the Hayward 'Strike Slip' faults. Question: is stability threatened by an interdependent association with known or yet-undiscovered faults?

The reservoir is surrounded by eleven mapped landslides, some active. Slope instability may be triggered by rapid lake rise or drawdown, a landslide which changes water level, affecting stability of the dam face and embankment. Phoenix Lake has a documented history of slope and dam face failures caused by rapid changes in the lake level. Questions: are mapped or undiscovered faults likely to become unstable as a result of water level fluctuations or earth movement? Could slides affect pump, drain or flood gate functions? How stable is the earthen dam?

In 1908 the dam was raised by 15 feet, doubling reservoir capacity. During the 1960s, multiple dam failures resulted in rigorous dam inspections in California. In 1964, MMWD took the reservoir out of service for modification and conversion to primarily recreational and scenic use. After a 1978 warning, the lake level was dropped six feet to ensure Ross' safety lest the dam face slump during an earthquake. Today, if approved by Sacramento's Division of Dam Safety, the flood control plan for Phoenix Lake detention basin is water storage beyond current capacity using an inflatable rubber device to hold back excess storm water. Question: if the dam fails, who assumes liability and restitution?

The Capitol Improvement Plan (CIP) for Phoenix Lake's use as a detention basin calls for two staggered releases from the reservoir before anticipated heavy rains: first by 14 feet, then 20 feet, for a total draw-down of 34 feet. These steps would be incorporated into some warning system before implementation, timed to avoid another emergency draw-down during active flooding as occurred in 1982. Questions: How reliable is the warning system? How fail-safe are the response and drawdown processes? How accurate are the weather reports that drive this process?

The goals are to save the dam without flooding downstream areas, hold storm water until storm threat has passed, and also ensure that the depletion of the reservoir can be replenished by subsequent storms. Questions: What is the effect of back-to-back storms? Should this operational process be in a Flood Control Manual with mandated step-by-step execution written by today's consultants? Past efforts to use Phoenix Lake for flood control have been rejected as not cost-effective and causing slope failures. What has changed? **[see attached letter]**

On the MMWD website, Phoenix Lake's capacity is 411 acre feet (AF). In draft reports sent to the State Water Board's Division of Dam Safety (DODS), the consultants use capacity figures of 525 and 300 AF. Questions: Why such discrepancies? What does the reservoir hold under defined study conditions? Is appropriate information being used to calculate dam safety?

Storm water drained from Phoenix Lake through Ross Creek or as 'local drainage' surface flow was omitted from the Corps design. The CIP design calls for drain downs of the reservoir which increase flows in Ross Creek at the confluence of Corte Madera Creek, exceeding channel capabilities and adding to flooding. Question: why is this problem not acknowledged and resolved in County and Corps planned flood control measures?

*Garril Page*



## MARIN MUNICIPAL WATER DISTRICT

220 N. Elmer Avenue  
Dante, Marina, CA 94025-1160  
415.924.4600  
FAX 415.927.4253

December 8, 1994

Peter Barry, M.D.  
Marin Hills Medical Group, Inc.  
915 Sir Francis Drake Blvd.  
San Anselmo, CA 94960

Dear Dr. Barry:

This letter is in reference to your letter of November 15 concerning the operation of the Marin Municipal Water District's Phoenix Lake near the Town of Ross.

Phoenix Lake is one of the older District facilities. Construction of the structure began in 1906. When Marin County was more sparsely populated, Phoenix Lake was an important part of the area's water supply system. Now this small lake serves as a reserve water supply and as a recreational and scenic resource for the community.

As the lake became less and less important to the water supply system, several proposals were made to operate the facility to provide a measure of flood control for Corte Madera Creek, to which the lake is tributary. Since the District has no authority to operate its facilities to provide flood control, these proposals were made through other agencies, specifically, the Marin County Department of Public Works and the U.S. Army Corps of Engineers. Neither agency believes that the lake can provide significant flood control benefits and both have declined to participate in such a scheme.

In addition, even if one of those two agencies were to agree to be responsible for flood control operation of Phoenix Lake, such operation would have to be coordinated with the California Division of Safety of Dams. The dam at Phoenix Lake is an old hydraulic fill structure ill-suited to the rapid lake level fluctuations characteristic of flood control operations. In the few instances where, under the direction of other agencies, the District has operated in the manner that you suggest, slope failures occurred on the upstream face of the dam. The Division of Safety of Dams may well decide that flood control operation of this structure would be unreasonably stressful to the dam embankment.

J 22:19

In summary, while I am sympathetic to your request, the District has no authority to operate Phoenix Lake in the manner you propose. The District will, of course, cooperate with other agencies in developing an operation plan for the facility that addresses your problem as long as any such plan does not jeopardize District use of the project.

Sincerely,



Ronald L. Johnson, P.E.  
General Manager

RLJDR:bg


cc: Board of Directors

# MAP 2-11 LIQUEFACTION SUSCEPTIBILITY HAZARDS






## Legend

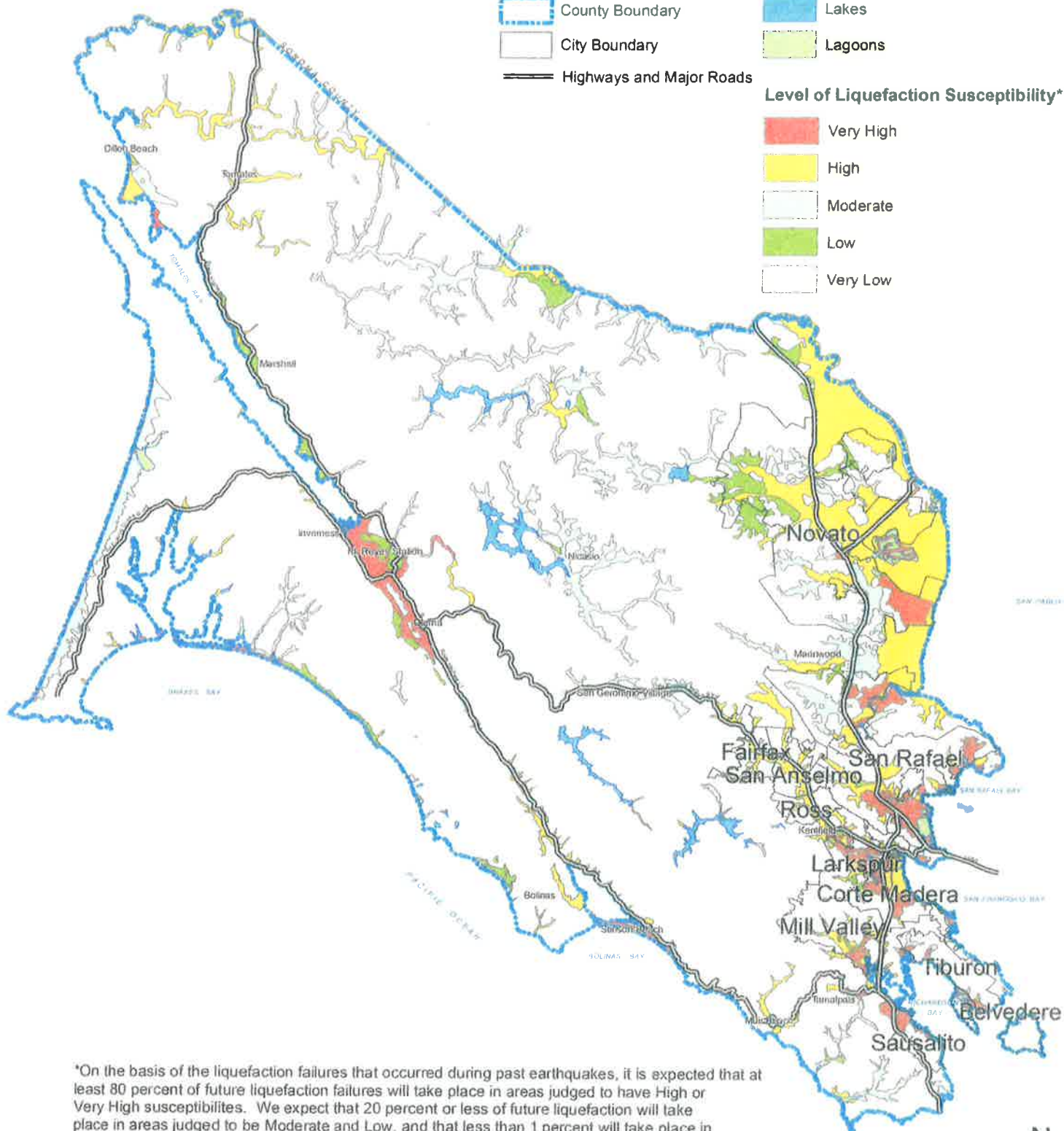
-  County Boundary
-  City Boundary
-  Highways and Major Roads

## Water Bodies

-  Lakes
-  Lagoons

## Level of Liquefaction Susceptibility\*

-  Very High
-  High
-  Moderate
-  Low
-  Very Low



\*On the basis of the liquefaction failures that occurred during past earthquakes, it is expected that at least 80 percent of future liquefaction failures will take place in areas judged to have High or Very High susceptibilities. We expect that 20 percent or less of future liquefaction will take place in areas judged to be Moderate and Low, and that less than 1 percent will take place in areas judged Very Low (Knudson et al., 2000).

SOURCE: Knudson, K. L., Sowers, J. M., Witter, R. C., Wentworth, C. M., and Holley, E. J., Preliminary Maps of Quaternary Deposits and Liquefaction Susceptibility, Nine-County San Francisco Bay Region, California: A Digital Database, Open-File Report 00-44, Online Version 1.0, U.S. Geological Survey, 2000.

0 1 2 4 6 8 Miles

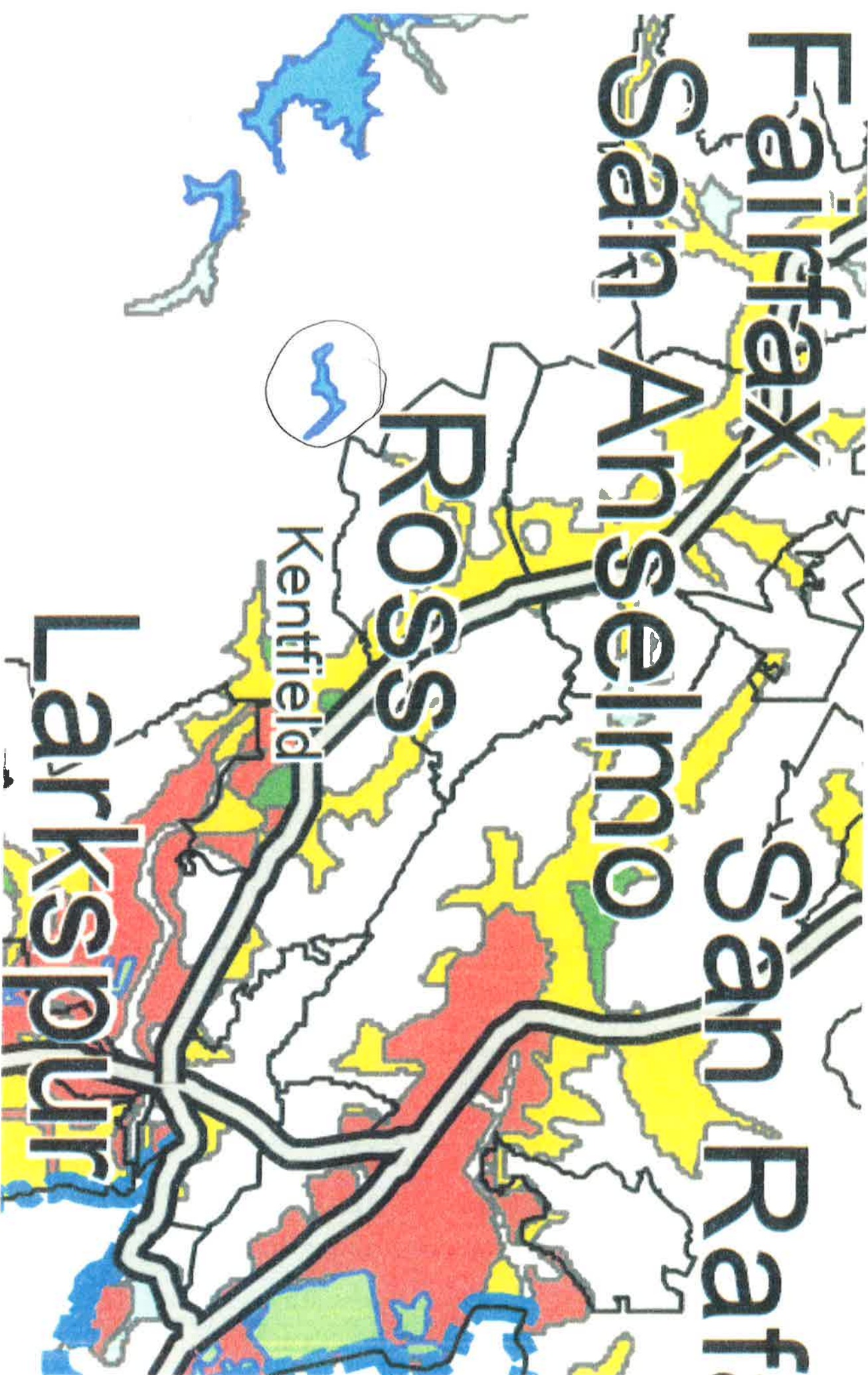


THIS MAP WAS DEVELOPED FOR GENERAL PLAN PURPOSES. THE COUNTY OF MARIN IS NOT RESPONSIBLE OR LIABLE FOR USE OF THIS MAP BEYOND ITS INTENDED PURPOSE.

Date: September 28, 2007

File: Lique 2-11.mxd





Fairfax

San Rafael

San Anselmo

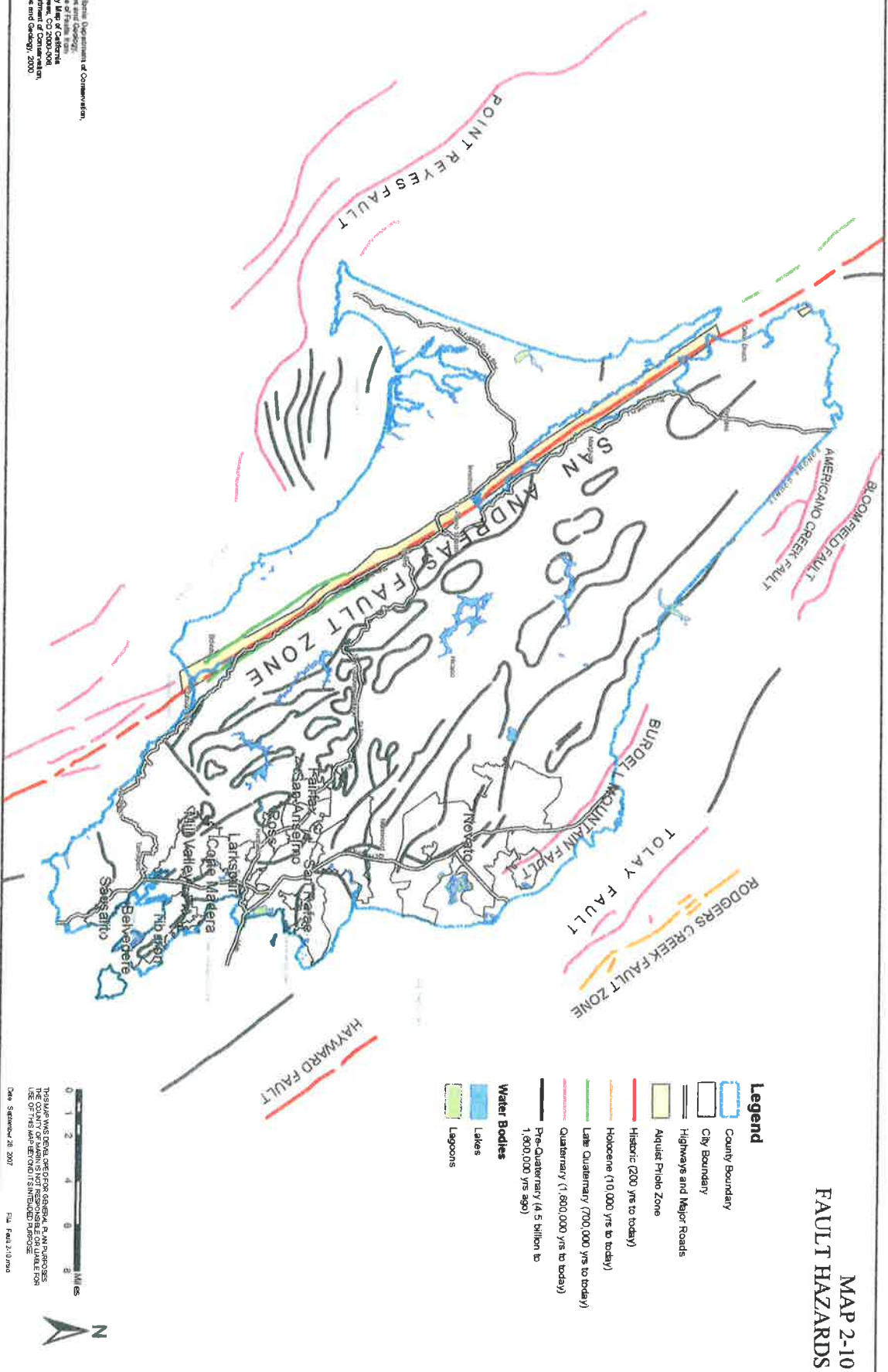
Ross

Kentfield

Parks

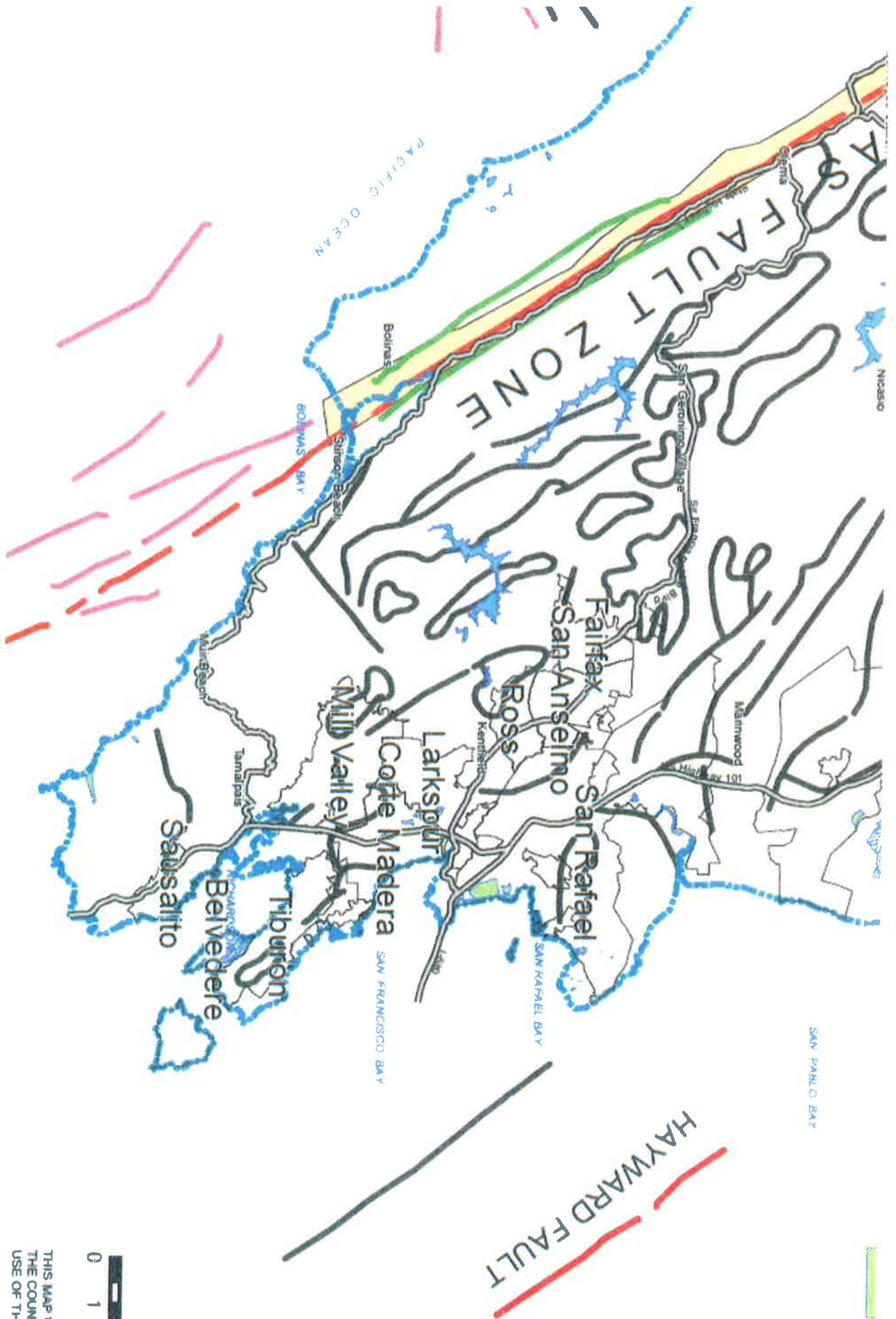
Larkspur

# MAP 2-10 FAULT HAZARDS



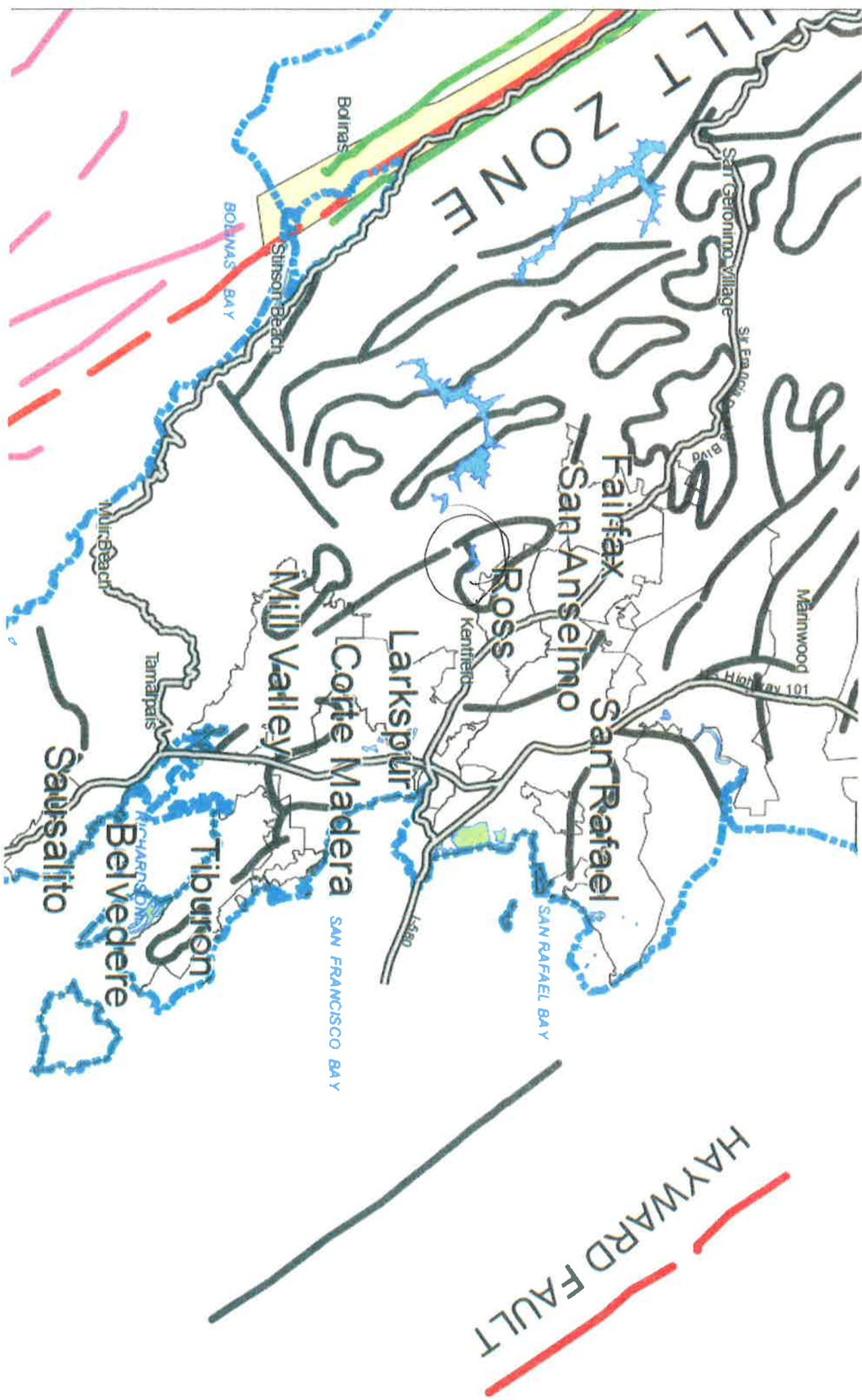
SOURCE: California Department of Conservation, Division of Mines and Geology, "Seismicity and Fault Activity Map of California and Adjacent Areas, CD 2000-2004, California Department of Conservation, Division of Mines and Geology, 2000.

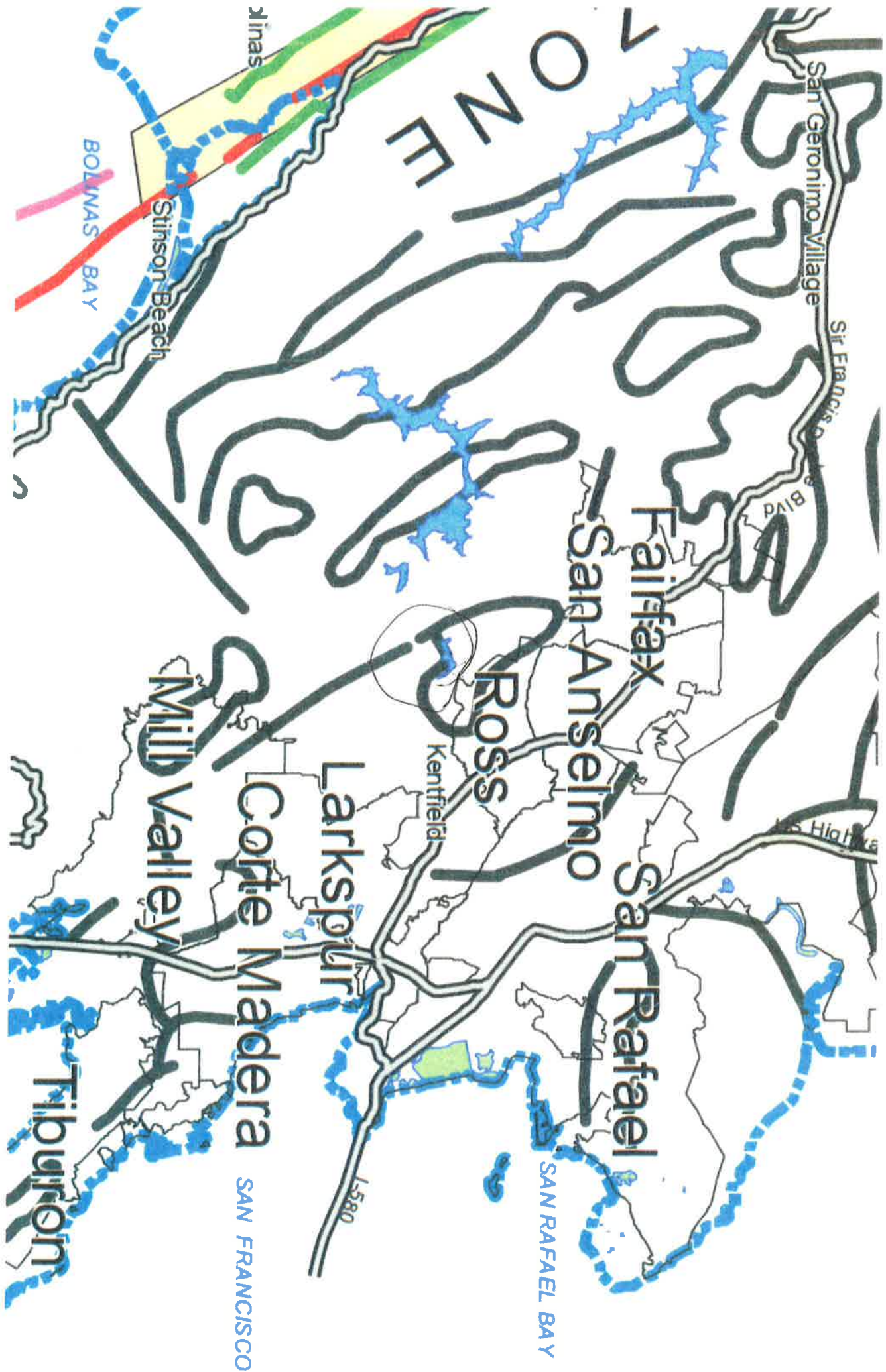




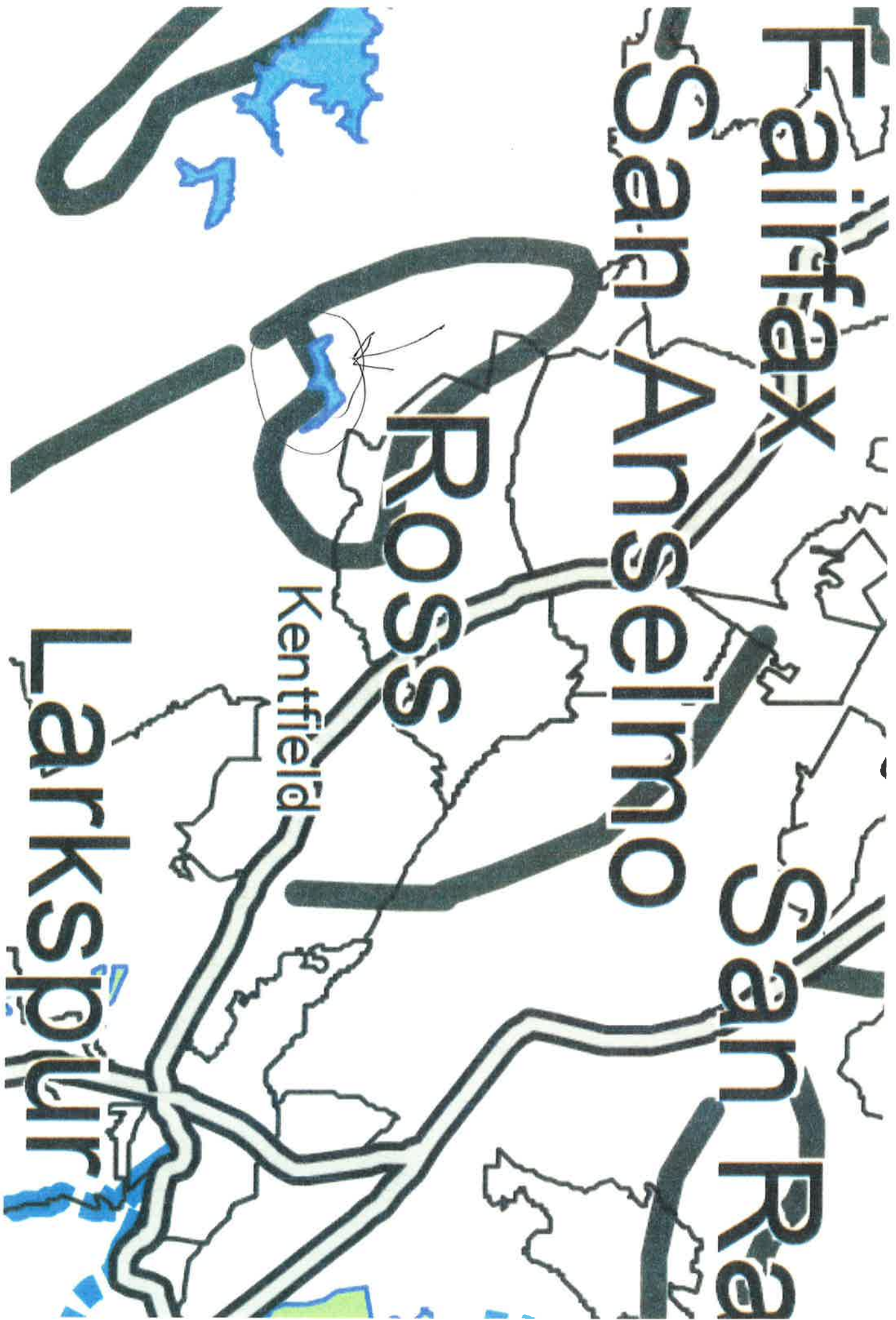
THIS MAP WAS DEVELOPED FOR THE COUNTY OF MARIN IN CONNECTION WITH THE USE OF THIS MAP BEYOND IT
















# MAP 2-12 FLOODING

## Legend



-  County Boundary
-  City Boundary
-  Highways and Major Roads

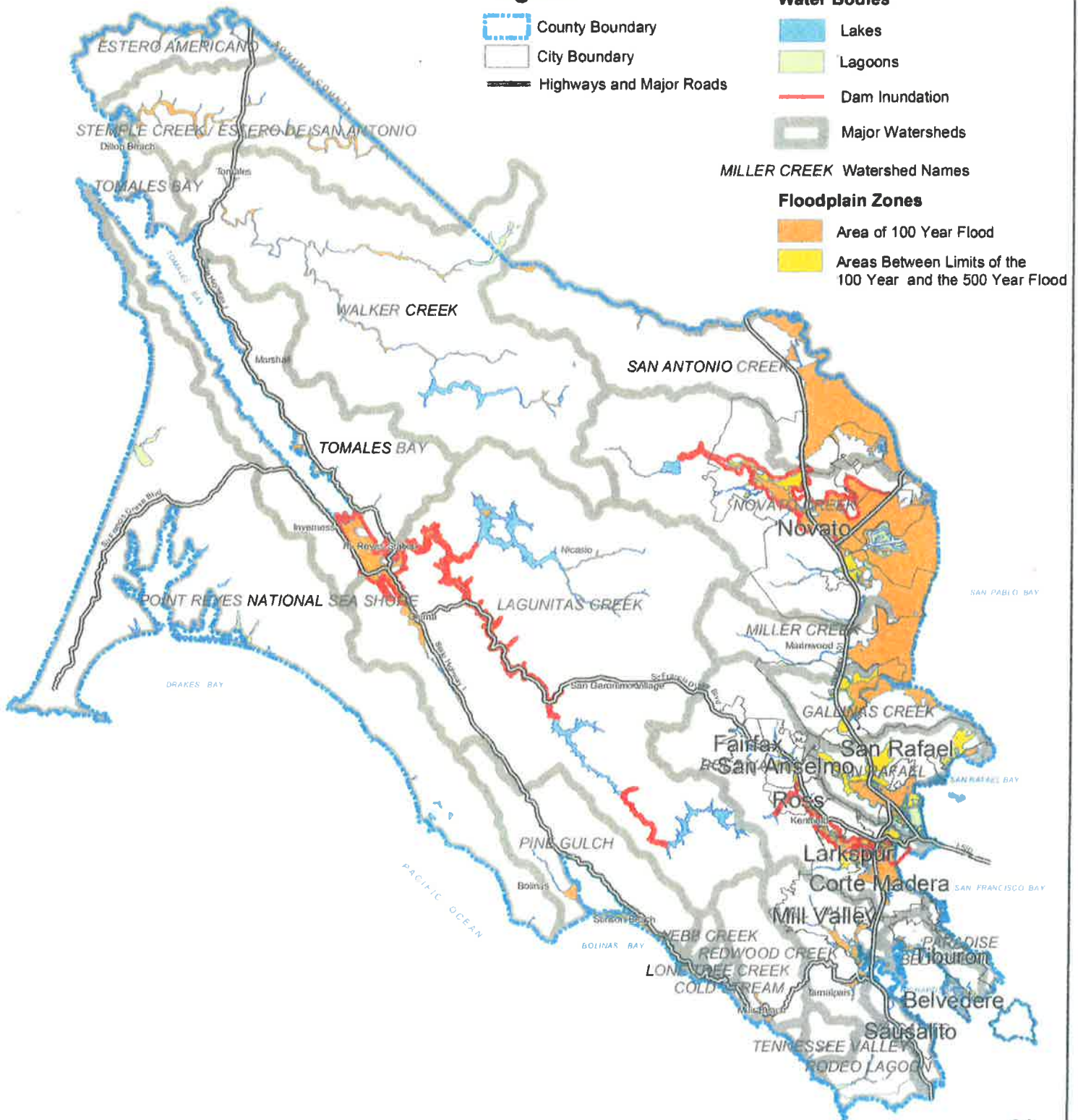
## Water Bodies

-  Lakes
-  Lagoons
-  Dam Inundation
-  Major Watersheds

## MILLER CREEK Watershed Names

## Floodplain Zones

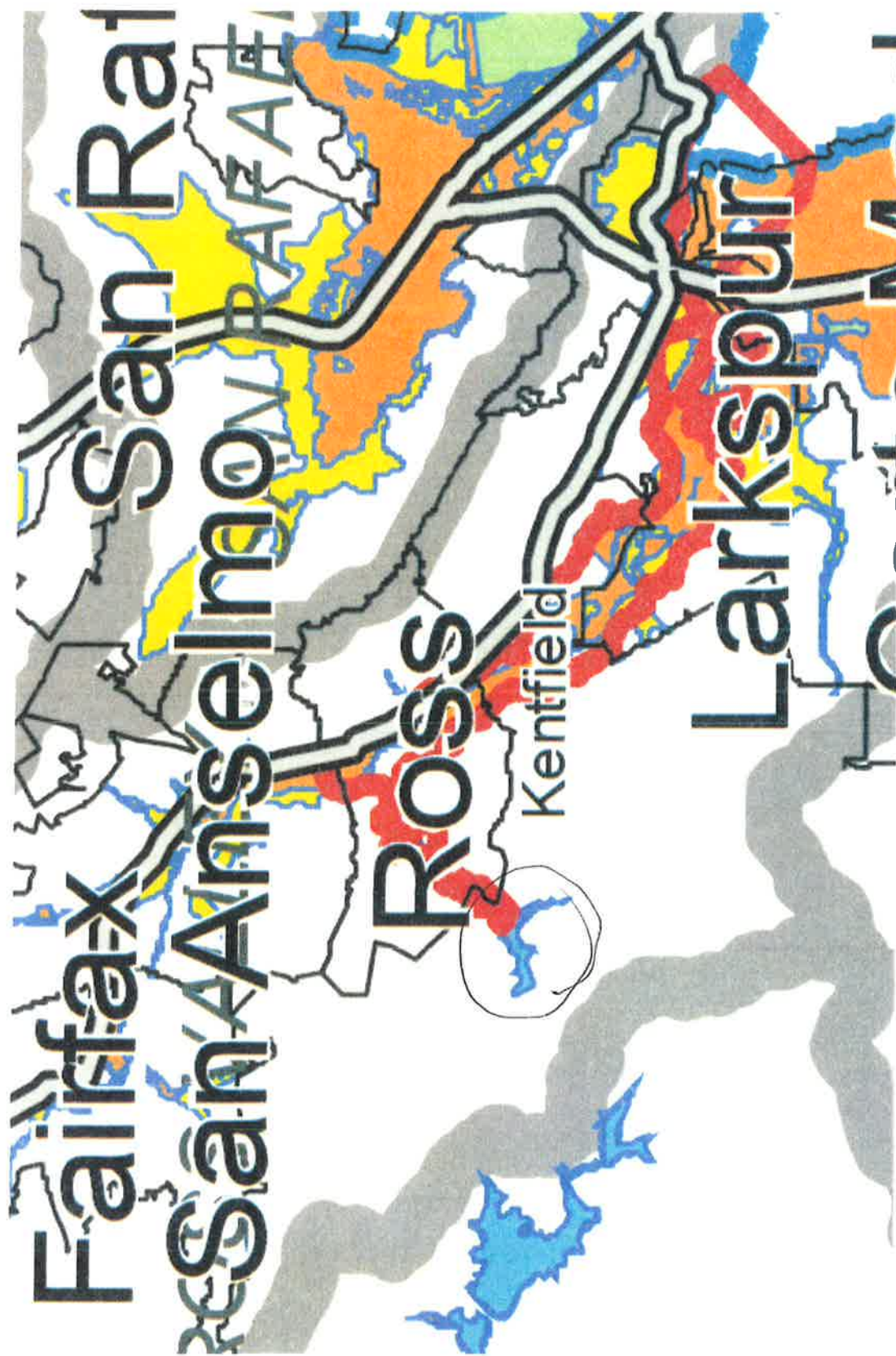
-  Area of 100 Year Flood
-  Areas Between Limits of the 100 Year and the 500 Year Flood



0 1 2 4 6 8 Miles



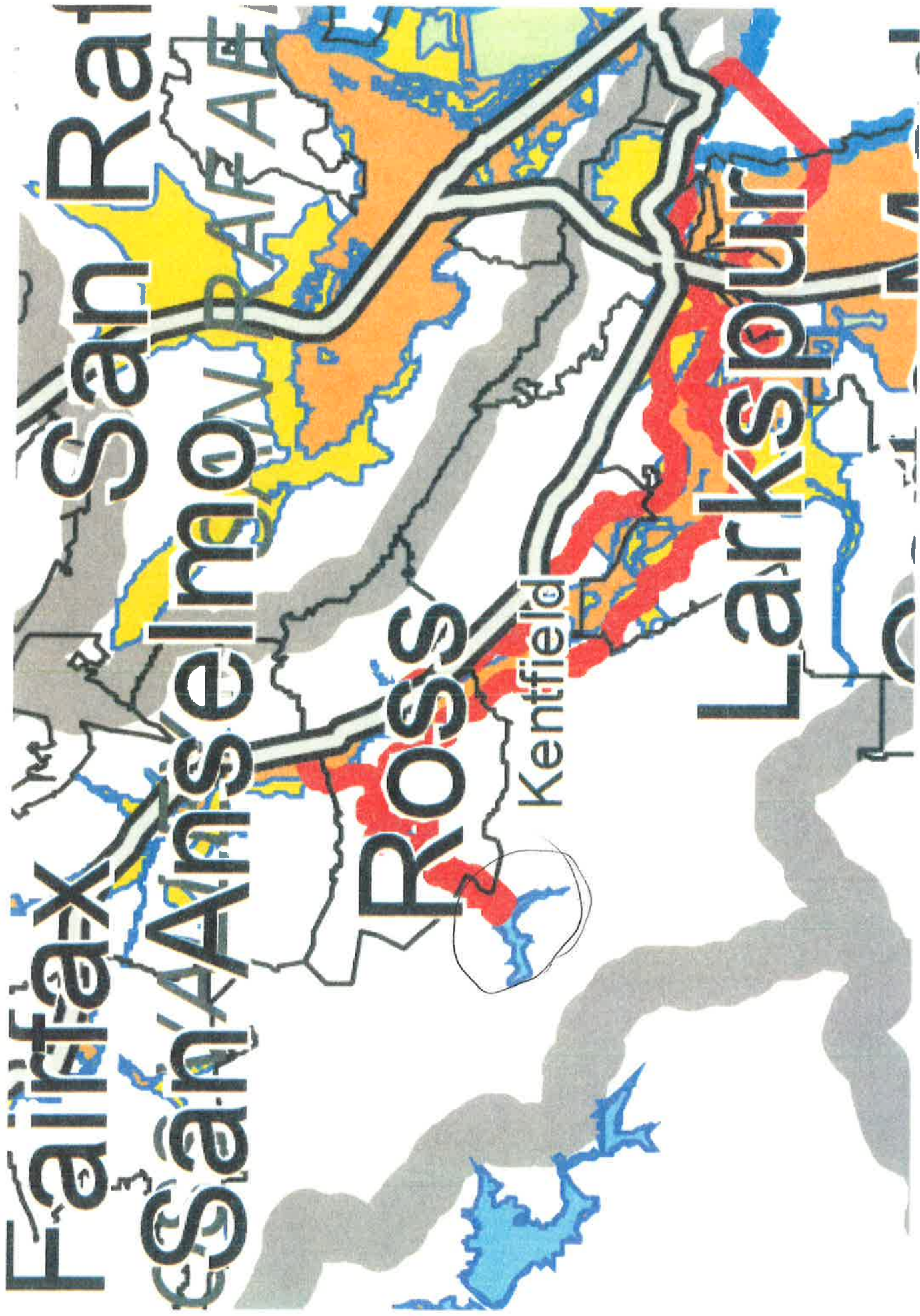
THIS MAP WAS DEVELOPED FOR GENERAL PLAN PURPOSES.  
THE COUNTY OF MARIN IS NOT RESPONSIBLE OR LIABLE FOR  
USE OF THIS MAP BEYOND ITS INTENDED PURPOSE



MAP 2-12  
FLOODING

— Dam Inundation





Dam Inundation

map 2-12