



Coastal Armor Destroys Beaches

April 11, 2017



Goleta “Beach” on March 14, 2017 at +4 ft tide. Typical summertime high tide is +6 ft.

AMEC’s 2015 EIR predicted that until 2050, “the emergency revetment would remain buried except temporarily following heavy storm event[s]”

At today's hearing, you will be told by staff that the outrageous costs you must approve, and the wholesale destruction of 2000 ft of the most heavily used sandy beach in our county, are the results of "unexpected" climate conditions, weather, and waves. Yet these results should be anything but surprising, as they are completely consistent with more than a hundred years of experience with fixed coastal armor all over the world. As described by coastal erosion experts Orrin Pilkey and Andrew Cooper in their book, *The Last Beach*, structures like the Goleta Beach rock revetment protect coastal property at the expense of the beach that made the property valuable in the first place. If we continue down the path of keeping rock revetments between Goleta Beach Park and the ocean, experience in India, Brazil, Bali, New Jersey, and along the shore all over the world shows that we will soon be asked every few years to pay for beach "nourishment" at a typical cost of a million dollars a mile.

If we paid an engineering firm to design a bridge for the county, and the bridge blew over in a wind storm, would we blame the wind? Of course not. And yet after we paid AMEC Foster Wheeler upwards of a quarter million dollars to analyze the environmental impacts of the Goleta Beach revetment, we find them and County staff making this sort of excuse. Last year, coastal engineering firm Moffatt & Nichol designed a fixed geotextile armoring structure for the park, again with an overall cost of hundreds of thousands of dollars. In their August 2, 2016, analysis of the structure, they wrote

The Tensar geogrid material (used for wrapping all cells) is especially durable and rugged, i.e. it is not expected to tear or deteriorate under the conditions at the Park site.

We all know what happened next. Once again, this will be blamed on "unexpected waves," as though we failed to pay an extra hundred thousand dollars for the deluxe modeling package that includes big waves. As Pilkey and Cooper write, to blame unexpected storms and waves is typical in this profession. For coastal engineers, unlike engineers in any other discipline, failure usually results in more work.

The Surfrider Foundation Santa Barbara Chapter believes that if we are to arrive at a low-cost, sustainable solution for the erosion problems at Goleta Beach Park, we need to replace these firms with consultants who are more competent, more honest, and more aware of the damage that coastal armoring does to the environment. We urge you to do so.

Below we illustrate some of the many failures and misrepresentations we have gotten from AMEC Foster Wheeler and Moffatt & Nichol in return for vast amounts of public money.



George Chapjian tells the California Coastal Commission that “Natural sand recovery began in April 2016 to further cover the repair... Sand levels increased and stabilized throughout the summer of 2016.”



Ten minutes later, Dan Gira from AMEC tells the Coastal Commission that “We’ve had a lot of erosion; we’ve had no sediment input.”

So which is it?



Goleta Beach west end revetment, September 15, 2016.



Goleta Beach west end revetment, December 28, 2016.
There has been literally (littorally?) tons of “sediment input” at Goleta Beach over the last two years. . .



...and yet it has not been able to cover the revetment naturally as AMEC predicted and County staff asserted.



Moffatt & Nichol: “The Tensar geogrid material (used for wrapping all cells) is especially durable and rugged, i.e. it is not expected to tear or deteriorate under the conditions at the Park site.”



Moffatt & Nichol: “In general, it is expected that there will be no impacts to the Goleta Beach coastal processes or marine resources if the geotextile cells are damaged or become ineffective over the long term.”

Cobble berms (hills of approximately fist-sized stones) have been used effectively to protect public parks, notably in the high wave energy environment of the Oregon coast. When asked by Coastal Commission staff to examine the possibility of using cobble berms at Goleta Beach, AMEC replied:

... However, cobble is not native to Goleta Beach and importation of cobble could affect the habitat characteristics of Goleta Beach. Cobble can also cause further erosion to downcoast beaches and damage to Goleta Beach infrastructure when it is liberated by wave action.



Goleta Beach on February 22, 2017.



Goleta Beach on February 22, 2017.
AMEC: “However, cobble is not native to Goleta Beach.”



Goleta Beach on February 22, 2017.



Goleta Beach on May 15, 2015.

Natural cobble at the west end has prevented significant erosion of the access trail over the last two years.



Natural cobble berm east of Goleta pier on March 8, 2017.

AMEC: “Cobble can also cause further erosion to downcoast beaches. . .”



Natural cobble berm east of Goleta pier supports a wide sandy beach and stable vegetation at the base of the cliff. March 8, 2017.

AMEC: “Cobble can also cause further erosion to downcoast beaches. . . .”

Please note: the photographs accompanying this document have been scaled down, and in a few cases cropped to reduce height, but are otherwise unaltered. High-resolution originals will be provided upon request. Send requests to surfrider@lipman.org