

PROTECTION AGAINST SEA LEVEL RISE – SAN FRANCISCO BAY



To protect against sea level rise in the San Francisco Bay a system of protection facilities – dikes, levees and structures – would be constructed at five strategically located points throughout the Bay. Each of these protection facilities must meet the specific P³ criteria below and will vary in size and operation depending upon the location and the water use they are protecting.

P³ Criteria

- Pass or Pump all Upstream Drainage under all Tidal Conditions
- Design Drainage Pumping Capacity for 500 Year Storm Frequency
- Provide “Fail Safe” Redundancy for all Equipment
- Assure Boating and Commercial Shipping Access when Required
- Assure Ability to Raise Protection in Viable Increments
- Use Single Row of Stainless Steel Sheet Piles in Dikes
- Use Dual Pair of Stainless Steel Sheet Piles with Concrete Filler in Levees
- Maintain Road Access across Protection Structures Using Fixed or Swing-Leaf Bridges
- Minimize Energy Requirements by Using Vacuum Assisted Siphon on Pump Discharges
- Maintain Normal Tidal Conditions on all Up-Stream Natural Marshes
- Minimize Pumping and Tidal Stream Upset to Existing Environment Conditions
- Eliminate Need for More Upstream Tidal Flooding Protection
- Provide Some Public Access to Bay Waters and Maximum Security for Protection Facilities
- Provide Solar Power and Wireless Communication for Operation by Remote Control



LOCATION OF FIVE PROTECTION FACILITIES

Upper Richardson’s Bay,
Marin County (prototype)

Lucas Valley (Miller Creek),
Marin County

Petaluma River, Marin and
Sonoma Counties

South San Mateo Bridge,
San Mateo and Alameda Counties

Carquinez Strait, Solano and
Contra Costa Counties

Upper Richardson’s Bay Levee

A major levee system with a 20 foot wide protective channel structure for tidal and rainfall runoff would assure these reaches of the bay were not affected by sea level rise.

The system requires swing tide gates and a swing drawbridge to allow sailboat and other pleasure craft access, a storm water pump facility to keep the upstream area free from water damage during high tidal conditions and supporting equipment.

