Sonoma Water

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Flood Zone Committee 2A

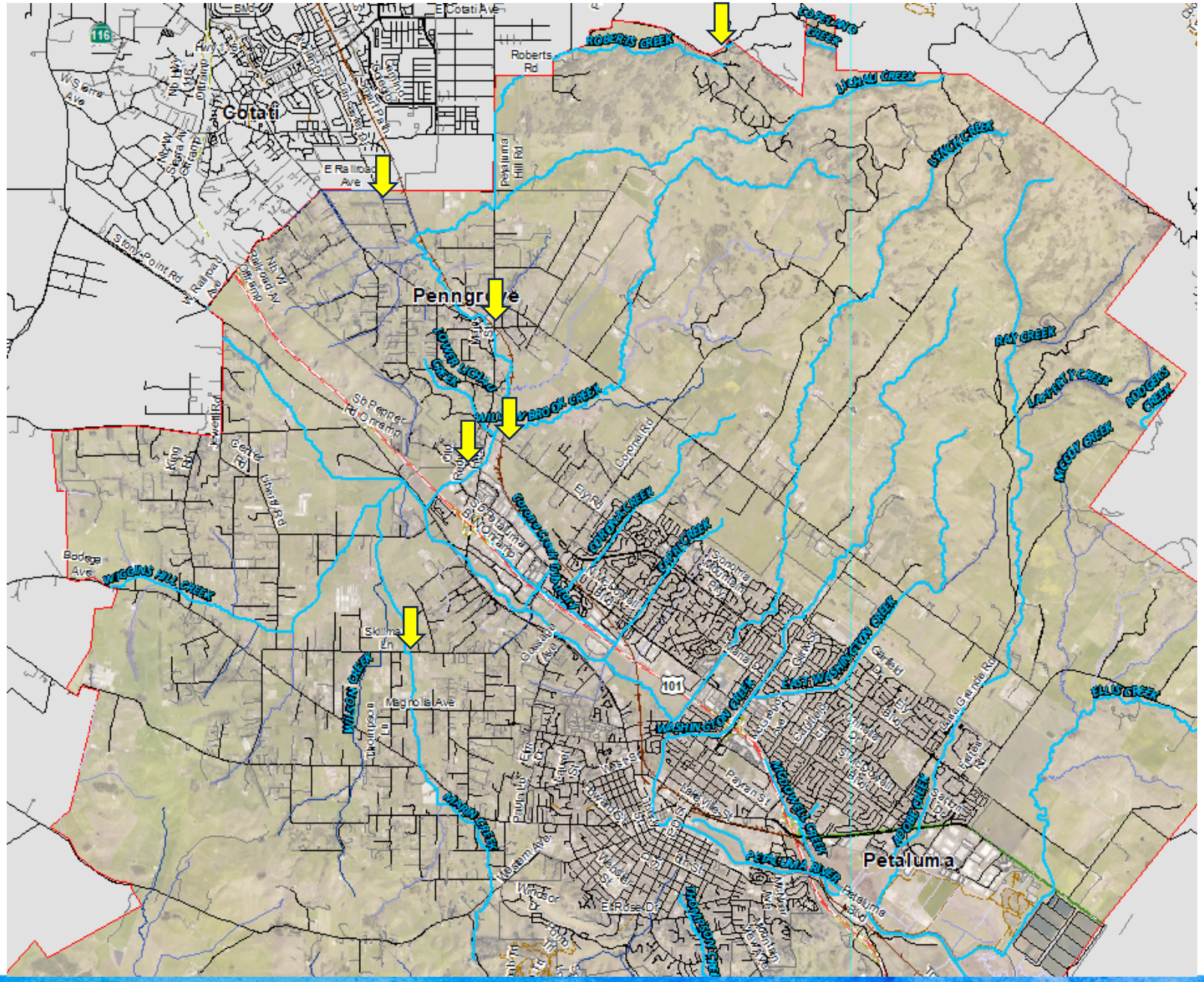
Flooding overview

sonomawater.org

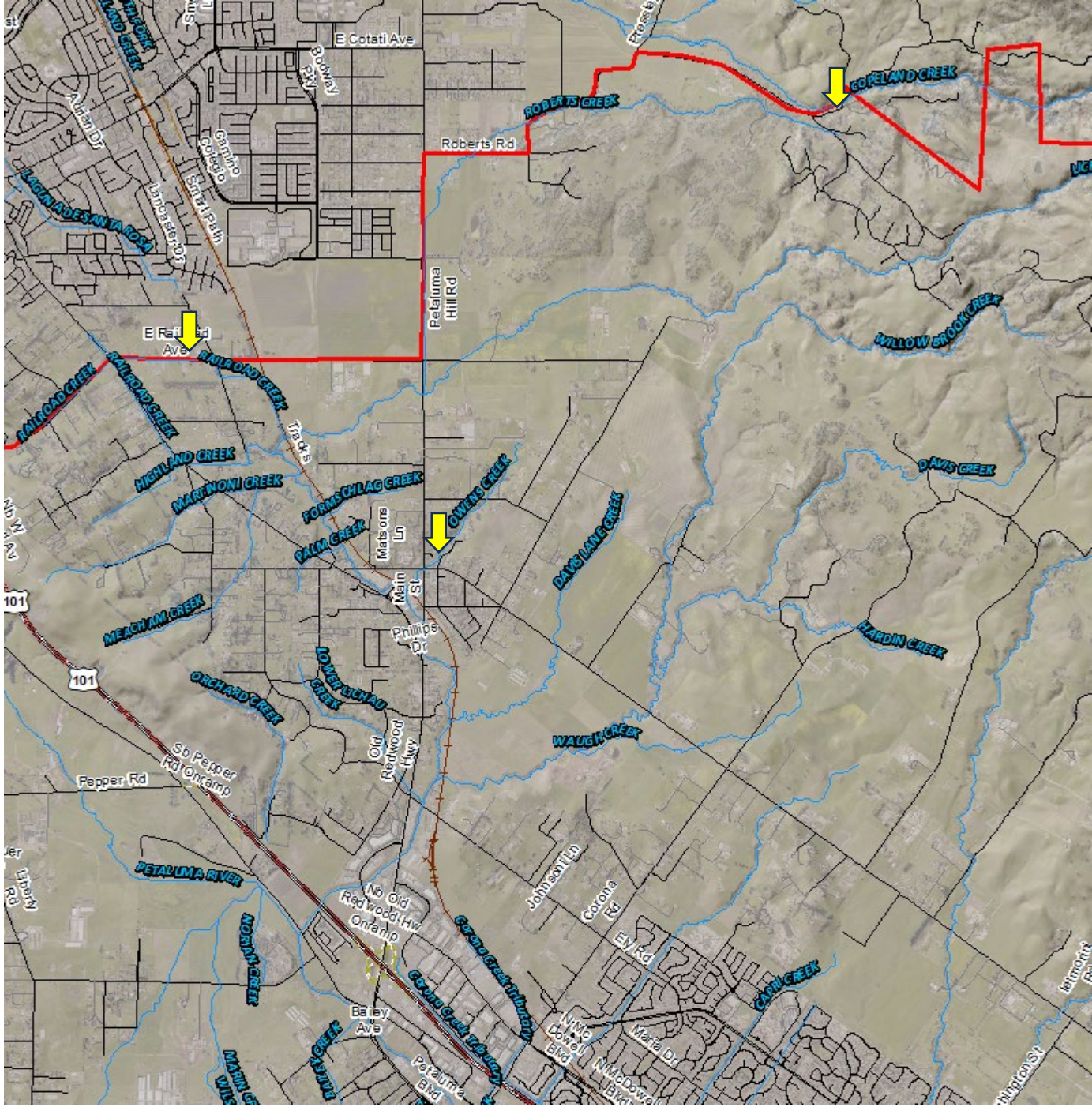
Zone Overview

- In 1956, the Petaluma City Council requested that the Agency investigate the need for the formation of FCZ2A
- An Engineer's Report was released in Nov 1958
- FCZ2A was established in 1959
- Established by Sonoma Water under the Flood Control District Act. Advisory committees were established in three flood protection zones to provide citizen representatives within the zone area to advise on matters related to flood protection. Flood Protection Zone Advisory Committee members meet to discuss stormwater management and flood protection issues, providing recommendations on annual budgets that include flood protection, stream maintenance, and stormwater management expenditures.
- **Powers and Duties:**
  - Citizens representing agricultural, residential, municipal, and commercial interests within this Zone to advise on flood control matters.
- **Membership Composition**
  - Seven members, six appointed by the Second District Director
- **Average Annual Revenue**
  - 2.7 million from Property Taxes
- **Zone Size**
  - 84 Sq. Miles

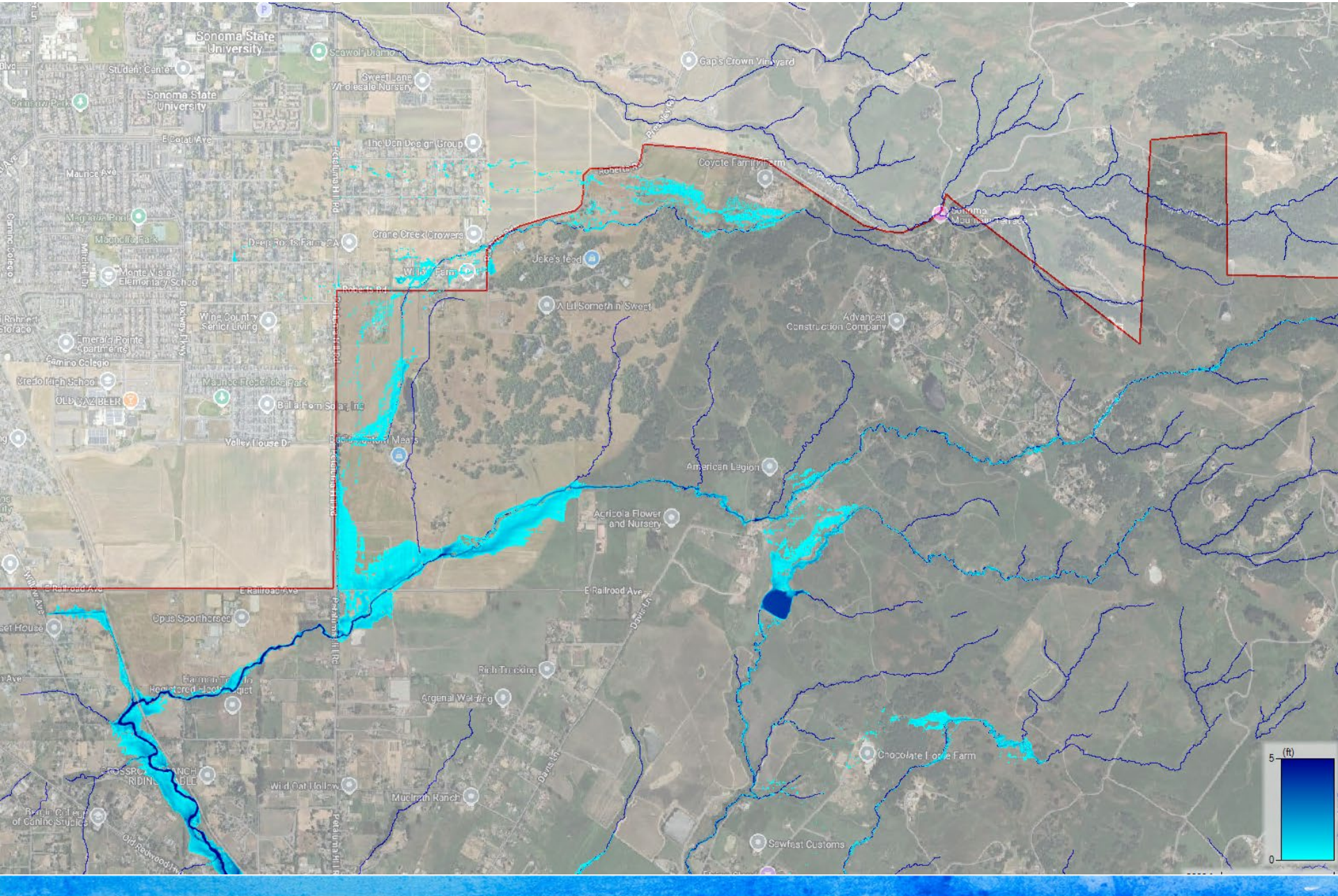
Flood Focus Areas in Unincorporated Areas



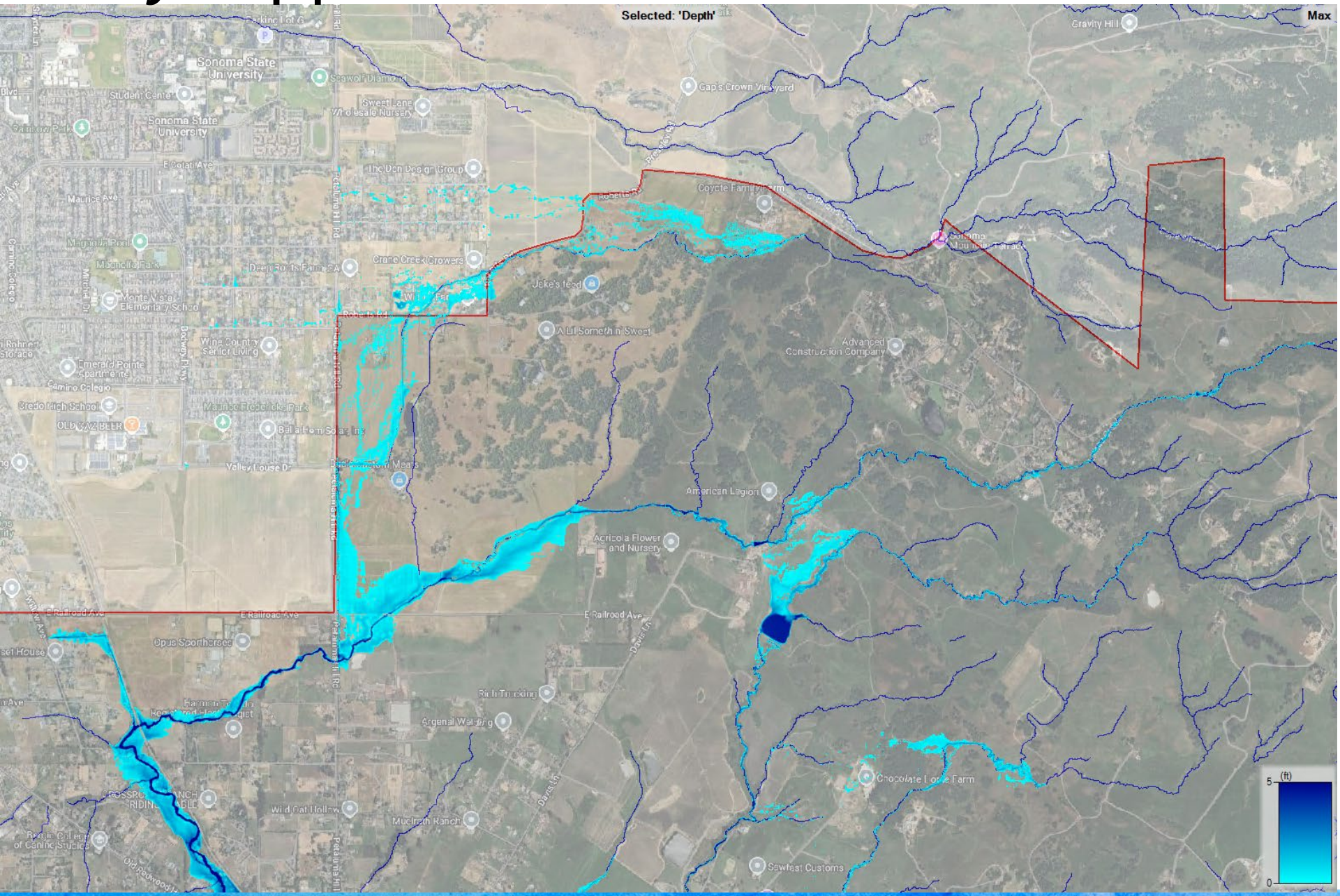
Upper Lichau Creek Watershed



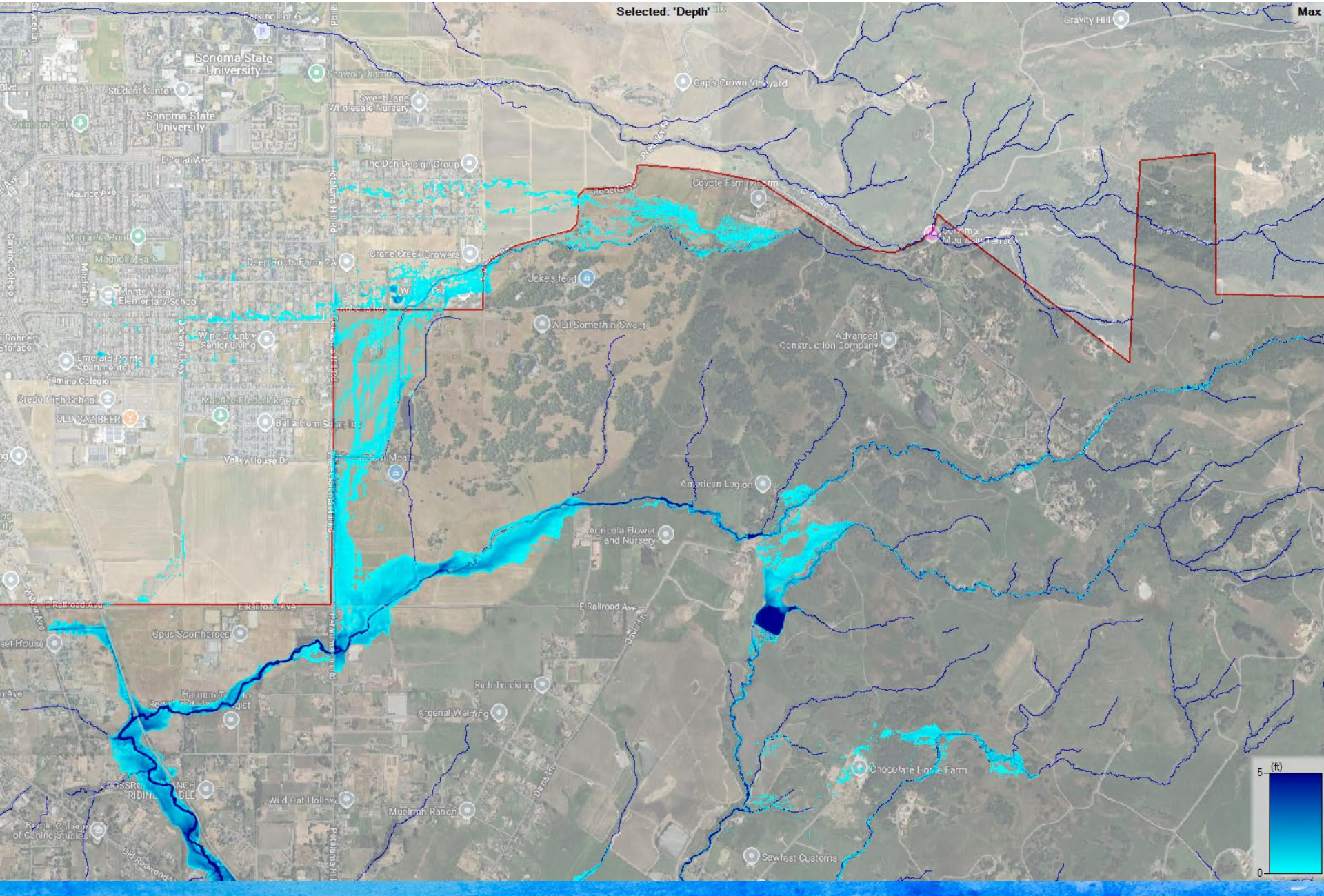
10yr Upper Lichau



25yr Upper Lichau



100yr Upper Lichau



Copeland/Lichau Breakouts

Copeland Creek flowing over Lichau Road

At Break Point

Photo Taken 1/2/06

Copeland/Lichau Breakouts

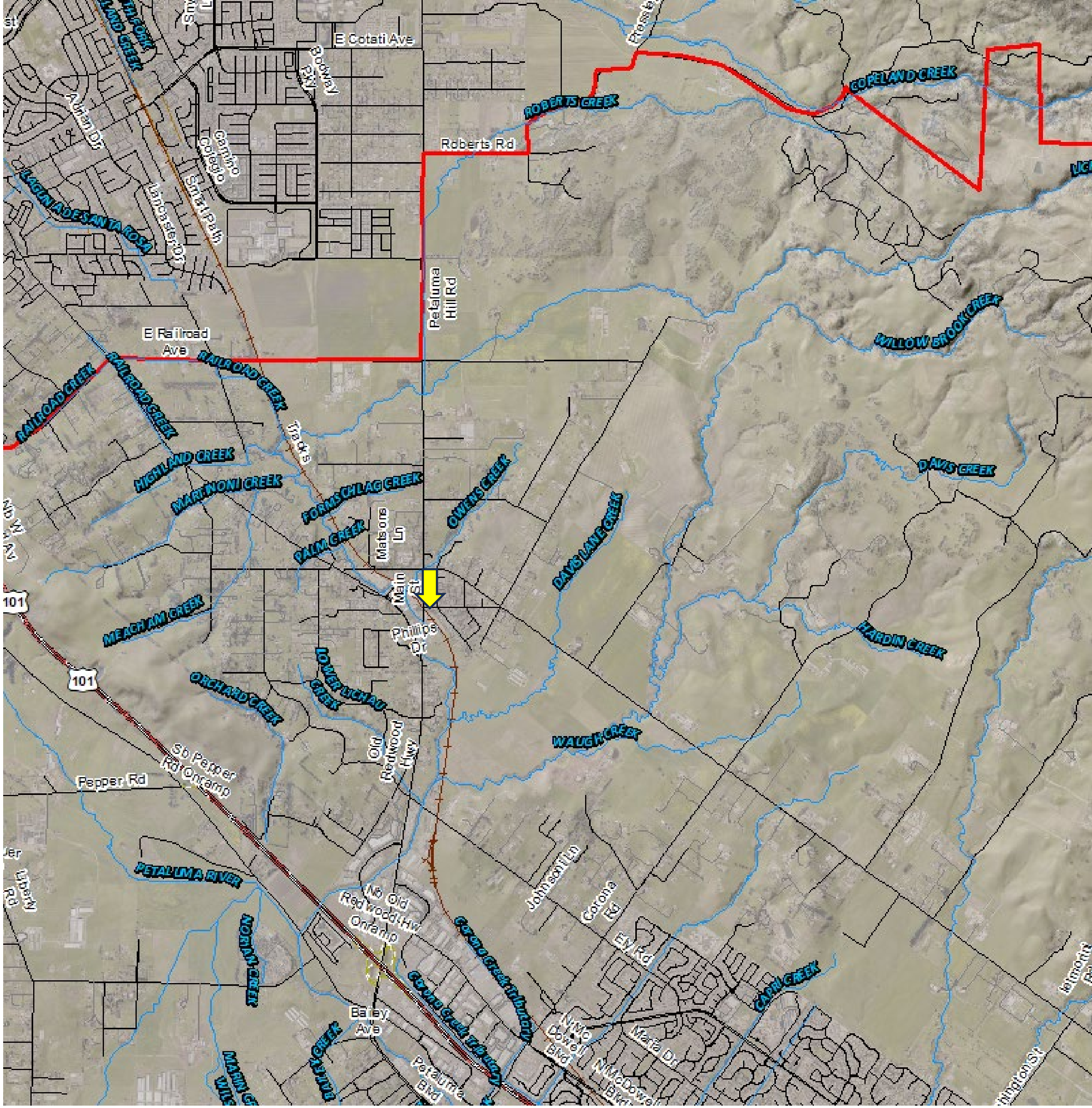
E Railroad Ave, Penngrove

Penngrove

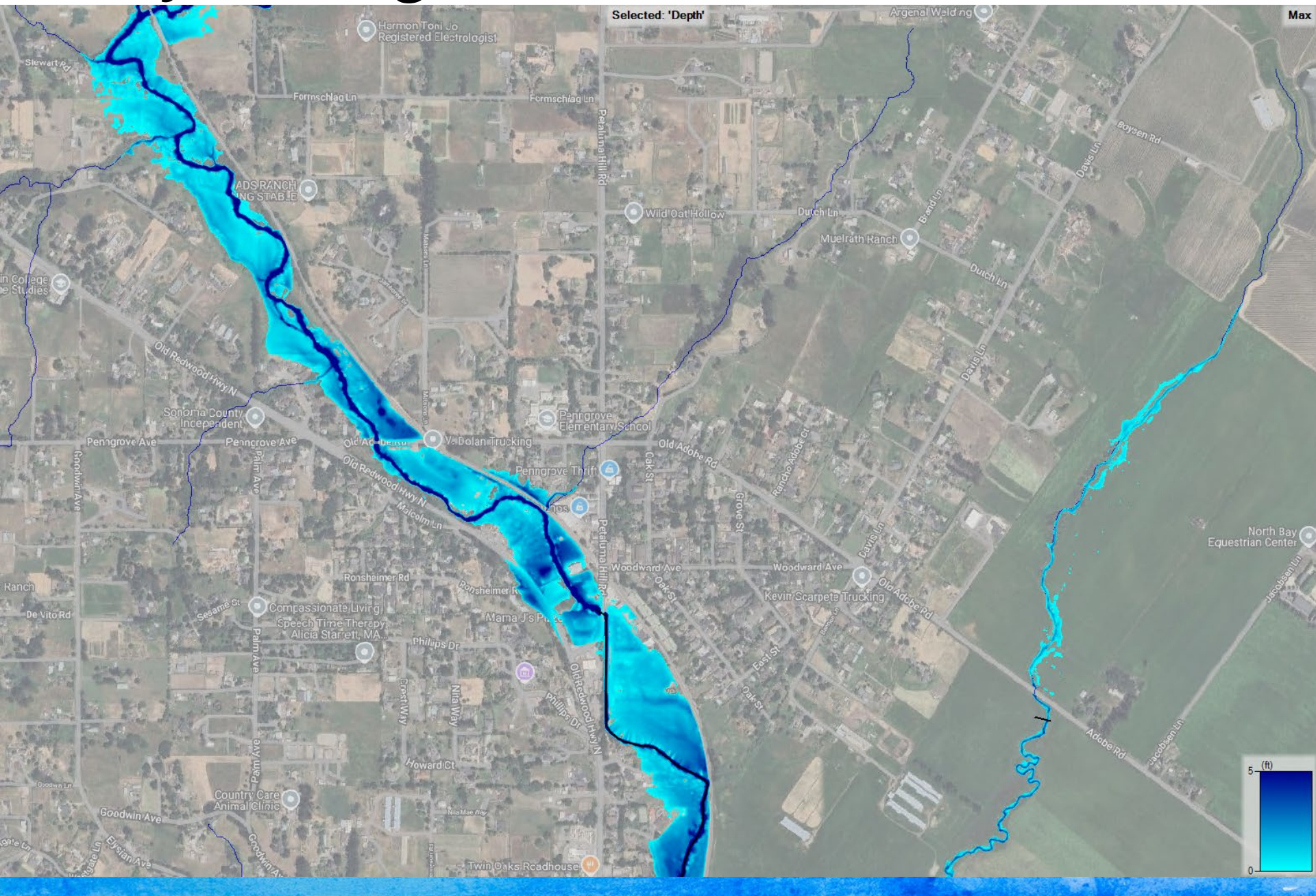
Railroad Ave looking west

Willow Ave near Railroad Ave

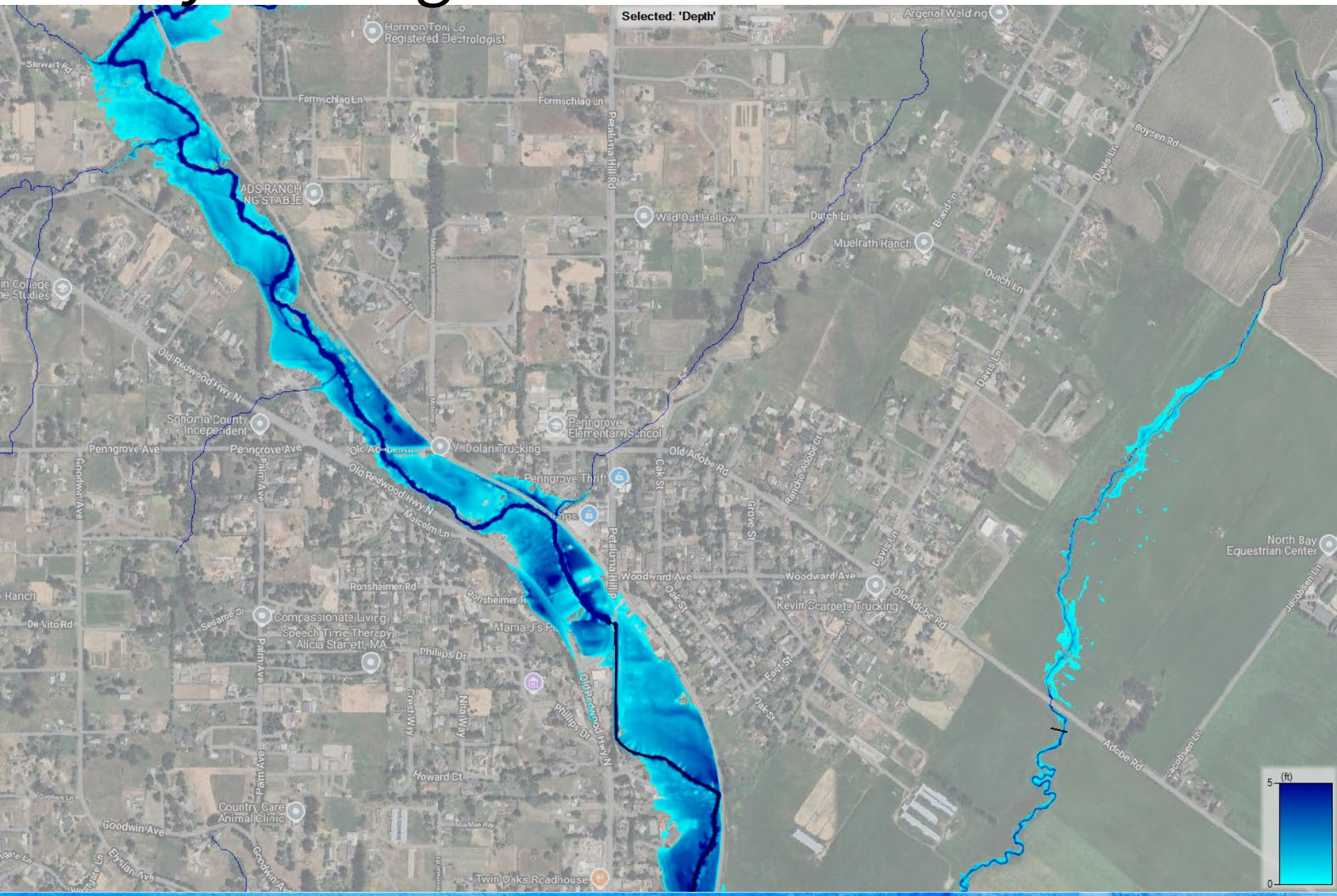
Downtown Penngrove Area



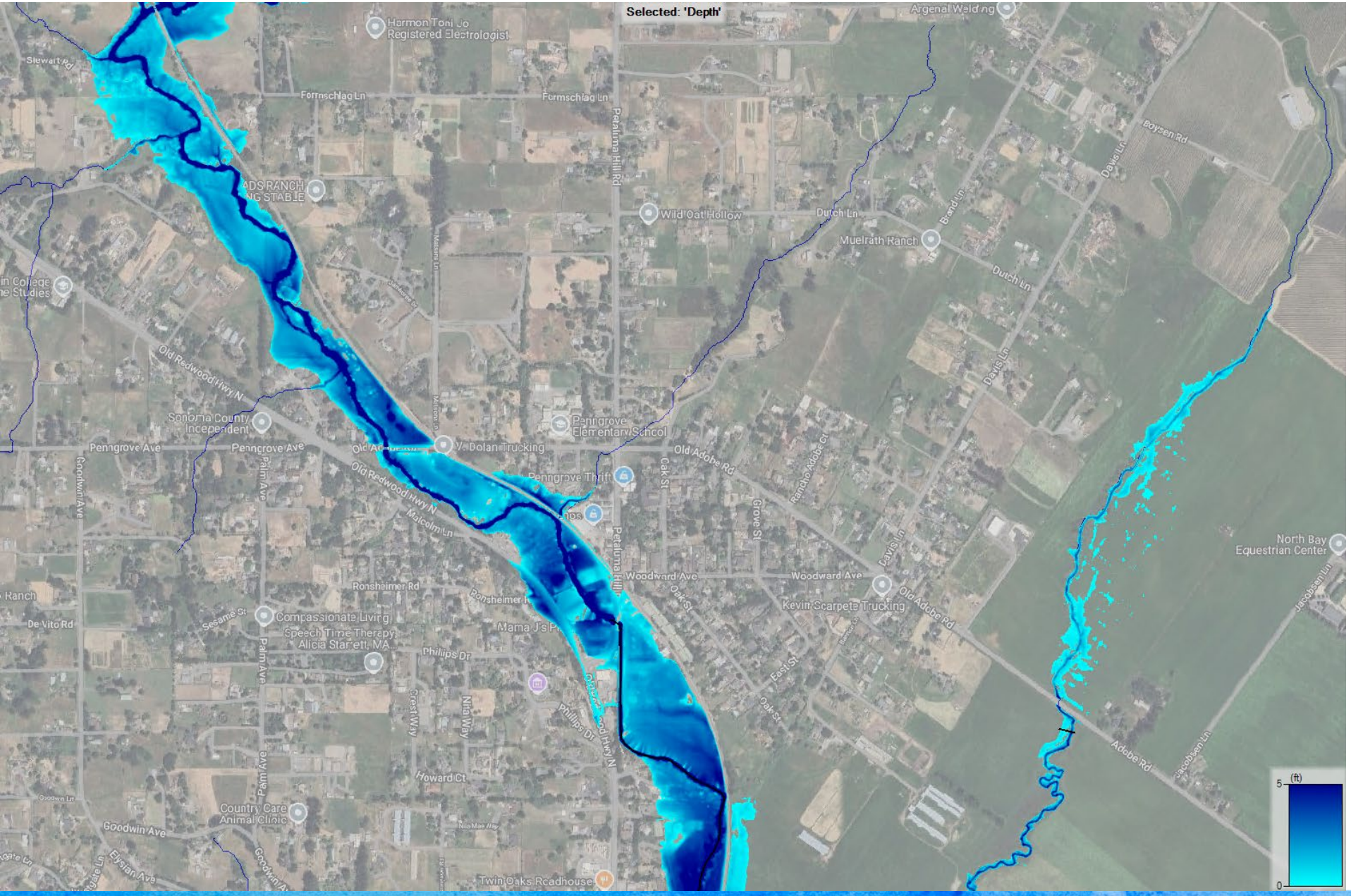
10yr Penngrove Area



25yr Penngrove Area



100yr Penngrove Area



Upper Lichau at Adobe Rd

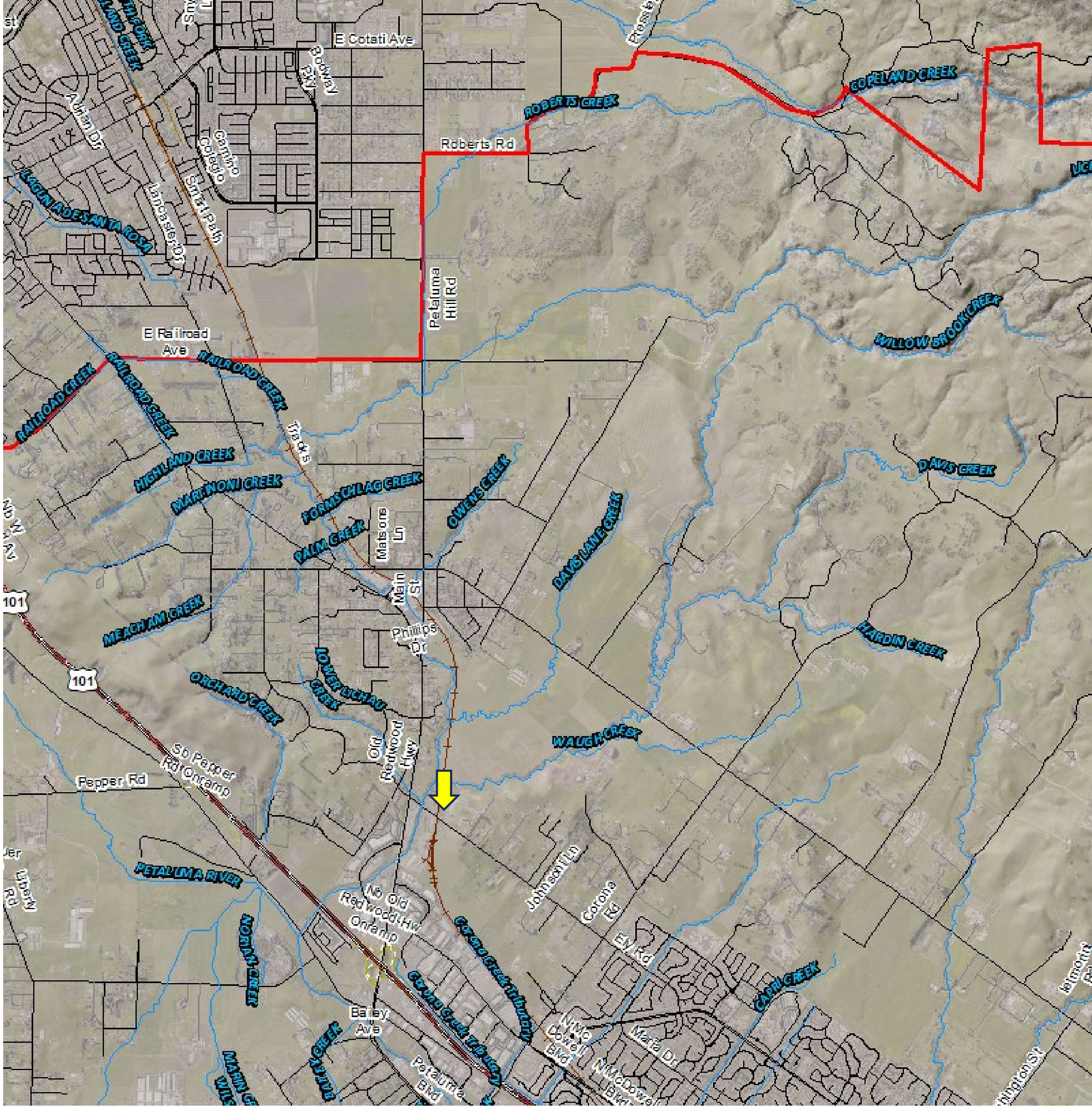
Lichau Creek, upstream Old Adobe Road bridge, private residence

Lichau Creek, upstream Old Adobe Road bridge, private residence

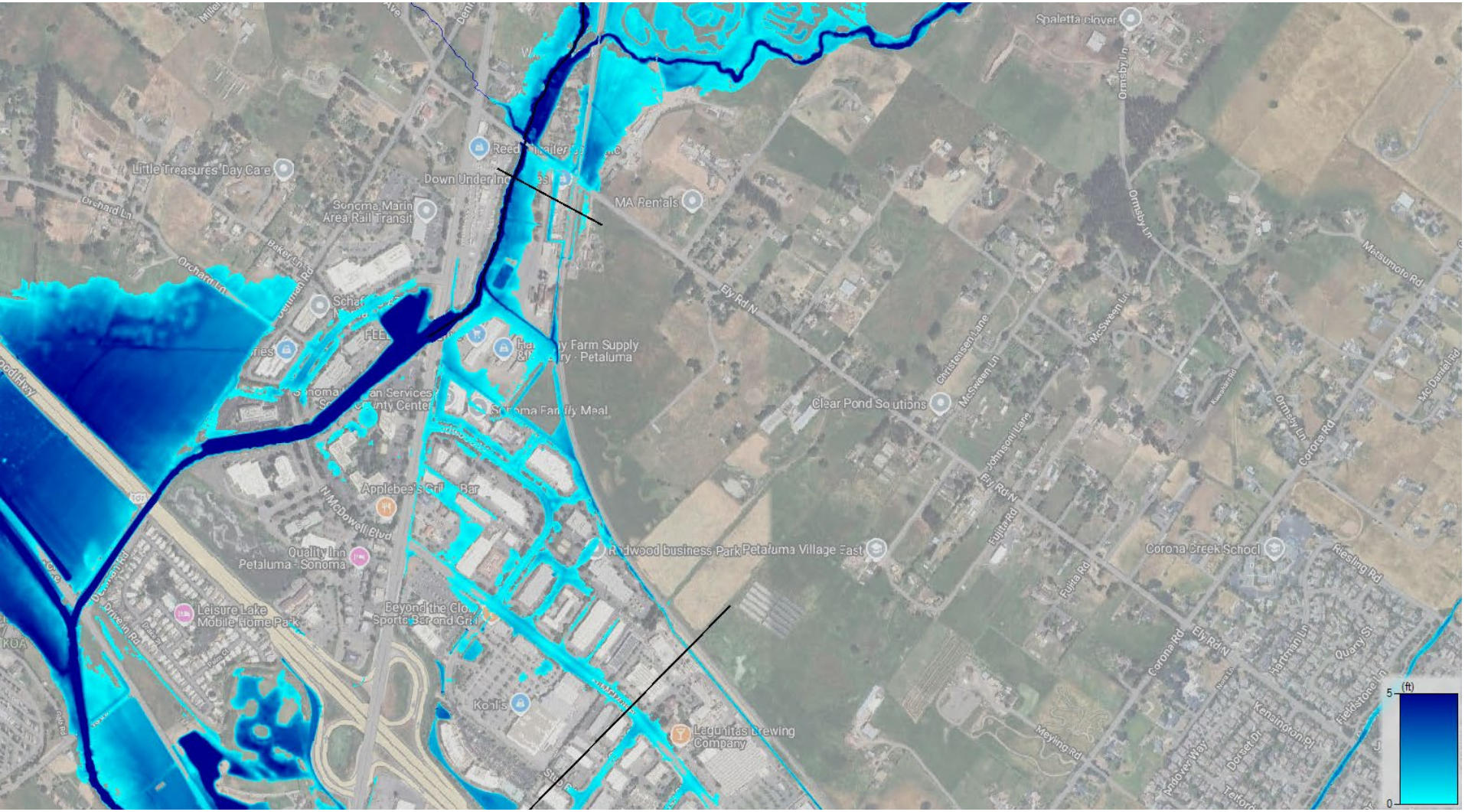
Penngrove

Lichau Creek, Penngrove Social
Fireman Park

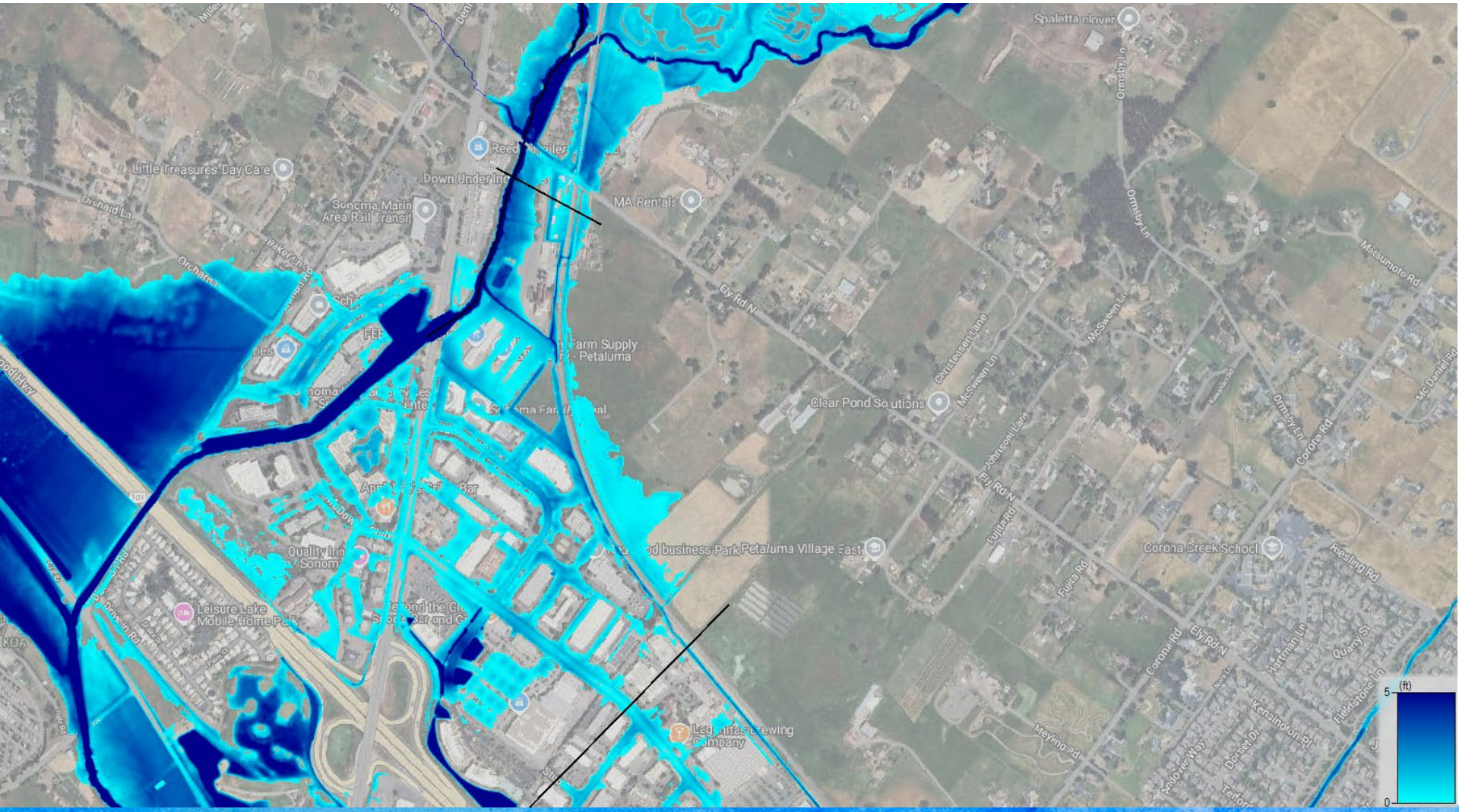
Willow Brook at Ely Rd



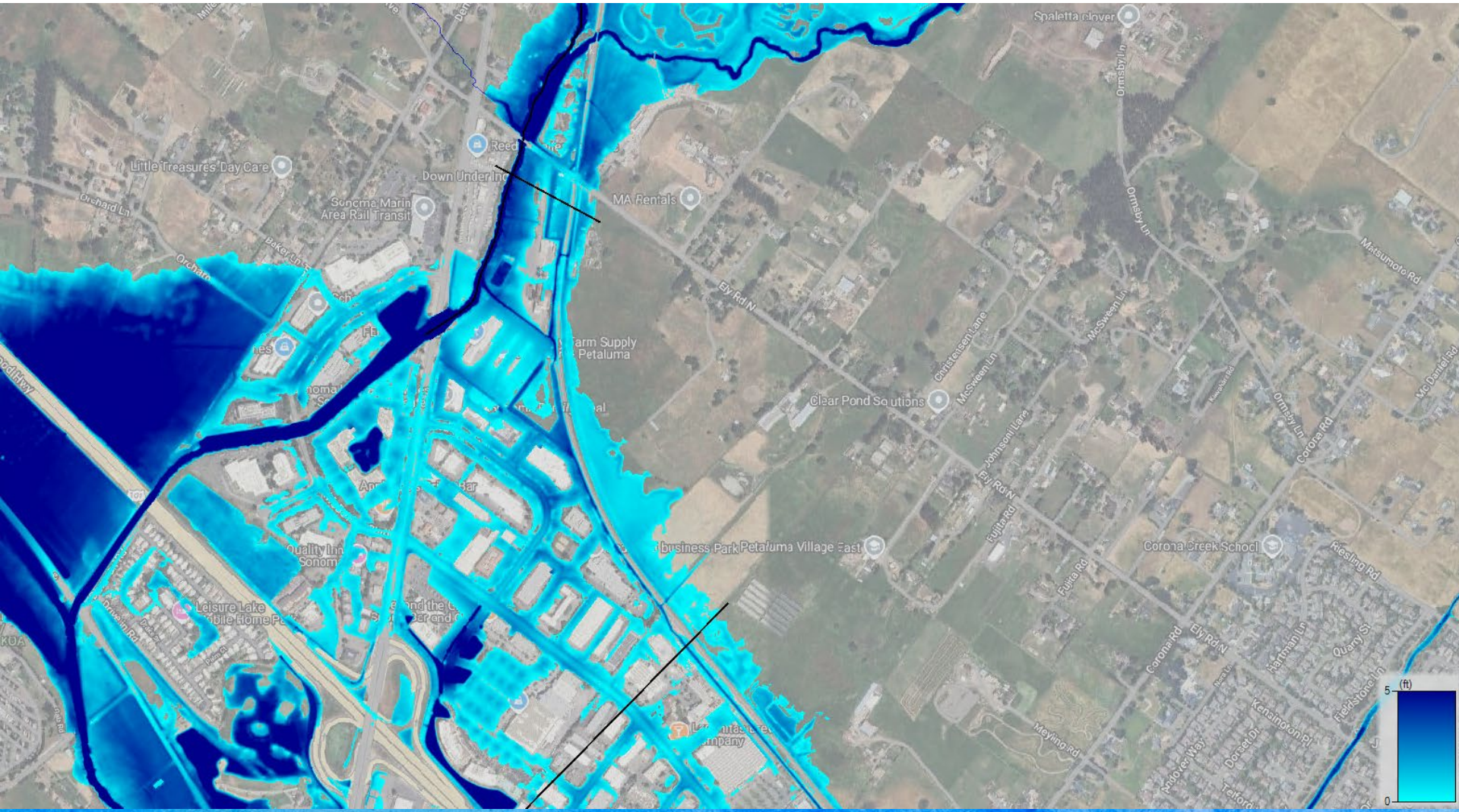
10yr Petaluma North



25yr Petaluma North



100yr Petaluma North

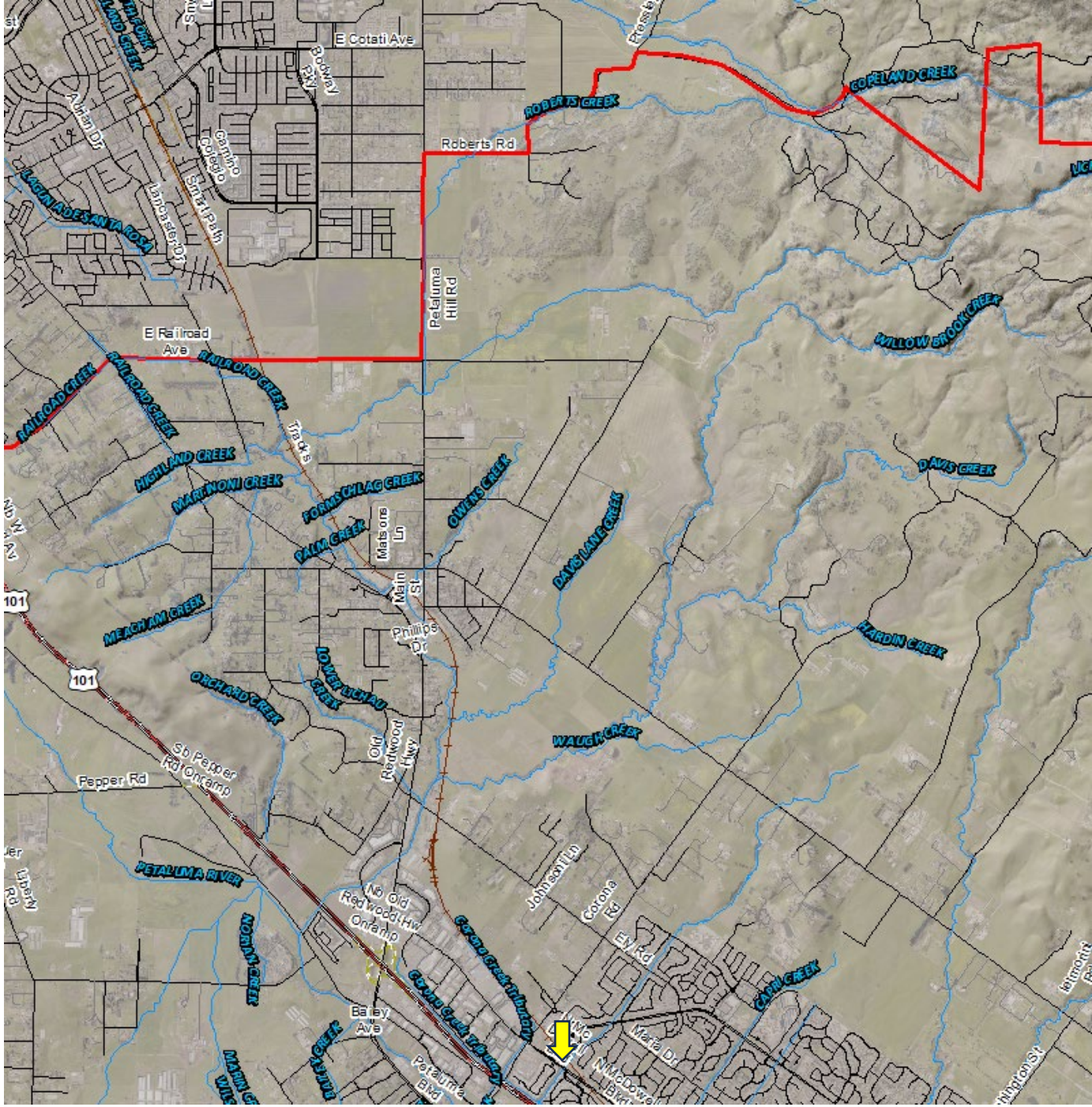


Penngrove Lift Station/ Ely Rd

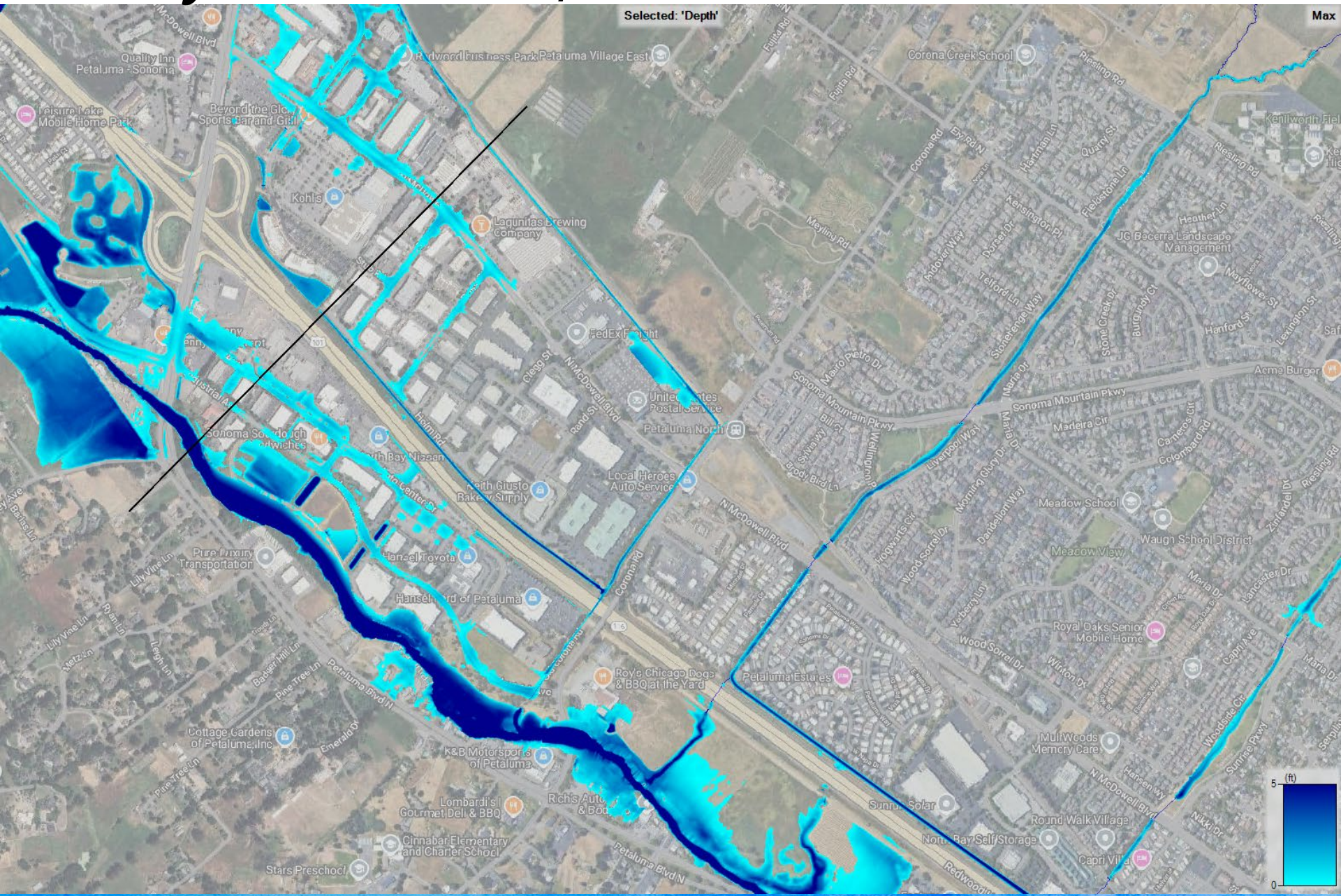
Penngrove Lift Station/ Ely Rd

Willow Brook Creek Retention Basin

McDowell Blvd At Corona Rd



10yr McDowell/Corona



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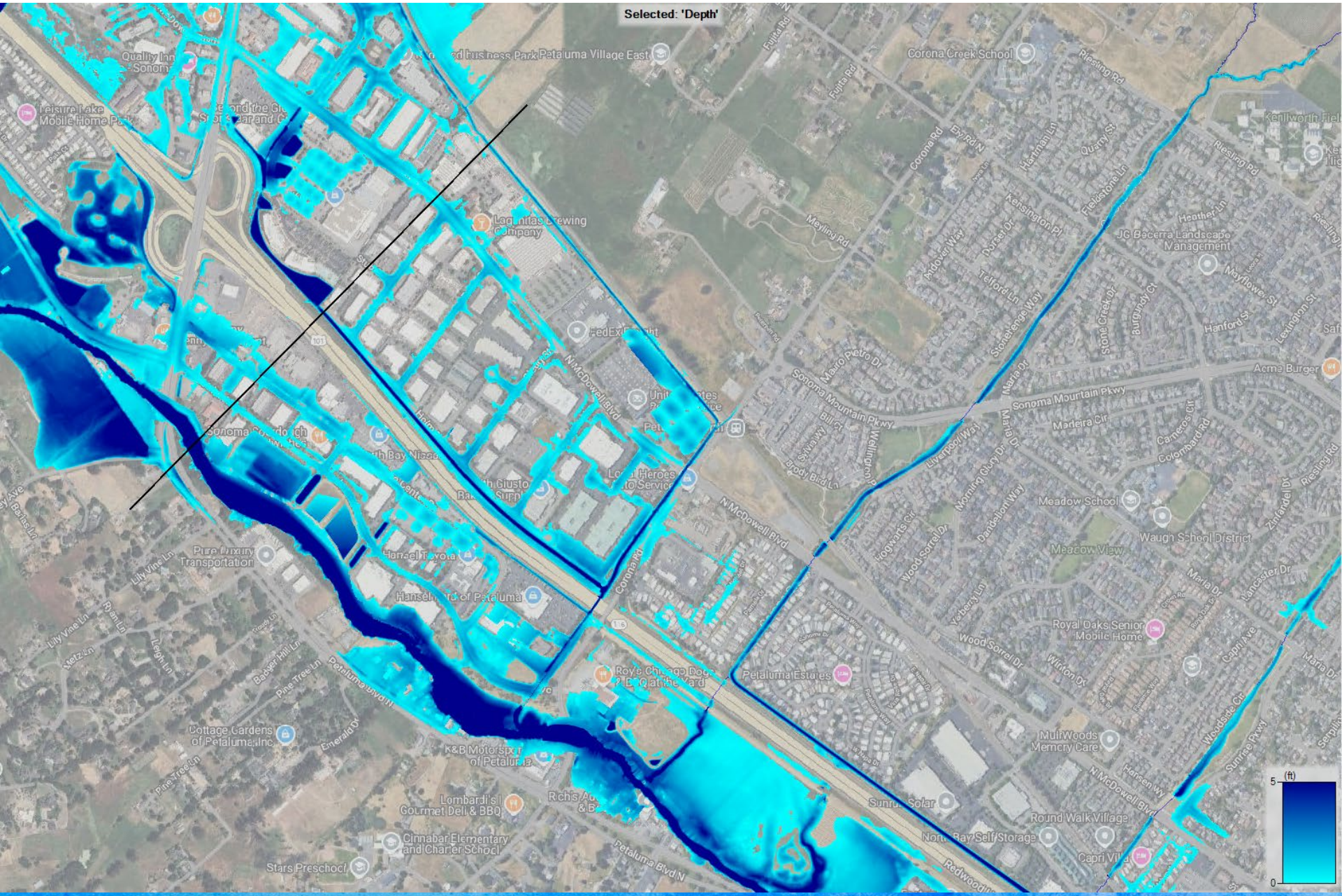
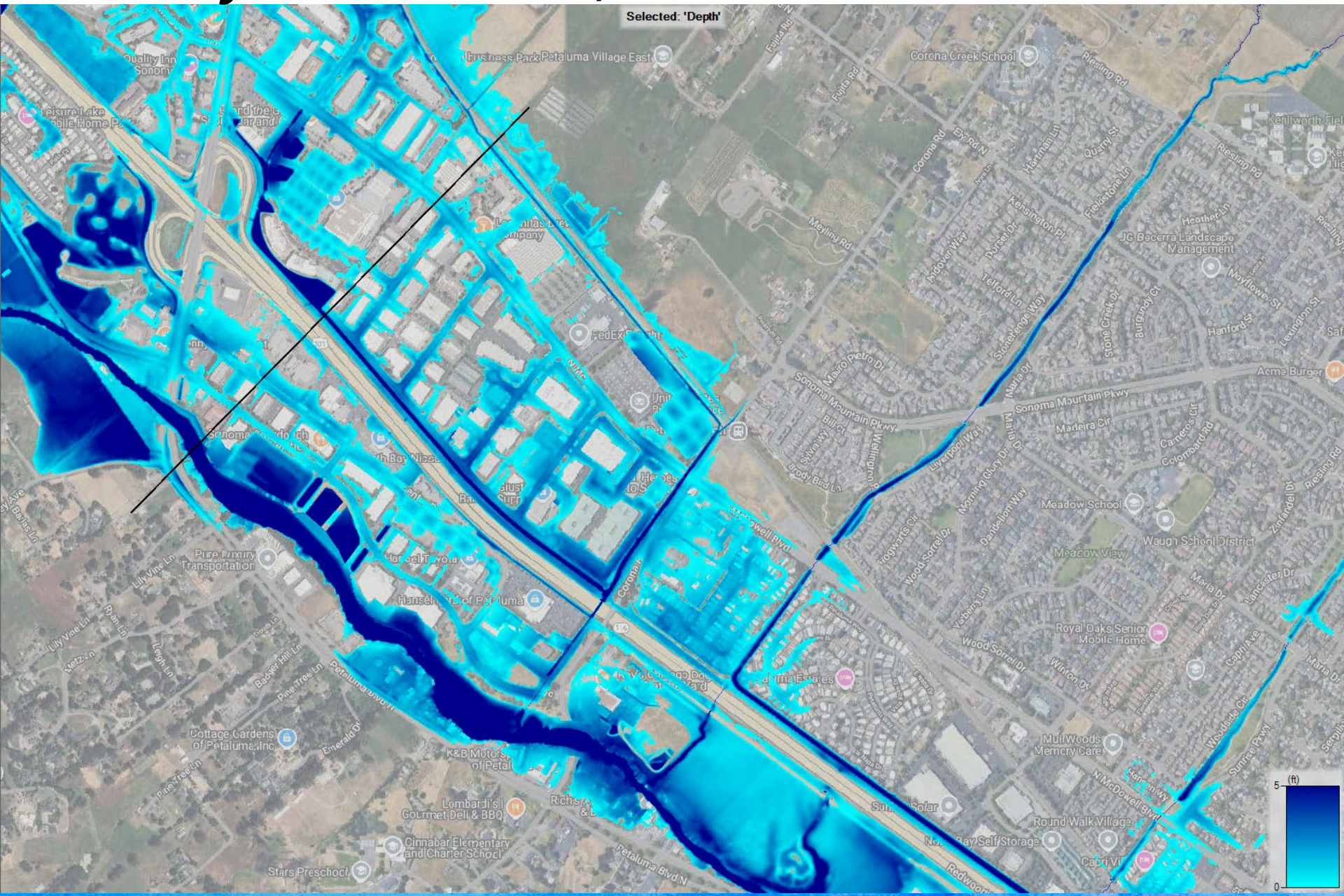


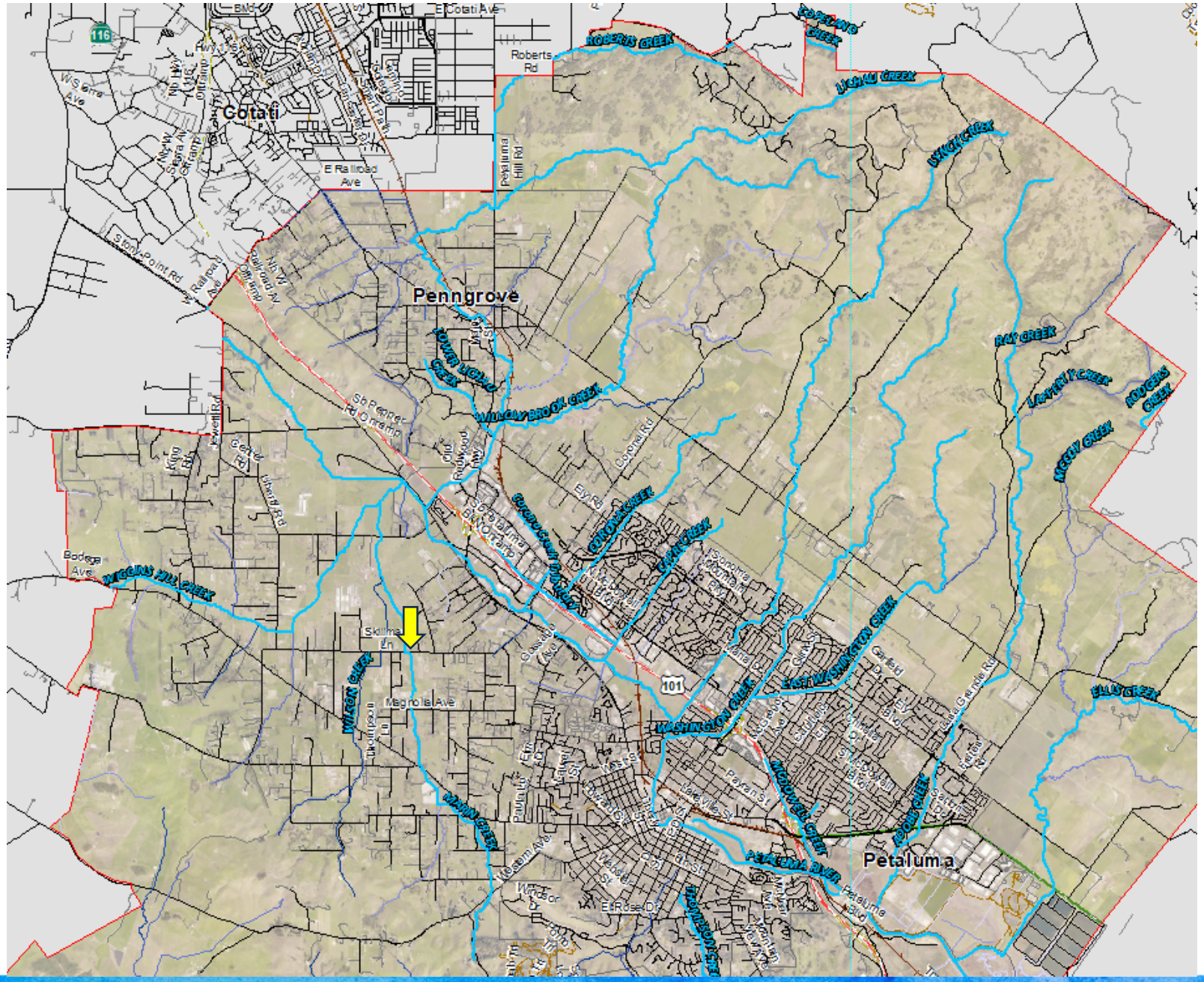
100yr McDowell/Corona



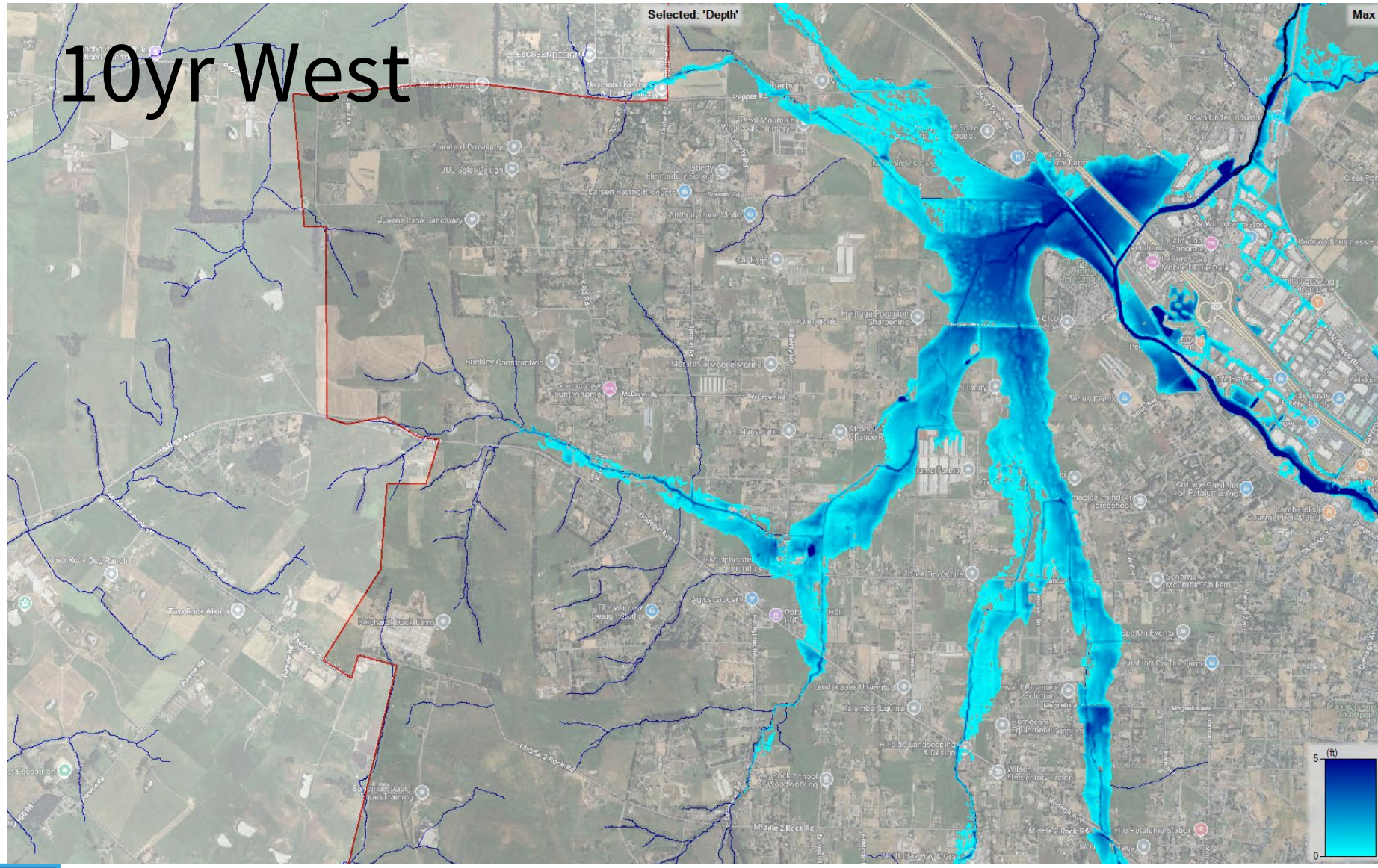
McDowell Blvd/Corona Rd

McDowell Blvd/Corona Rd

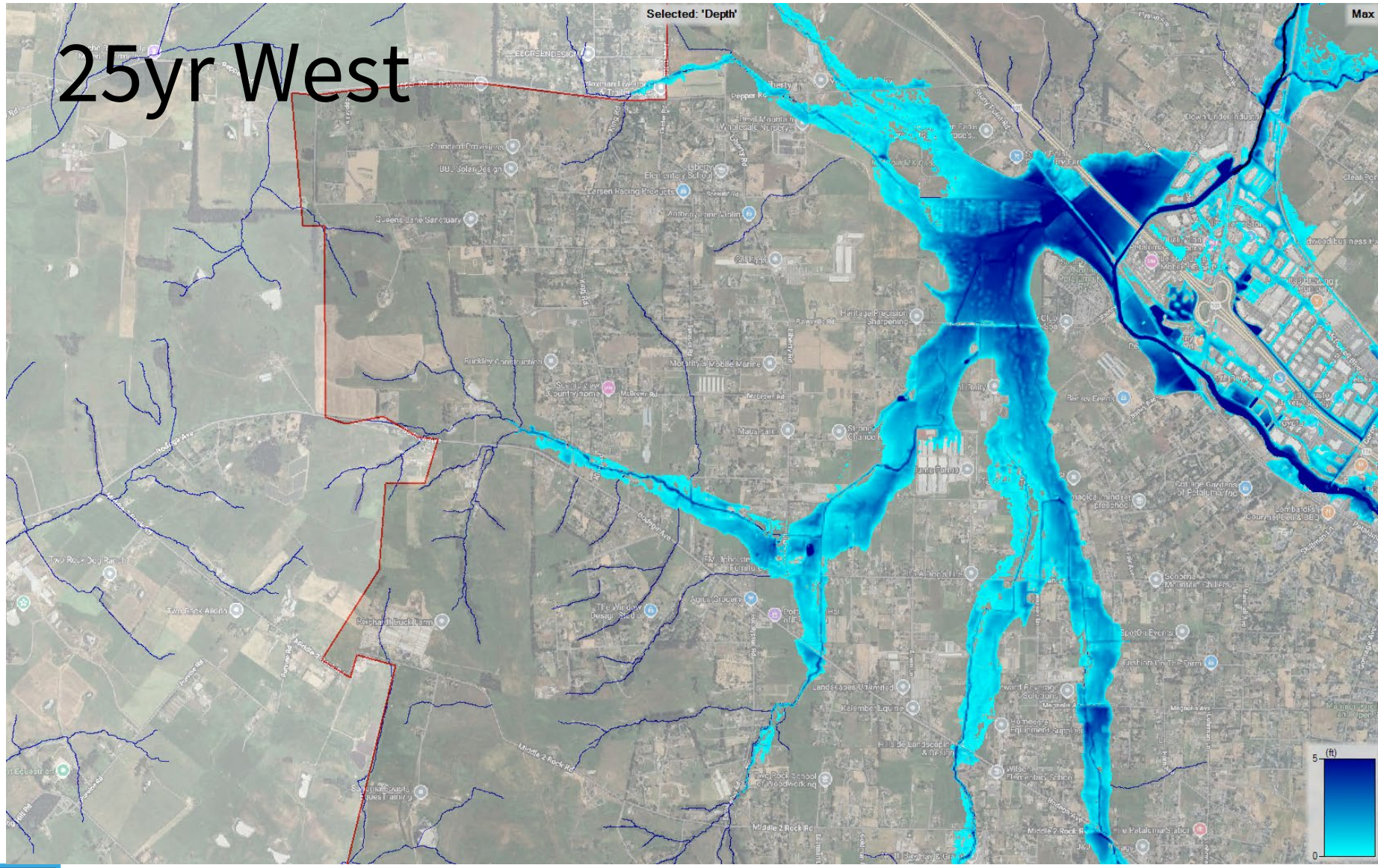
West Basin: Marin Creek



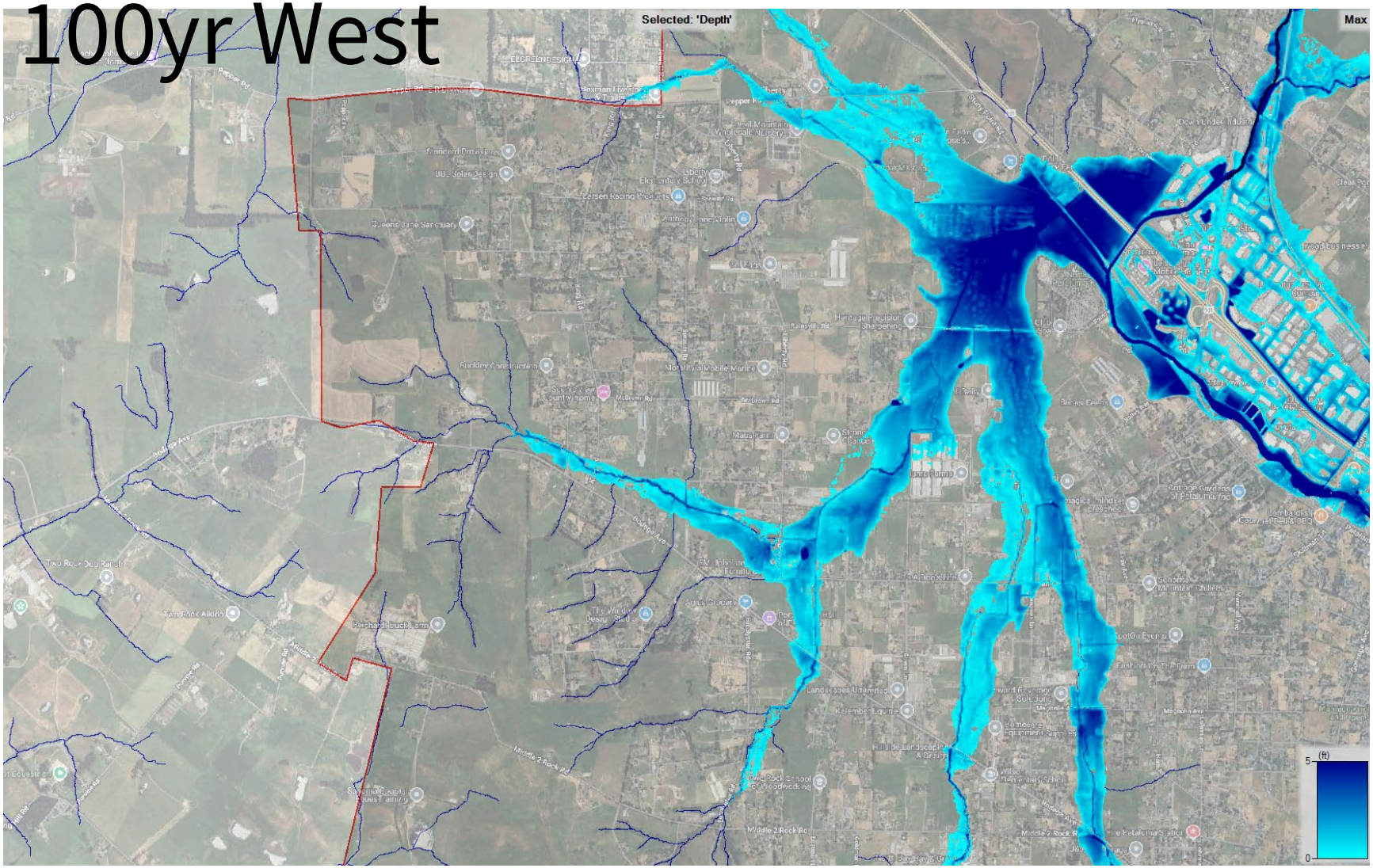
10yr West



25yr West



100yr West



Flooding photo from Jan 2023

Marin Creek

Magnolia Avenue

Skillman Lane

Petaluma River Watershed History of Flooding

- Flooding concerns date back to mid 19th century
- Several measures taken since formation of zone
  - Projects were constructed
  - Standards were adopted for development
  - Floodplain zoning was instituted
- Problems remained as evidenced by Jan 1982 and Feb 1986 floods

"The season of 1849-50 was extremely wet…

…the whole of Santa Rosa and Petaluma plains were flooded."

"In 1852-53 there were very heavy rains, and the whole of Petaluma and Santa Rosa valleys were under water…"

(Thompson's Historical Atlas, 1877)

Petaluma River Watershed Master Drainage Plan

- Developed in March 1986 at the request of City of Petaluma and recommended by Zone 2A Advisory Committee
- Updated in June 2003

Master Drainage Plan

- 3 primary areas identified as focus areas for improvements

agricultural or other low-density use where flood damage is minimal. The following two reaches along the river, and another reach along Willow Brook, experience flooding during the design storm that causes serious damage to improved properties and structures:

1. The **Payran Reach** begins downstream at the turning basin and ends upstream at the confluence with Lynch Creek. Land use is a combination of industrial, commercial and residential. Flooding along this reach occurs within the area shown on Figure 2B and reaches depths of 5 feet or more, with the greatest depth being in the Payran Street area. Velocities of the overbank flow are estimated to be relatively slow (one foot per second or less) except in public roadways, which are parallel to the river and public road crossings. Army Corps of Engineers estimations of peak flow rates at Payran Street in the Petaluma River for the 100-year design storm significantly exceed Agency estimations. As of 2003, the Payran Reach Project is nearly complete. Flooding will be greatly reduced in this region.

2. The **Denman Reach** begins downstream at Corona Road and ends upstream at the confluence of Liberty Creek and Willow Brook. Land use in this area is a combination of commercial, agricultural and mobile homes. Flooding along this reach due to inadequate capacity within the Petaluma River occurs within the area shown on Figure 2B and is estimated to reach depths of 5 feet or more. Velocities of the overbank flow are generally two feet per second or less except at public road crossings.

3 The **Willow Brook Reach** begins at its junction with the river and Liberty Creek just west of Stony Point Road and extends upstream through Highway 101 and Old Redwood Highway North to Ely Road. Land use is mostly commercial and industrial with some residential such as the Leisure Lake Mobile Home Park. This entire reach is not adequate to carry the 100-year flood. The floodwater that escapes from Willow Brook flows into the adjacent industrial

Leisure Lake Area, 1986 – Doug Brown Argus-Courier

Master Drainage Plan

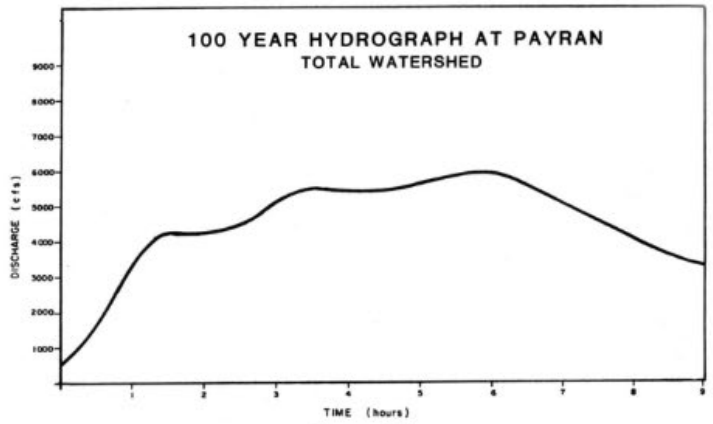


Figure 3D

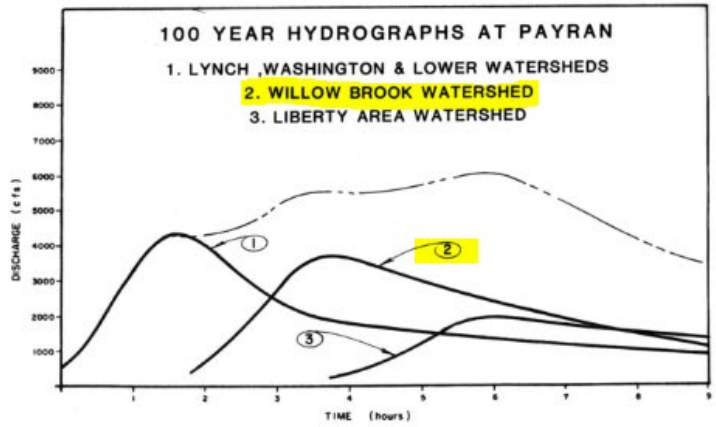
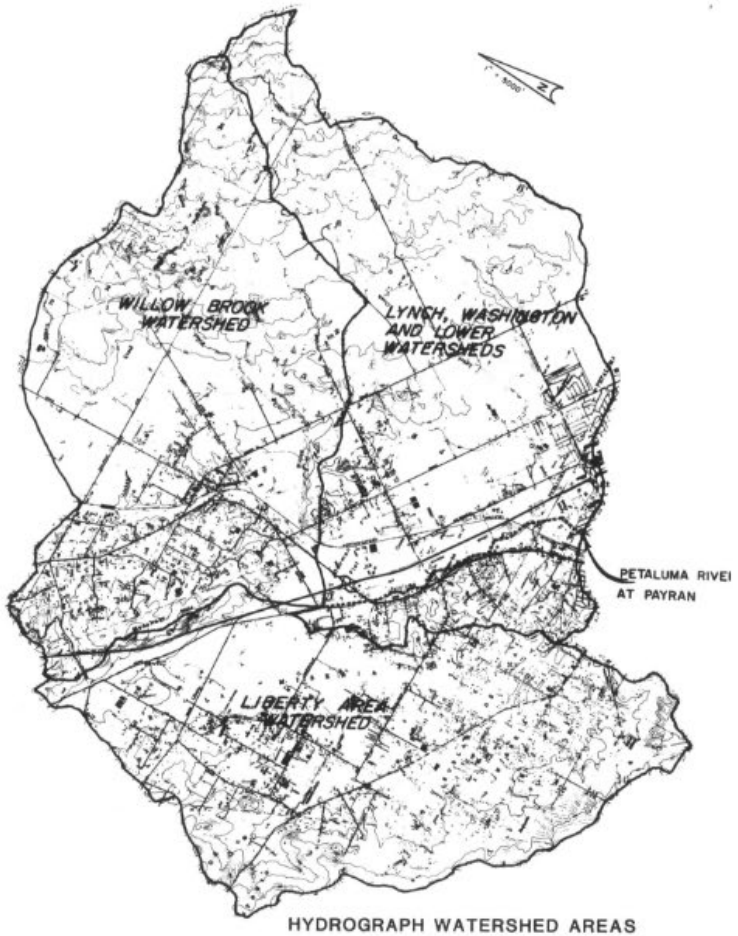


Figure 3E

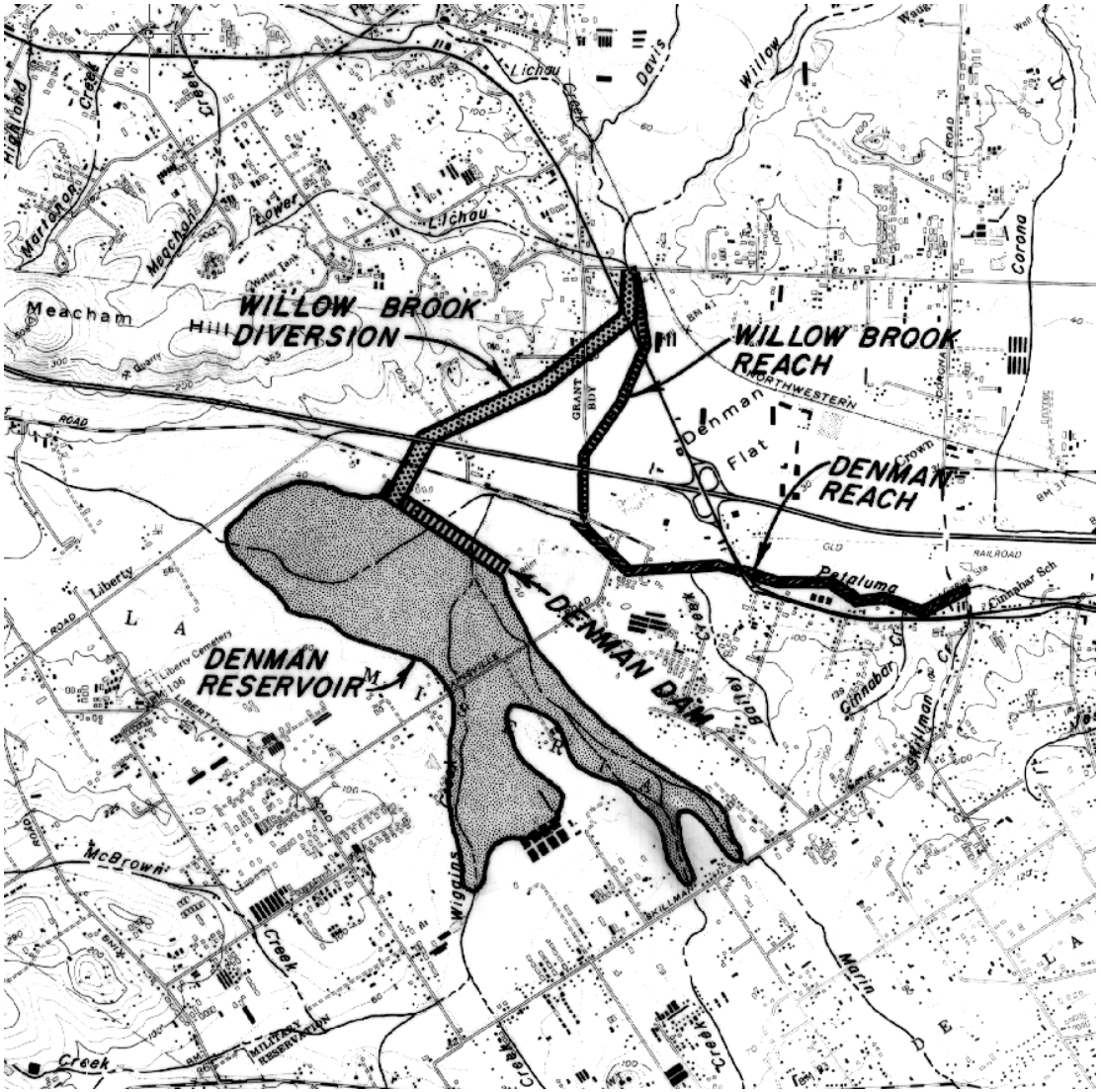


HYDROGRAPH WATERSHED AREAS

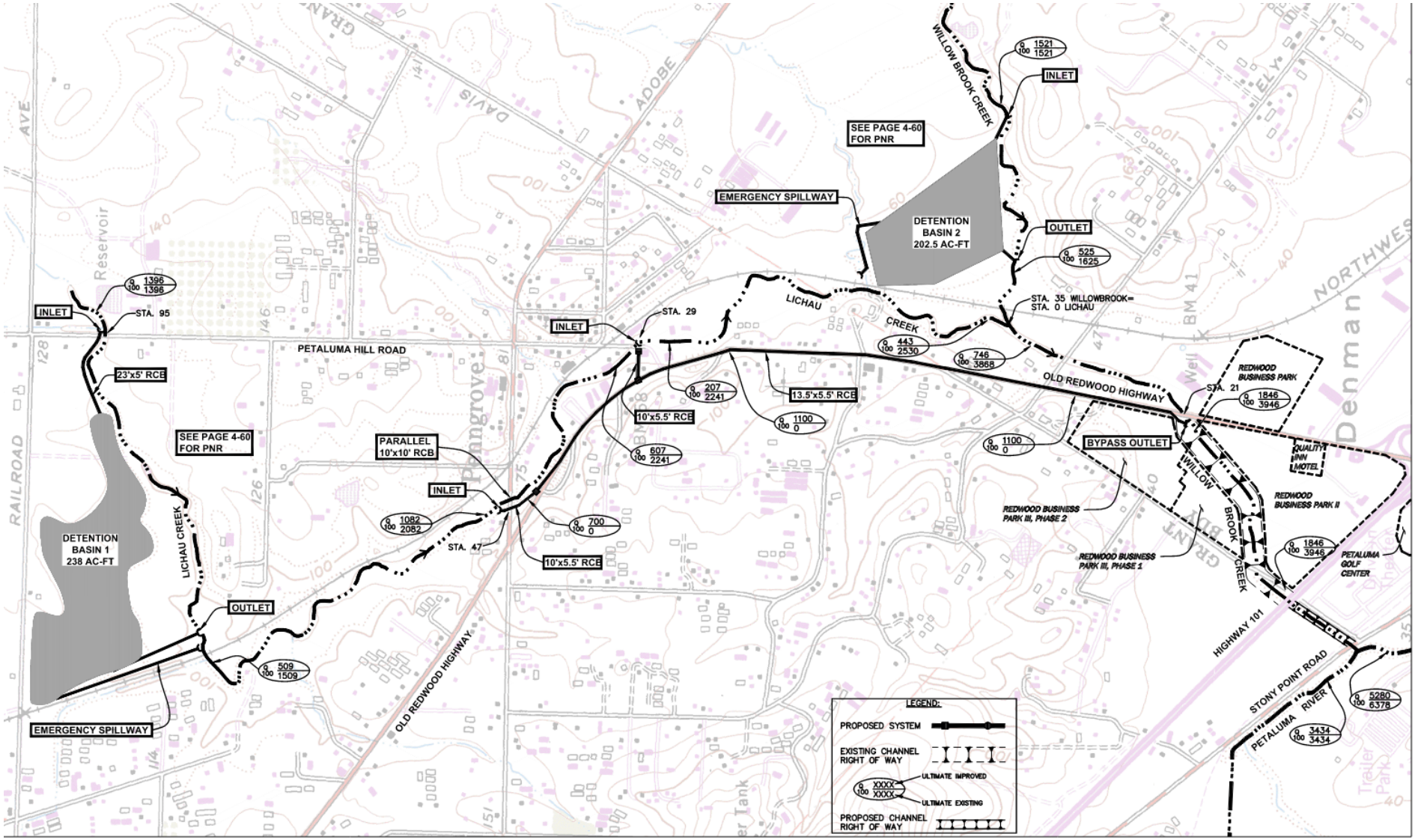
Figure 3F

Flood Issues Identified Decades Ago

- In 1986, cost of Denman Dam and Willow Brook Diversion was $9.6M
- No longer considered feasible by 2003 due to environmental concerns/impacts



Flood Issues Identified Decades Ago



Historic Flood Projects

- Nearly 30 projects between 1965 and 2002 are highlighted in the June 2003 Update to the Master Drainage Plan
- Since 2002, very little new construction

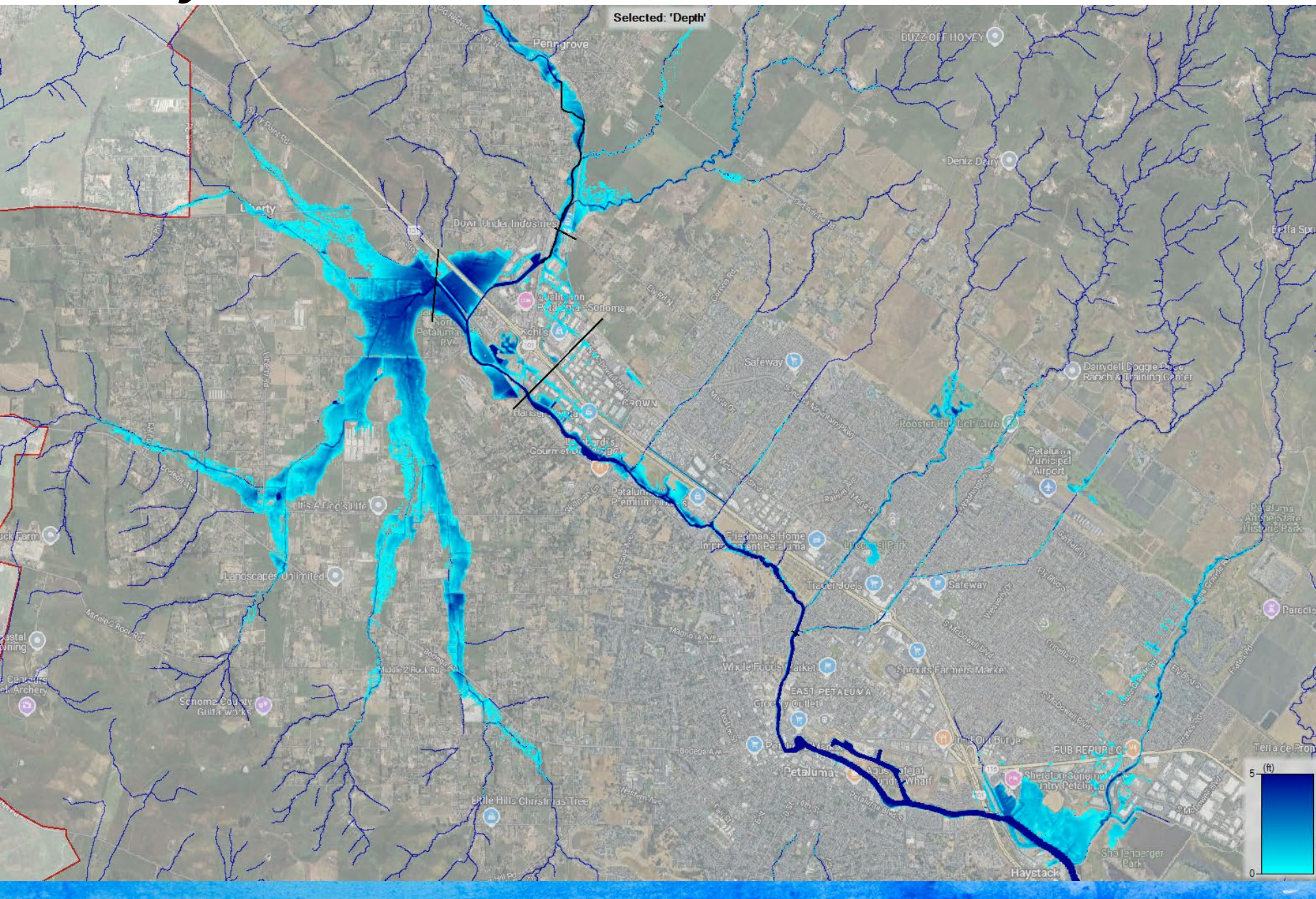
Project Name	Year Completed	Contract Cost
McDowell Creek Drainage Project	1965	$97,666.20
Fending of Washington Creek	1969	5,244.00
Western Avenue Conduit	1969	160,890.00
Washington Creek Channel Improvements	1970	68,605.75
Shasta Avenue Conduit	1971	32,694.50
Capri Creek Channel Improvements	1972	222,430.95
Cherry-Magnolia Conduit	1972	280,448.37
Washington/Lynch Creek Bypass	1977	357,525.40
Thompson/Kelly Creek Bypass	1981	873,973.62
Lakeville Street Conduit	1982	295,345.85
“H” Street Conduit	1983	283,035.75
North Corona Creek Conduit	1983	339,099.82
Sunnyslope Avenue Conduit	1984	140,098.27
Magnolia Avenue Conduit	1984	449,167.00
Mountain View Conduit	1984	88,079.30
Wilson/Lakeville Street Project	1985	$1,315,000
West Street Conduit	1991	$169,000
Wilson/Lakeville Street Project – Phase 2	1991	$137,000
Laurel Street Conduit	1992	$175,000
Wilson/Lakeville Street Project – Phase 3	1994	$53,000
Mt. View Avenue Conduit – Phase 2	1995	$524,000
‘B’ Street/El Rose Drive Conduits	1995	$330,000
Petaluma River Channel Improvements – Payran Street Bridge	1997	$1,678,000
Petaluma River Channel Improvements – “U” Shaped Channel	1998	$1,320,000
Skillman Lane Conduit – Phase 1	1999	$237,000
Lindberg Lane Conduit	1999	$75,000
Madison Street/Vallejo Street Conduits and Pump Station	2000	$722,000
Petaluma River Channel Improvements – Trapezoid Shaped Channel	2001	$3,000,000
‘C’ Street Conduit	2002	$430,000
		$13,859,304.78

Next Presentation

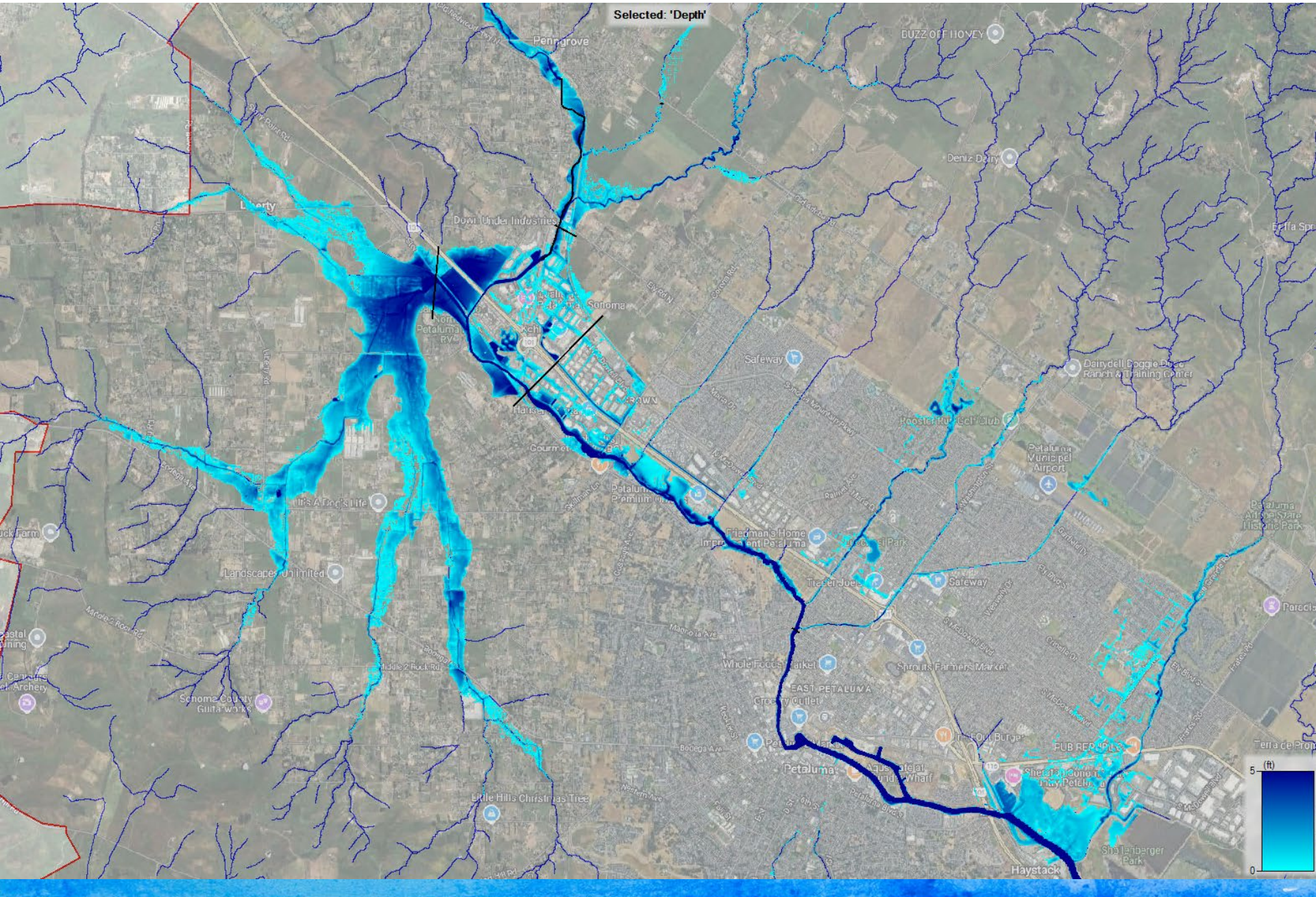
- Overview of recent and ongoing studies
- Stream Maintenance Program background
- Dive into more recent modeling and feasibility studies

Questions?

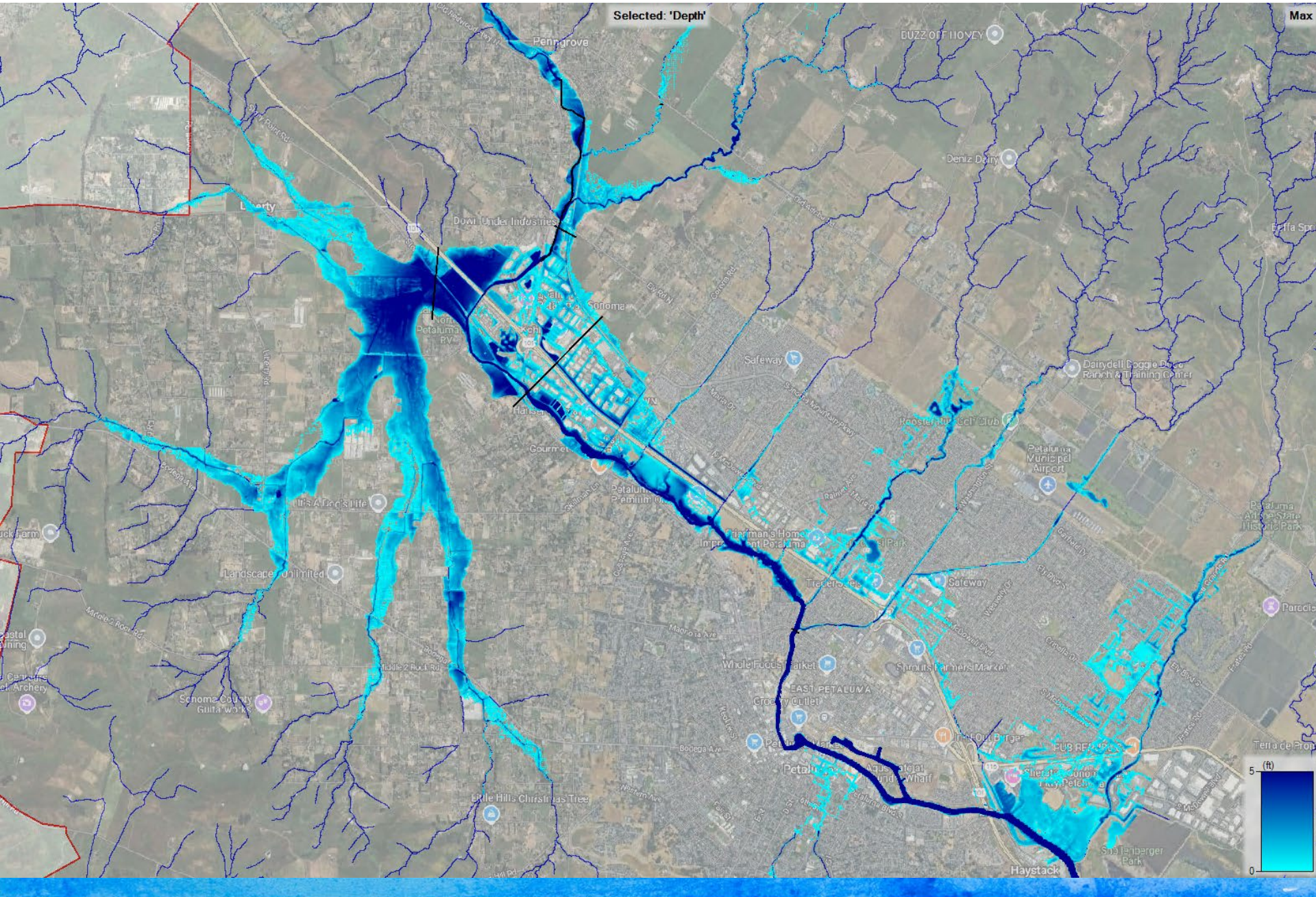
10yr Watershed overview



25yr Watershed overview



100yr Watershed overview



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