

Time to think about Golden Gate Locks

Mark Baird

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It's time to start seriously thinking about the Golden Gate Locks. Not suicide prevention padlocks on the bridge, but locks for ships to pass through between the sea and the San Francisco Bay. With the Greenland and Antarctic icecaps shrinking three times as fast as expected, the Golden Gate Locks will be needed a lot sooner than anyone thought.

Unless we are willing to completely lose our delta freshwater - not to mention every house, building and road on flat land within a mile of the bayshore - it is either locks across a mile and a half of a 40-fathom channel or hundreds of miles of inland levees to contain a rising sea. Locks would be cheaper, stronger, less subject to erosion and, face it, a hell of a more distinctive new tourist attraction than dirt levees.

But the Golden Gate Locks will present substantial challenges, which is why their engineering needs to begin soon. First, unlike most lock systems, they will have to operate against the natural influx of the sea, not with it, which will demand pumps instead of gravity flow to drive them. So in addition to building the locks, we'll have to start engineering the Farallones Offshore Windmill Farm to supply an inexhaustible, nonpolluting source of power.

Second, the Golden Gate Locks will not just allow ships to pass into the bay but will also artificially maintain the bay's tides to preserve the wetlands and to prevent the demarcation between saltwater and freshwater from shifting too far up into the delta and wrecking all the great bass fishing. The entire output of the Sacramento and San Joaquin rivers will have to be pumped into the sea, as not a drop of it will be able to defy gravity to flow into it. This will require larger pumps than we could buy off the shelf at Home Depot. Again, more reason to start thinking about all this now, not later.

Finally, there will be the matter of what color to paint the Golden Gate Locks. The history of contention over the color of the Golden Gate Bridge reminds us that settling this important detail could tie up the entire project for years. That the Golden Gate Locks invariably will wind up being called the Goldi-Locks could shortcut that decision.

These are by no means the only challenges. Now is the time to start getting this enterprise off the opinion page and into the CAD systems of reputable engineering firms. Time and a tide that is only rising aren't going to wait.

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Arctic climate change's un-glacial pace

David Perlman

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The Arctic's sea ice is shrinking, Greenland's ice cover is melting faster, areas of once-frozen tundra in Alaska are alive with plant growth, and wildfires during Southern summer heat waves are carrying soot to darken northern snowfields and speed the melting.

And a year-end report from more than 140 scientists around the world concludes that climate change caused some of the strongest-ever environmental effects on the Arctic this year and the pace of change is far from slowing.

Their research results, published by NOAA, the National Oceanic and Atmospheric Administration, in its "Arctic Report Card: Update for 2012," were summarized Wednesday at a meeting of the American Geophysical Union in Moscone Center.

"The Arctic is changing in both predictable and unpredictable ways, so we must expect surprises," warned Jane Lubchenco, a noted marine ecologist and NOAA's administrator. "And what happens in the Arctic doesn't stay in the Arctic," she said.

NOAA scientists first reported major changes in the Arctic environment in 2006, when the agency published its first annual "Arctic Report Card," and since then each year has seen the effects of climate change becoming more obvious - spotty at times, but always getting more serious, they said.

In the Arctic "this year was an astonishing year," said Jason Box, a glaciologist at Ohio State University who has measured the melting rate of the Greenland Ice Cap every year for the past 20 years.

"We've seen the warmest summer there in 170 years," he said, and the annual period of melting ice on Greenland's surface has lasted longer than at any time since 1979.

Box plans to fly to the ice cap there this summer to measure the precise rate and duration of the brief annual melting period. But he's worried that he and his colleagues may not be able to land at all on the spots where they must measure surface temperatures and drill down to measure changes in the ice cap's thickness: Soot from wildfires in Europe and North America is darkening crucial surfaces on Greenland's ice cap and make plane landings there too dangerous because the surface is unstable, he said.

One of Greenland's major outlets of meltwater from the ice sheet is the Jakobshaven glacier, and it's continuing to retreat faster and faster because of warming, Box said. In the past 12 years, he said, the glacier has retreated more than a mile, and its surface area has decreased by more than 30,000 acres - by more than 3,200 acres in the past year alone, he said.

Among other highlights in the 2012 report card:

- The entire Arctic region continued breaking records in the loss of summer sea ice, the spring snow cover and ice sheet melting in Greenland - all of it despite the fact that most Arctic air temperatures were "unremarkable" compared to the last decade.
- In September the Arctic's extent of sea ice was at its lowest since satellites began measurements in 1979.
- The extent of snow cover set a record low for the Northern Hemisphere in June, and a record low for Eurasia in May.
- The Arctic tundra has become greener and its plants have grown taller, while the growing season for all Arctic plants has lengthened.

The report

See a summary of the 2012 Arctic Report Card, the full report and a video at: www.arctic.noaa.gov/reportcard

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Judge's ruling puts snag on Potrero Hills Landfill's plan

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An expansion at Potrero Hills Landfill has hit a snag.

Solano County Presiding Judge Paul Beeman ruled that the Bay Conservation and Development Commission (BCDC) should vacate its approval of a marsh development permit for the expansion because proponents failed to prove that a reduced size project alternative is economically infeasible.

Potrero Hills Landfill is in the midst of expanding to 167 acres, impacting Spring Branch Creek. Expansion, however, will stop once a writ of mandate is filed directing BCDC to vacate its approval of the permit, according to Kelly Smith, attorney representing Sustainability, Parks, Recycling And Wildlife Legal Defense Fund (SPRAWLDEF).

Potrero Hills Landfill District Manager Jim Dunbar said the ruling is disappointing.

"We're still living within the conditions of all the permits we've received for the expansion," he said. "We're still moving forward until it's clear what direction we should take and the writ of mandate is filed."

He added that the landfill has survived an incredible amount of scrutiny and all the permits issued looked at the impacts to Spring Branch Creek.

A petition from SPRAWLDEF claimed that BCDC erred in issuing the permit for the expansion because it didn't pay attention to certain impacts on the environment. Instead, SPRAWLDEF alleged, the BCDC sided with Solano County in issuing a development permit based "on the financial wants of the Wall Street-traded garbage company that owns the landfill."

The project alternative that avoids any effect on the Spring Branch Creek is 127 acres. According to court documents, the project proponent presented evidence that adoption of the project alternative would result in a loss of 30 percent of the expanded landfill capacity, and would reduce the expected life of the expanded landfill area from 30 years to 20 years, but generate a cost savings of only 10 percent. This would yield a reduction in gross revenues of 45 percent.

Beeman explained in the court documents that there wasn't enough evidence presented by the proponents that the alternative was infeasible.

The permit requires that every effort be made to preserve natural channels and drainageways, and allows filling, grading or excavating watercourses or removing riparian vegetation only if there are no reasonable alternatives.

Beeman wrote, "While the project proponent provided estimates of total capital costs for both the project and the alternative, it did not provide sufficient direct or indirect evidence as to projected net profits for the project or the alternative, either as numbers, or annual rates of capital return."

"The limited evidence provided by the project proponent regarding costs, relative costs of the project compared to reduced size project alternative, and relative capacity of the project to reduced size project alternative is insufficient to establish the projected rate of return for either the project or the reduced size project alternative," he continued.

While Beeman was unsure of requiring the project proponent to choose between keeping "trade secret" information confidential, or proceeding with the project, he agreed that there must be evidence that the project proponent could disclose relevant to profit and/or rate of return for the proposed project and the reduced size project alternative -- which would not reveal, directly or indirectly, trade secret protected information.

Beeman agreed with SPRAWLDEF, that BCDC could have retained an independent consultant to determine the necessary information that could be shared with the court.

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