

Tidal gate across San Francisco Bay proposed to manage sea level rise

Colin Sullivan, Environment & Energy Publishing, 5-6-11

SAN FRANCISCO -- A giant tidal barrier stretched across the Golden Gate is among the adaptation remedies proposed by a Bay area nonprofit to cope with anticipated sea level rise caused by climate change over the coming century.

The San Francisco Planning and Urban Research Association mentioned the idea this week as part of an extensive analysis of how global warming might affect the City by the Bay, which is thought to be highly susceptible to flooding and other dangers in the decades ahead.

The group said a large dam, gate or lock to manage tidal flows in and out of the San Francisco Bay, and under the Golden Gate Bridge, might protect "a huge area of land from flooding with one project." The disadvantages of building such a barrier are the likely high expense and the engineering feat associated with erecting a barrier where a constant two-way tidal flow exists.

Other strategies mentioned in the report -- titled "Climate Change Hits Home" -- to deal with sea level rise are coastal armoring through levee and sea wall construction, moving development to higher elevations, building more structures that float, and managing a calculated retreat from low-lying areas more likely to be submerged by 2100.

The report also takes the position that any attempt to regulate greenhouse gases at this point, though well intended, will not slow the predicted effects of a changing planet. So the group argues for across-the-board adaptation, arguing that damage along the coast and in low-lying areas could cost California anywhere from \$7 billion to \$46 billion to adjust.

Flooding, heat and water pollution among concerns

The report identifies three key areas of concern in the Bay Area by the end of the century. They are sea level rise, water supply uncertainty due to an increasingly unstable snowpack and drought, and higher temperatures and heat waves.

For instance, the report notes that there are 22 wastewater treatment plants on the Bay Area's shoreline that are vulnerable to a 55-inch rise in sea level by 2100, which is on the upper end of such predictions. Not planning for changes could mean complete failure of the system and a significant amount of raw sewage discharged into the bay.

The report also notes that the Sacramento-San Joaquin Delta -- a key source of drinking and irrigation water for millions -- is vulnerable to saltwater intrusion over the next decades that could render it inaccessible for freshwater supplies. And more heat waves mean more illness and death, as the normally cool Bay Area lacks air conditioners on the scale seen in other parts of the country, the group said.

Among other proposed actions are:

- Reducing the so-called "urban heat island" effect by expanding urban forests and promoting white rooftops.

- Developing better heat response plans and emergency preparedness for heat events.
- Assessing what parts of the regional transportation system, including low-lying airports, would be most vulnerable.
- Making tough choices before midcentury on what transportation systems to protect, move, retrofit or abandon.
- Protecting vulnerable wetlands and migratory paths for wildlife.
- Developing plans to address a possible electricity supply deficit if hydropower is diminished.
- Shifting to alternative sources of water, such as desalination, conservation and recycling.