

MARIN COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
FLOOD CONTROL ZONE FIVE ADVISORY BOARD

MEETING OF APRIL 5, 2006

STAFF REPORT

Zone History

There are three sources of flooding in Stinson Beach: overflow of Easkoot Creek, extremely high tides, and extremely high surf. Each of these alone can cause some flooding and when combined, can cause substantial flooding, property damage and public safety problems. To address the flooding from Easkoot Creek prior to 1959 some maintenance dredging of the creek was done occasionally by the County DPW, State Division of Beaches and Parks, and the Corps of Engineers. Recognizing this continuing need, the Marin County Flood Control and Water Conservation District created Flood Control Zone Five in 1961 to address the flooding from Easkoot Creek specifically. The main purpose and function of the Zone was the periodic dredging of the creek and since its formation the Zone dredged the creek in 1967, 1973, 1977, 1982, 1987, and 1997.

After the 1997 dredging the Zone's reserves were depleted to almost zero. Accordingly, as there was no money to do anything, the Zone Five Advisory Board did not formally meet again until tonight's meeting.

Current Zone Status

Although the Advisory Board did not meet, the regular Zone maintenance work was carried out each summer. This work consists of vegetation management in the creek from the Community Center to the Park and along selected reaches from below the Park to Calle del Arroyo. In addition, Flood Control staff has continued to review development proposals, provide advice to residents relative to flood control and creek protection, stayed abreast of and commented upon the Bolinas Lagoon Study as it related to Easkoot Creek, and conferred with the NPS on a creek restoration project.

Since the 1998 nadir, the Zone's reserves have built up. Currently the Zone has an annual income of approximately \$40,000, minimum annual expenses of \$10,000 and cash reserves of approximately \$185,000.

The current problems in Zone Five are the same problems there have always been: the elevation of Calle del Arroyo and some of the adjacent Patios are low enough that they flood from extreme high tides, Easkoot continues to fill with sediment from the Mountain and, even when dredged, can not begin to carry the flow from a large Pacific storm.

Past Studies

As mentioned above, there are three sources of flooding in Stinson Beach (creek overflow, high tides, and high surf) and Flood Control Zone Five was formed specifically to address the flooding from the creek. To this end, in 1971 FC staff (MMS) prepared a *Preliminary Master Flood Protection Plan* that looked at flooding from Easkoot and from high tides but not from high surf. The study analyzed four alternative designs to handle this flow:

- **Plan A** involved a bypass channel through the Park to divert high flows from Easkoot to the Ocean, levees along the lower reach of Easkoot to stop tidal flooding and pumps to drain the areas behind the levees.
- **Plan B** called for deepening and widening the creek as well as the levees and pumps in Plan A but did not include the bypass channel.
- **Plan C** included the bypass channel through the Park but dropped the levees and pumps. Instead, Flood Plain Zoning and long term modifications to roads and structures (i.e., raising them) would be used to mitigate flood damage/problems.
- **Plan D** did not include any immediate physical work. It relied completely on Flood Plain Zoning and long term modifications to roads and structures as in Plan C.

Although the Advisory Board felt that Plan C was the best alternative, budgetary restrictions and a more immediate problem (erosion behind the Community Center) caused this issue to fade into the background.

After the devastating storm and high surf of January, 1982 caused massive flooding and destroyed several homes, the Zone hired William Spangle and Associates to do a more comprehensive and formal study of alternative solutions to the flooding, including that caused by high surf. That report, *Alternative Mitigation Measures for Storm and Flood Hazards*, looked at a wide array of actions and design elements and recommended several measures be taken including constructing a 15 foot high seawall to protect from high surf, raising Calle del Arroyo, and constructing a bypass channel. This report received considerable criticism from several quarters and was not pursued, again mainly due to budgetary constraints.

Although both reports have their drawbacks, taken together they nevertheless contain most, if not all, necessary data and consider to some degree most, if not all, potential flood mitigation measures for Zone Five. Although these reports should be cross-checked against one another and reality, some calculations verified and estimates updated, it is staff's opinion that no new studies are necessary at this time. These two studies, revised as recommended, should suffice for purposes of discussion and setting direction.

Next Steps

Although better than in the past, the Zone's reserves and income are still not much relative to the cost of designing, permitting and constructing flood control infrastructure and/or dredging programs. To carry out almost any effective program the Zone will have to look for additional funding. However, to have a real chance of obtaining any, the community must coalesce behind a specific, albeit conceptual, plan. Programs that are successful in obtaining outside funding have broad community support, minimal opposition and some matching funds.

Accordingly, the Zone in conjunction with other community organizations and agencies needs to hold one or more meetings to work out a conceptual plan for addressing the flooding problems in Zone Five. Only by involving a broad spectrum of the community can a plan be developed that has broad community support. As discussed above, the past studies should suffice for this purpose but if new information or data is needed, it can be obtained. Other organizations and agencies that might be involved include the Stinson Beach Village Association, Seadrift Association, Stinson Beach Fire District, Stinson Beach Water District, natural resource advocacy organizations, and the National Park Service.