

A photograph of a riverbank showing significant erosion. The bank is composed of reddish-brown soil and is heavily eroded, with many tree roots exposed and hanging over the water. The water is murky and brown. The background is a dense forest of green trees.

# Hydrograph Modification Management Amendments

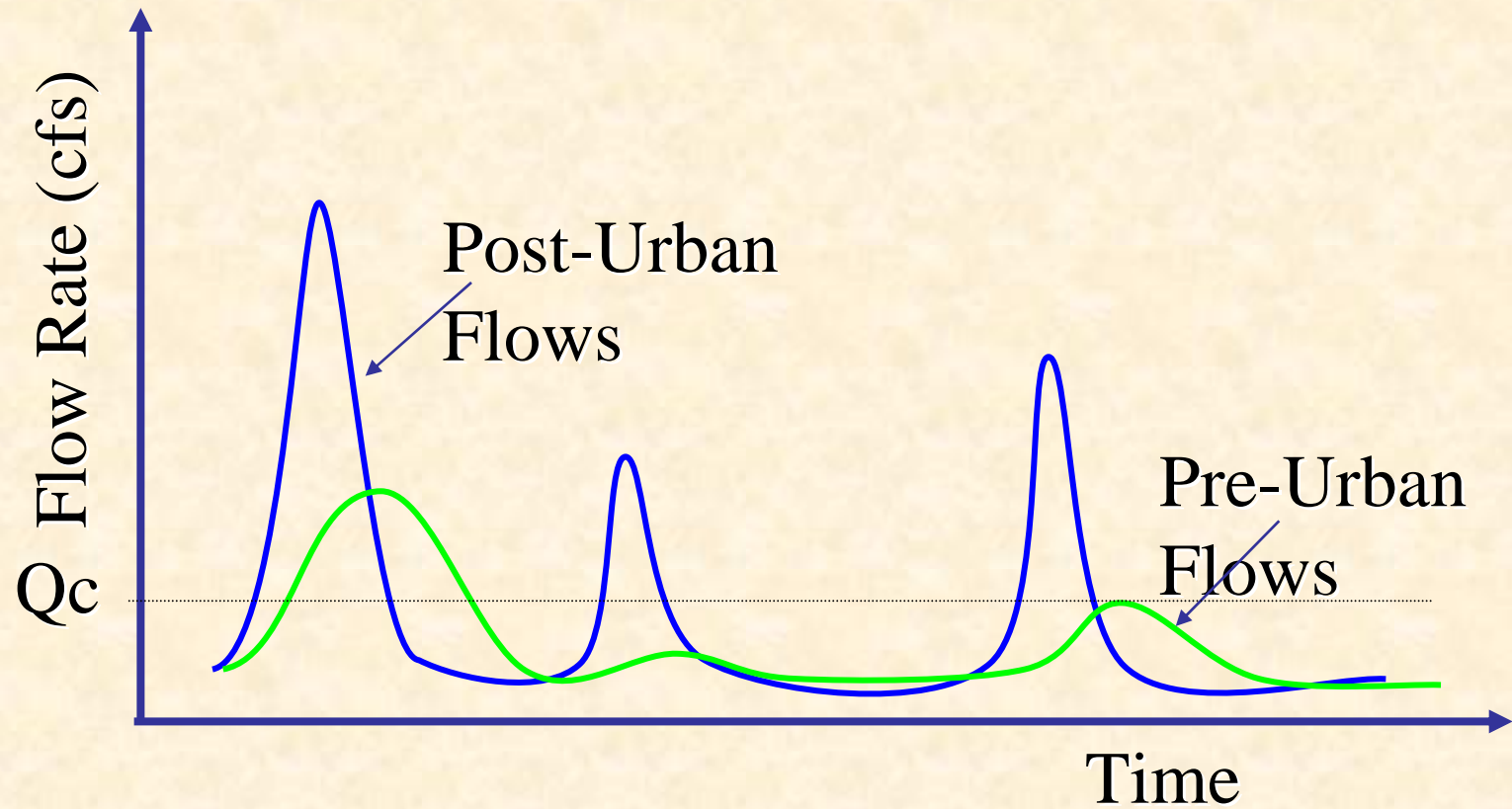
Jan O'Hara

March 14, 2007





# Modification of Hydrograph





**Before  
urban  
development**



**After  
development**





# Creek Bed Erosion















Photo by L.M. Johmann © 2005









# Sedimentation







# Tentative Orders

## HM Standard:

- Increases in runoff flow & volume shall not increase erosion in receiving stream
- Same in all 3 Tentative Orders





# Tentative Orders

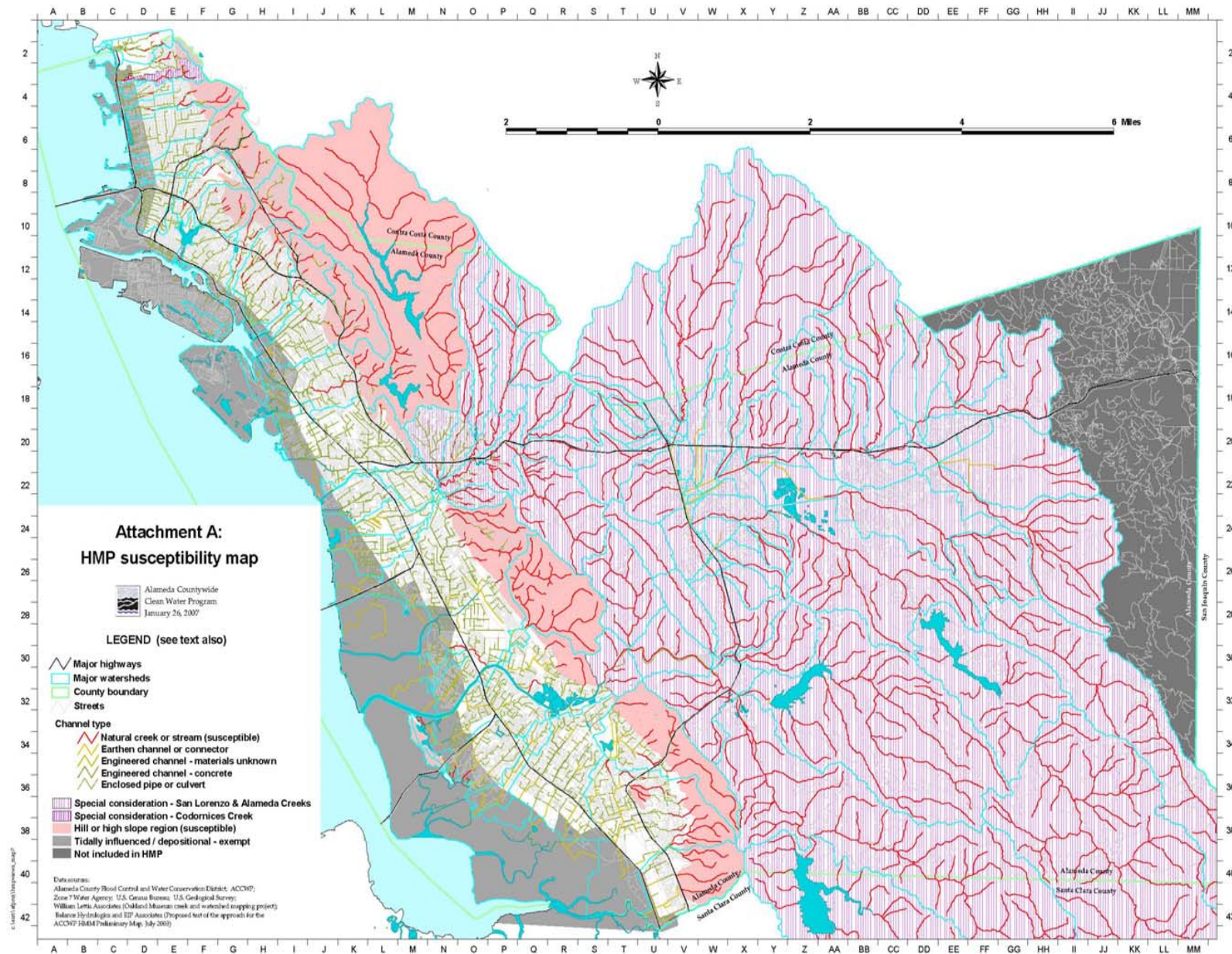
## HM Control Areas:

Include whole watershed EXCEPT:

- totally hardened & tidally-influenced channels
- some “highly developed” areas

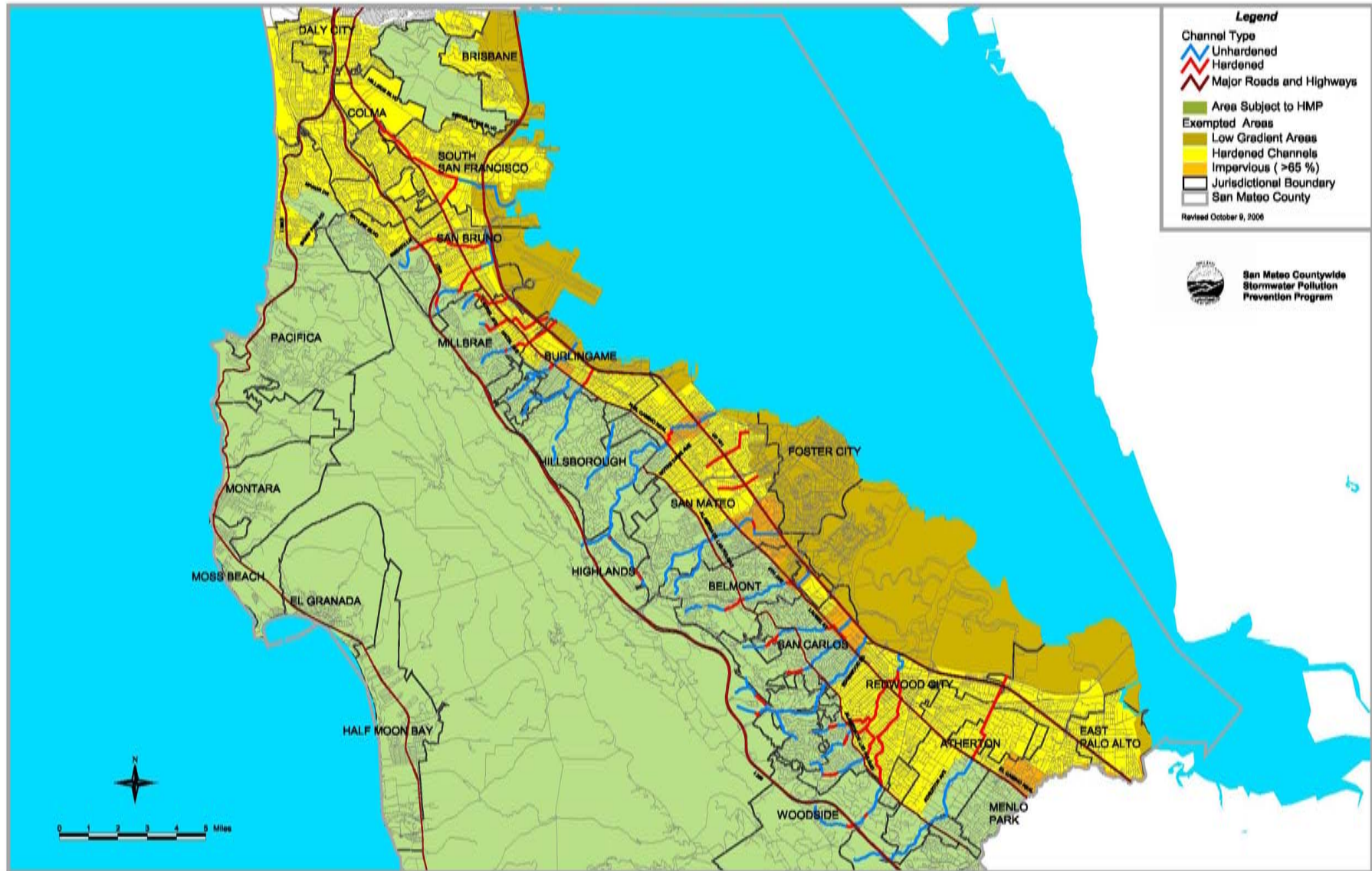


# Alameda Countywide HM Map





# San Mateo Countywide HM Map







# Tentative Orders

## Applicable Projects

- $\geq 1$  acre  
impervious surface
- Redevelopments  
that increase  
impervious surface
- *Exempt*: transit  
villages, brownfields,  
single-family homes





# Tentative Orders

## Design Criteria: On-site & Regional Facilities

- Sizing charts
- Bay Area Hydrology Model





# Tentative Orders

## Design Criteria: In-Stream Measures

- Only where stream already eroded
- Modify stream slope & geometry
- Must obtain permits





# Tentative Orders

## Impracticability

- Where on-site control too costly, & regional control & in-stream measures not options
- May contribute to other HM or treatment retrofit





# Public Comments

- Clarify format & language
- Broaden redevelopment exemption
- Do not change HM requirements in Municipal Regional Permit

