

San Francisquito Creek Flood Control

January 30, 2006

Crescent Park Neighborhood Association

Outline

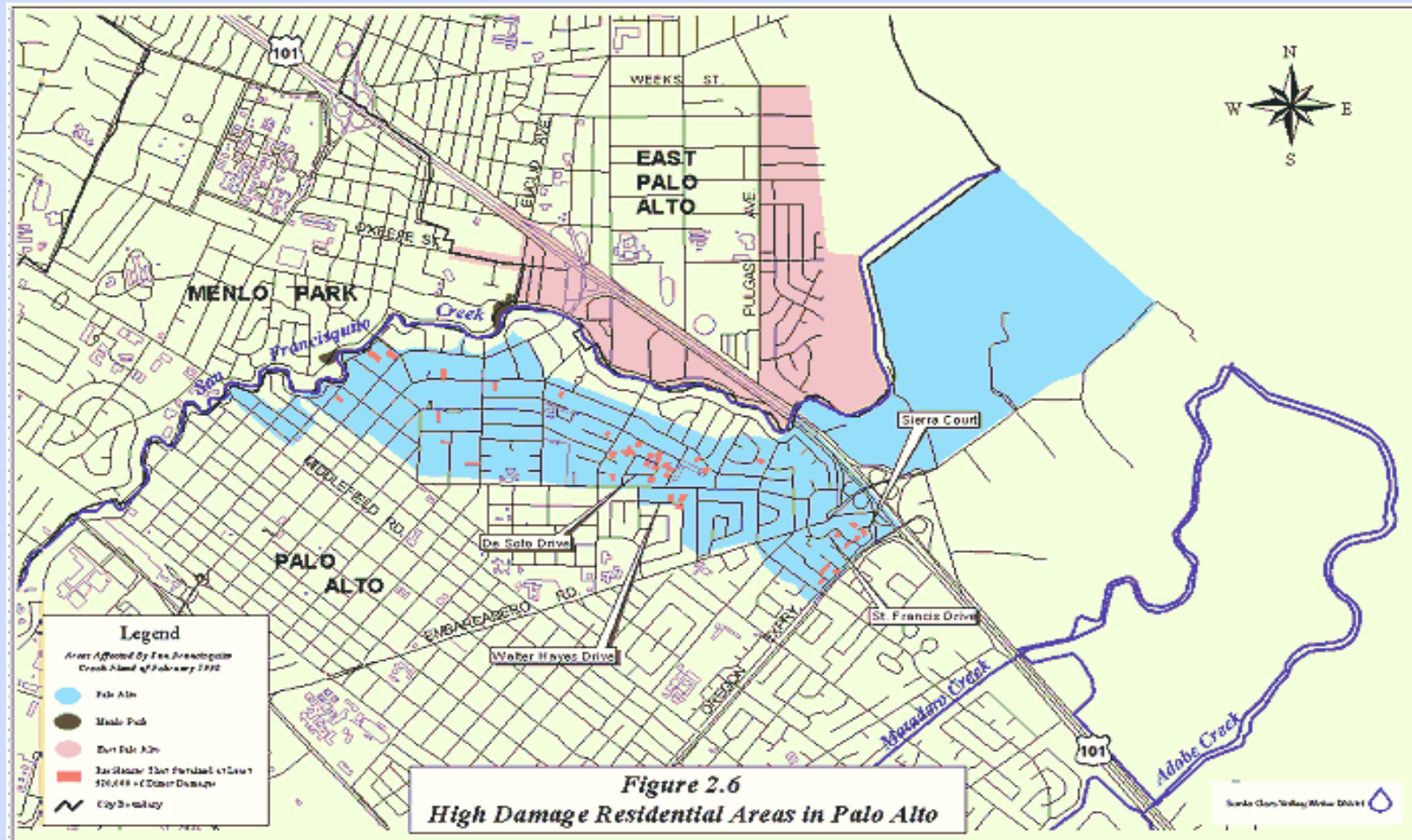
- **Situation today**
- **Background of SF Creek**
- **Creek simulation methodology and findings**
- **Proposed solution to protect against a 1998-level flood**
- **How does this fit with the GI project?**
- **Legal Issues**
- **Recommendations and next steps**

Situation Today ...

- **New Year's Eve near-flood event renewed community concerns, especially about the Chaucer Street Bridge**
- **The Army Corps of Engineers (ACoE) General Investigation project has a long timeframe (20 to 40 years) and is fraught with uncertainty**
- **Continuing threat to property and public safety**
- **Significant liability for the City of Palo Alto due to Chaucer Street Bridge**
- **Local leadership and involvement necessary**

Background of SF Creek

Flooding in 1998 - 7200cfs



Problems from man-made structures

- **Creek rerouting – City of PA ~1928
(east of 101)**
- **Bayshore/101 bridge – State of CA ~1960**
- **Chaucer/Pope bridge – City of PA 1948**
- **Middlefield bridge – City of PA 1932**

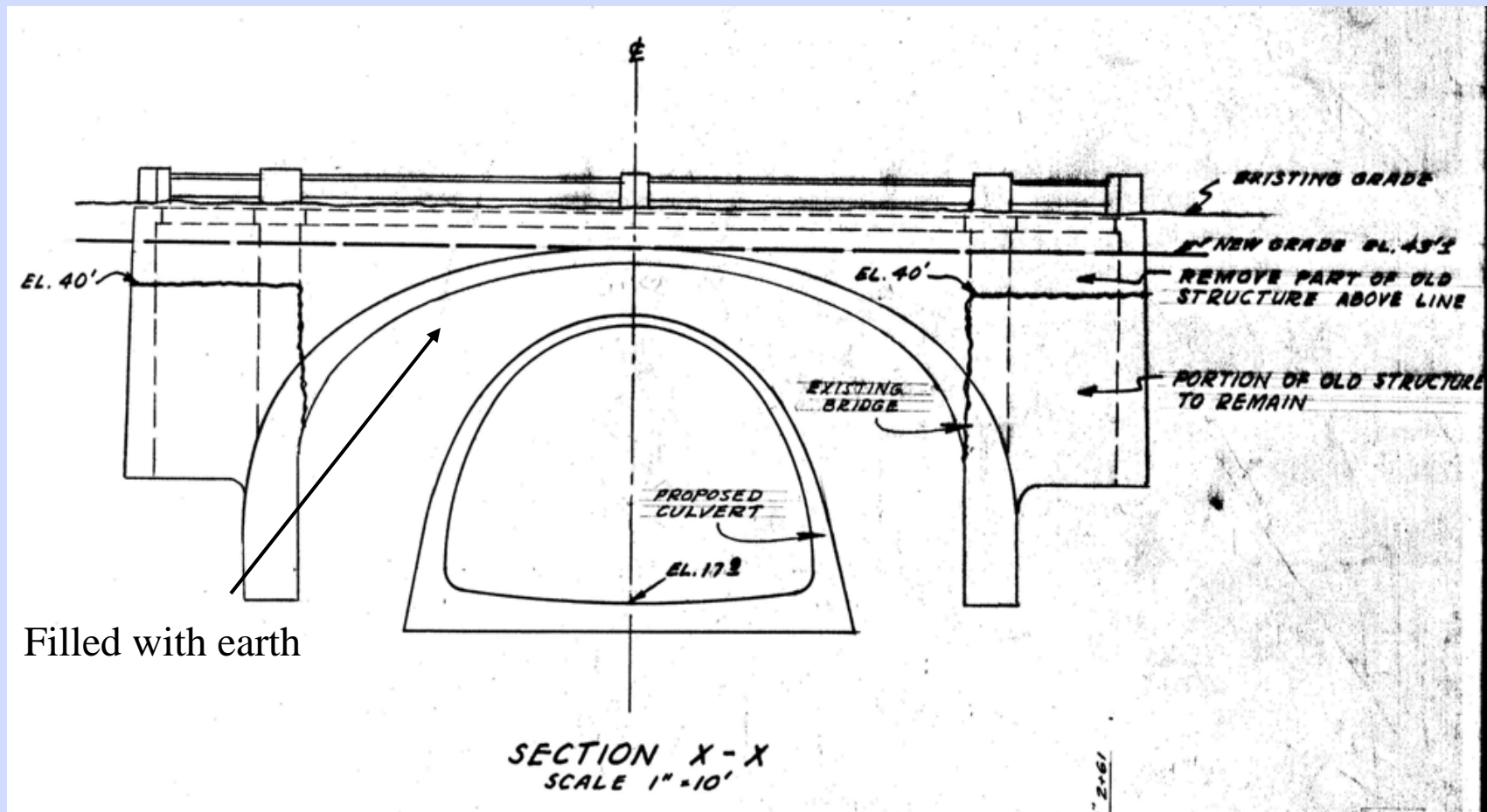
Chaucer/Pope in 1907



Chaucer/Pope rebuilt in 1948



Chaucer/Pope before & after



Chaucer St. Bridge as designed in 1946.

Original height on centerline (invert to soffit) = 19.5 ft; current height \approx 16.5 ft

Simulation methodology



Stephen G. Monismith

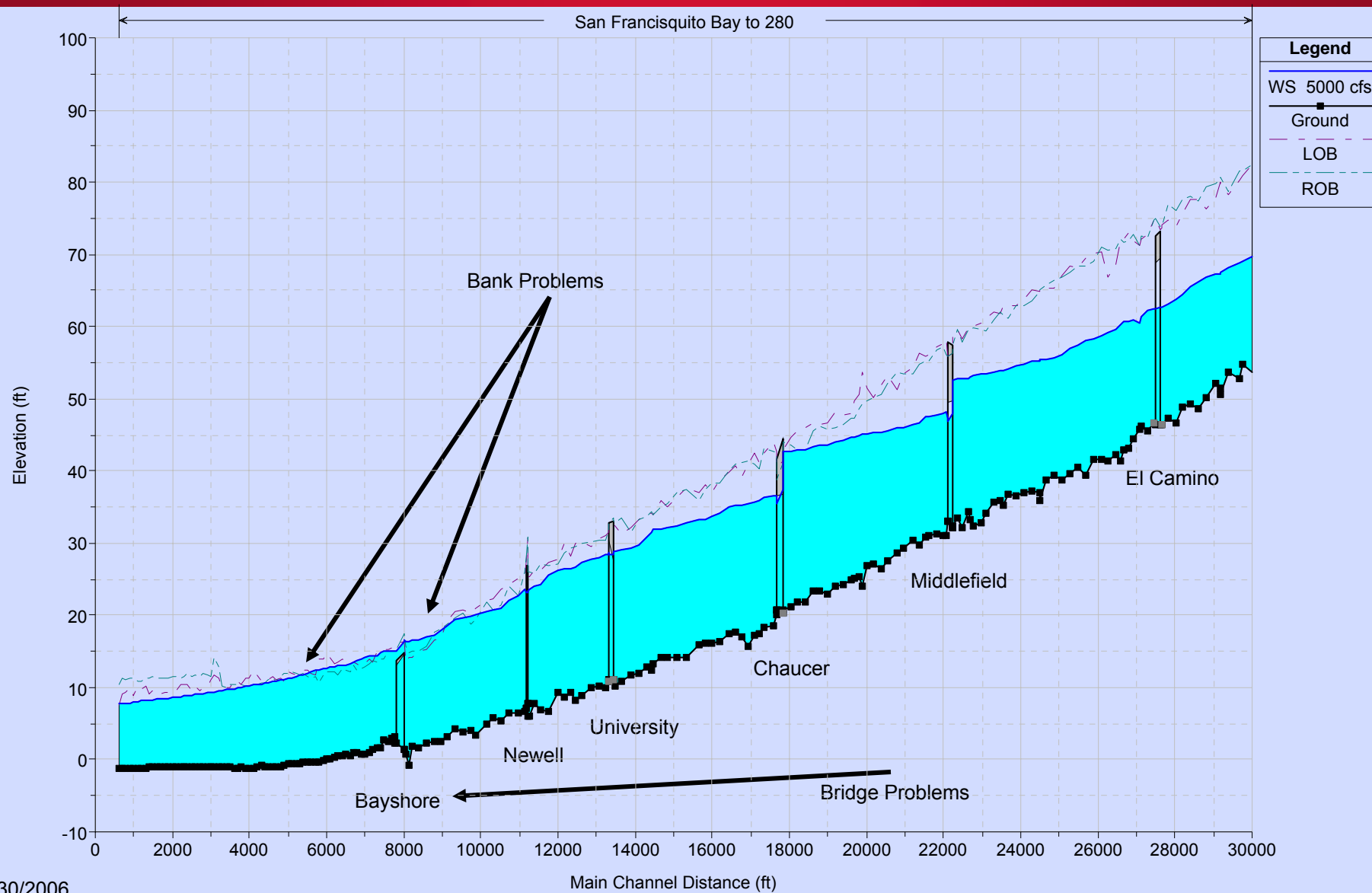
**Professor
Environmental Fluid Mechanics**

**Director,
Environmental Fluid Mechanics
Laboratory**

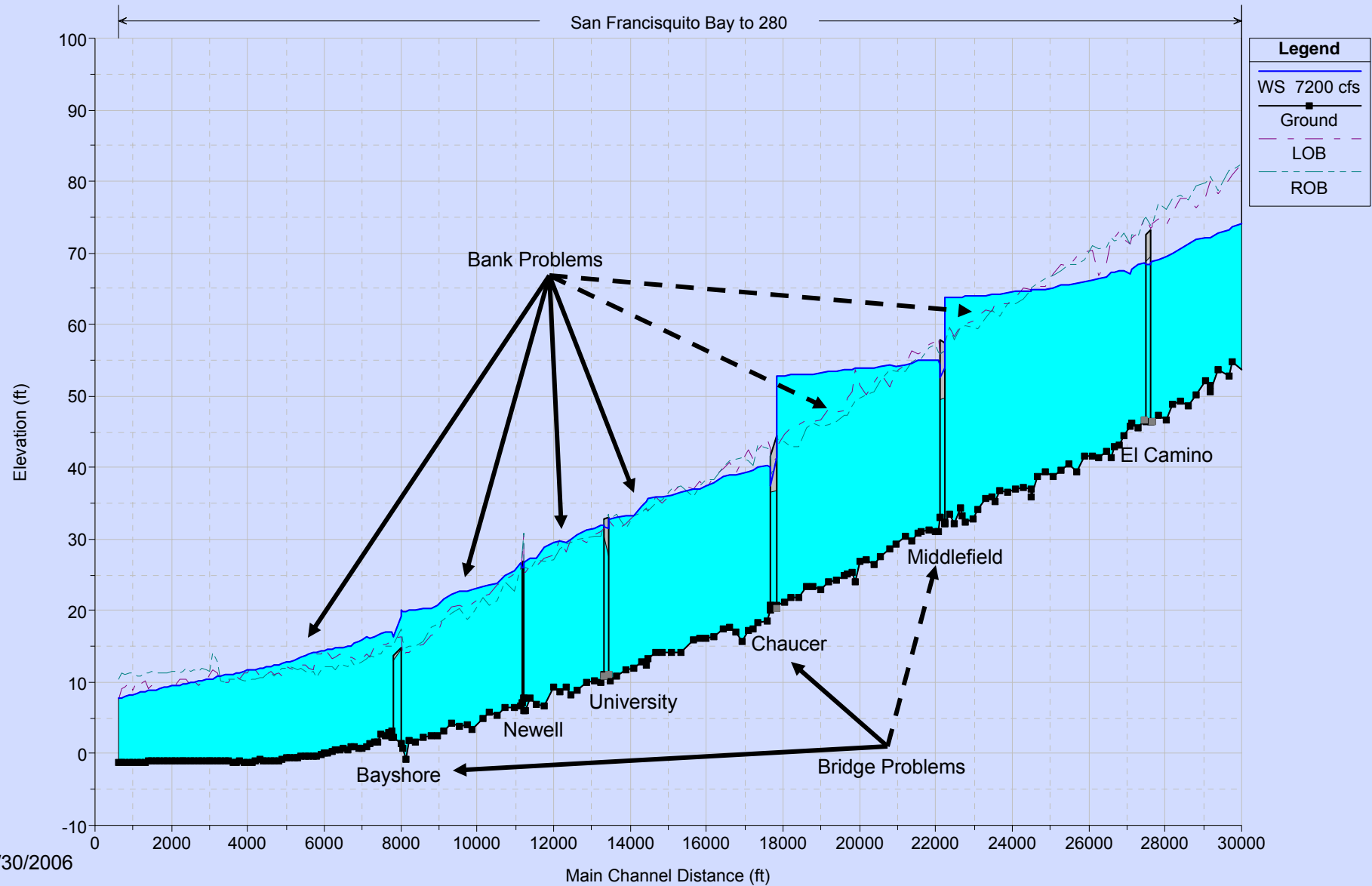
Simulation methodology

- **Model-based analysis enables system-wide approach**
 - » Identify where creek fails under increasing flow rates
 - » Hypothesize fixes and test them for effectiveness
- **Corps of Engineers HEC-RAS 3.1 hydraulic analysis code – current standard for analysis**
- **Latest creek survey data by SCVWD, updated for 2002 levee/floodwall project**
- **Model calibrated to 1955, 1982, and 2002 events – also correlated with 1998 and Dec 31, 2005 observational data**

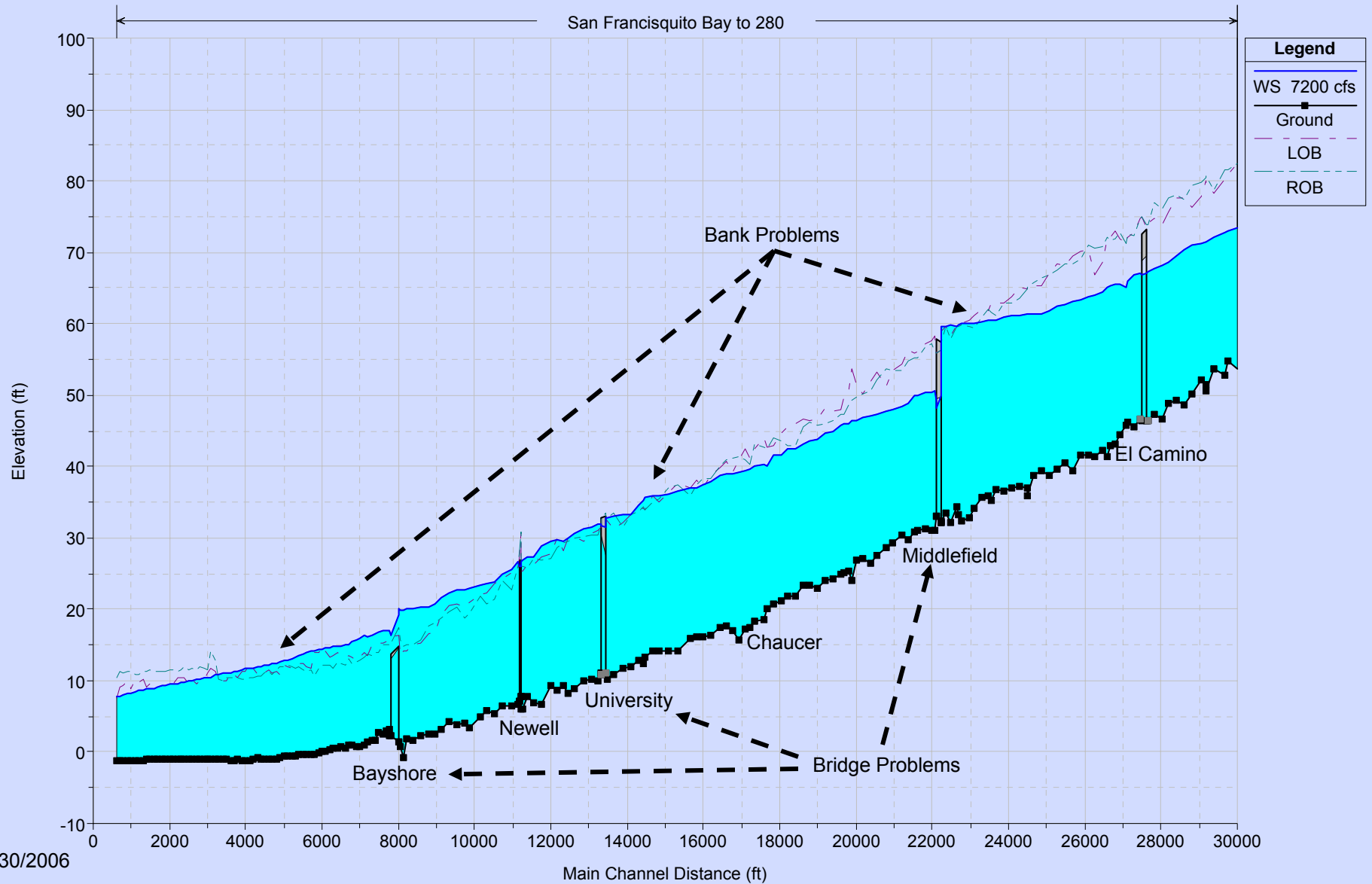
5000 cfs Flow Water Surface



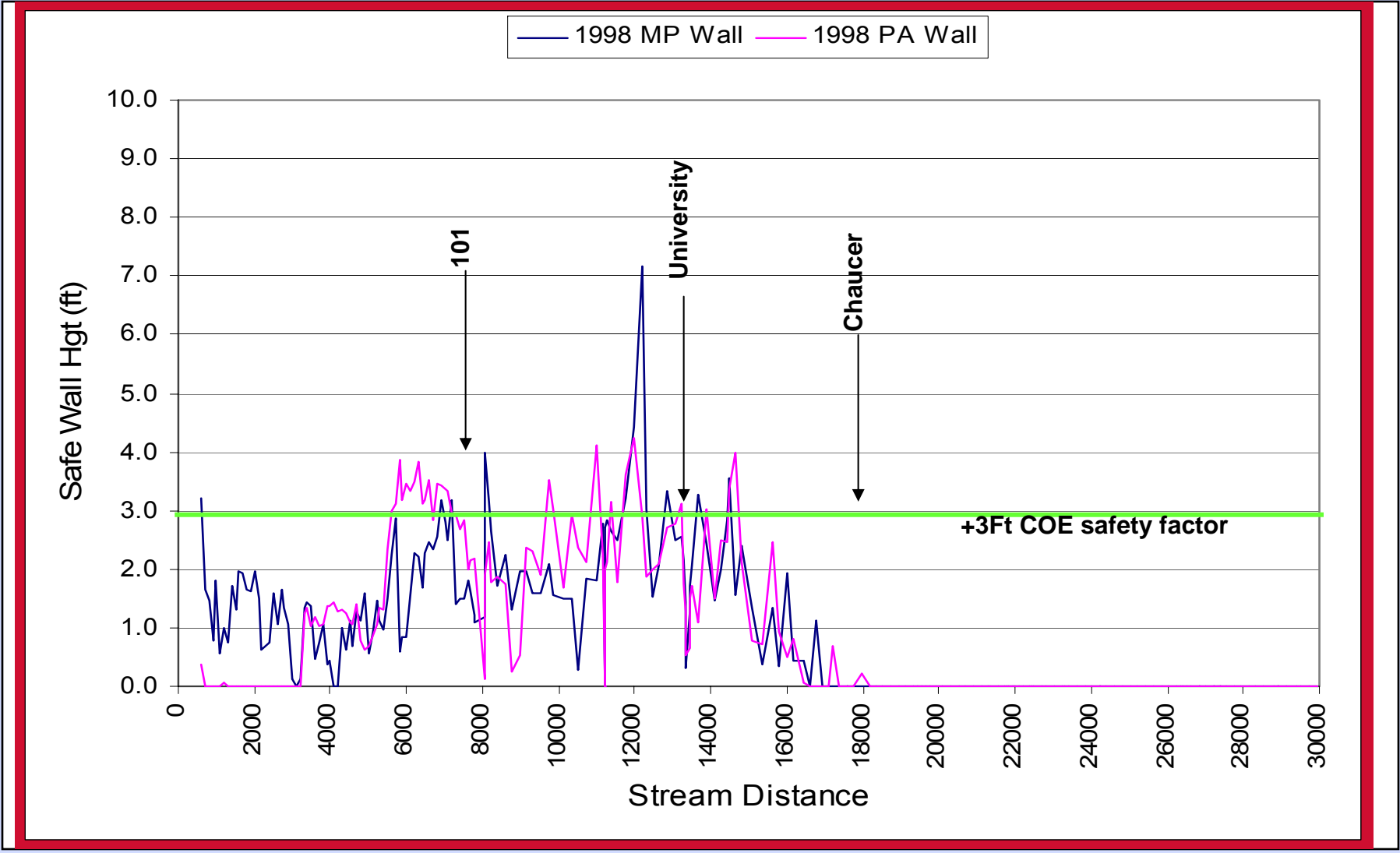
7200 cfs Flow Water Surface



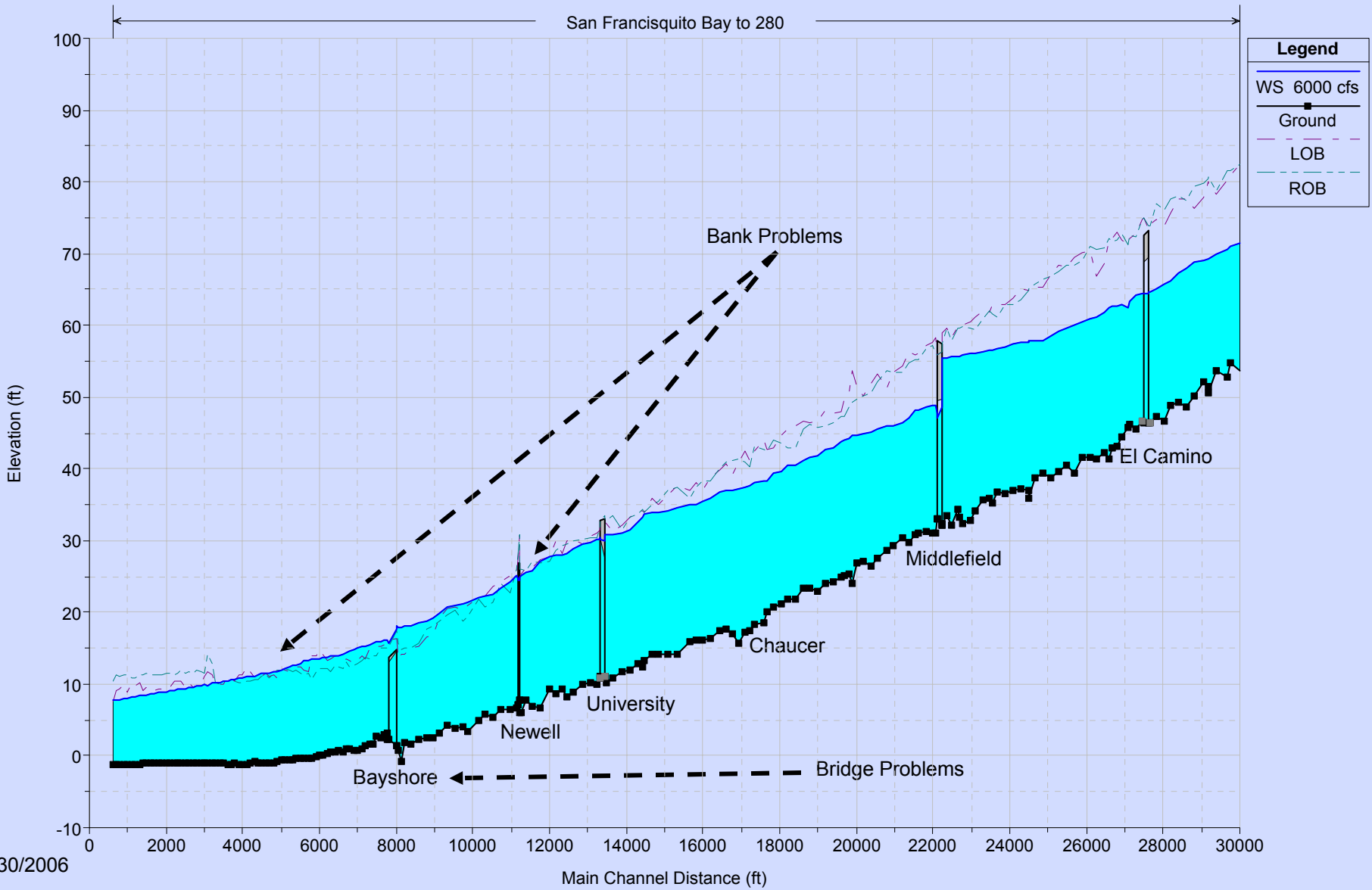
7200 cfs Flow Water Surface No Chaucer Street Bridge



Wall Heights (+3ft) for 7200cfs



6000 cfs Flow WS – No Chaucer Street Bridge



Proposed 7200cfs Solution

- **Raise banks downstream of 101 to hold 7200cfs**
- **Work with Cal Trans to add fourth tube to 101 bridge**
- **Raise banks between 101 and Chaucer to hold 7200cfs**
- **City of Palo Alto replaces Chaucer bridge**
 - » **Cost \$3.0 to 3.5M**
 - » **Palo Alto receives in-kind credit against future GI matching costs**

Note: Protection for flows over 7200cfs to be accomplished by the GI

Advantages to

- **City of Palo Alto ... significantly reduced liabilities and no increase in overall GI costs**
- **Homeowners in all three cities ... near-term protection from 1998-level floods and eventual protection from 100-year and tidal flooding**
- **JPA and ACoEFull political support for the GI and an increased probability of passing the needed bond issues. The JPA will have demonstrated its competence, and the voters are much more likely to approve the bond issue.**

How does the Short-term Solution fit with the GI?

- **Won't significantly reduce GI cost/benefit**
 - » 100-year flood damage estimated at \$780M (ACoE 905b)
 - » Reducing by \$50-60M won't change benefits very much
 - » Tidal flooding still has to be handled
- **Replacement of the Chaucer Street bridge and upgrade of the 101 bridge will certainly be part of any GI proposed solution.**
- **Why not do it ASAP?**

Legal issues

- **Suit for damages in 1998 settled for \$3.5M**
- **City of Palo Alto is liable for damages under the principle of “inverse condemnation”**
- **Palo Alto would not be liable for downstream flooding resulting from replacement of the Chaucer Street bridge based on California Supreme Court Decision - Locklin v City of Lafayette.**

Responsibility

- **The City of Palo Alto has the prime responsibility to protect its own citizens from harm caused by water diverted from the natural stream course.**
- **The City of Palo Alto also has the responsibility to support and assist the neighboring communities in protecting themselves from harm caused by fluvial and tidal flooding.**

Recommendations and Next Steps

- **The JPA and its individual members (Particularly the Palo Alto City Council) need to quickly agree that a short-term solution is necessary.**
- **The Santa Clara Water District engineers should update the HECRAS calculations or the JPA should hire a consulting firm to do so.**
- **Waiting for the ACoE just takes too long and the JPA needs to demonstrate to the future bond voters that it is an effective organization.**
- **Move ahead on the short-term solution!**