10/17/2018

To Whom It May Concern:

Bohley Consulting, Inc. (BCI) has been the civil engineer for Westpoint Harbor and Pacific Shores Center (PSC) from 1991 to the present and has had long experience in thick “Bay Mud" projects in the San Francisco Bay Area. We have also provided our Bay Mud design expertise for the development of Redwood Shores and other Bay Mud projects on the mid-peninsula. The following is background information regarding the wetlands mitigation measure required as part of the Westpoint Harbor (WPH) CEQA process, and the subsequent engineering execution of the project.

Regarding the function of a 10-inch pipe connection and flap gate between the marina basin and the Cargill Ditch, this approach was proposed by Dr. Radford (Skid) Hall in a Mitigation and Monitoring Plan (MMP) developed as part of the CEQA process for the Westpoint Marina project. His focus was on replacing 0.27 acres of wetlands lost due to the creation of a crossing across the Cargill Ditch between PSC and WPH and to also promote regrowth of vegetation in the ditch. BCI prepared the Site Preparation plans and coordinatedwith the City of Redwood City (specifically the Engineering Department Manager, Jon Lynch), Pacific Shores Center, the Army Corps of Engineers, and Dr. Hall during the design process. As is typical, the physical design was updated as the process unfolded.

1. As part of the proposed MMP, a 10-inch pipe was to be installed to allow Bay water from the marina basin to flow into the northerly section of the Cargill Ditch to speed up the reestablishment of native plants in the ditch. The plan also proposed flap gates on the two 24-inch culverts to be installed under the main access road crossing between PSC and WPH in order to retain water in that section of ditch on WPH property.

2. The 10-inch pipeline was to be placed one foot below mean high water (MHW) so that it would operate only at the upper end of high tide cycles. This pipeline was to have a valve at the marina end and a flap gate at the ditch end so that it could be manually manipulated, if desired. In addition, the two 24-inch culverts under the road crossing were to have flap gates on their northerly ends so that the water allowed in from the Marina basin could only flow northerly toward the Westpoint Slough flap gate outfall into the Bay. The idea was that this would create circulation of Bay water in a portion of the ditch as partial mitigation for the project and, if necessary, one could open the valve if the ditch ever became dry. In other words, Bay water would come into the northerly portion of the Cargill Ditch at high tide and drain out at low tide.

3. At the time of the design for the Marina, the PSC project had been completed and had been operational for approximately three years. It is important to understand that the Cargill Ditch is approximately 4,500 feet long, curves around PSC, and drains in both directions to the Bay. Part of the mitigation for the PSC project was the use of the Cargill Ditch as a detention basin to handle storm water runoff that was projected for the PSC project area. In order to comply with Redwood City’s 100-year storm water runoff design requirements, it was necessary to be able to discharge these PSC storm waters both into Westpoint Slough through a tide-gate structure as well as into the Seaport Boulevard storm drain system across a weir at the Seaport Boulevard end of the Cargill Ditch. The Seaport Boulevard storm drain system then discharges into the large Seaport Boulevard Pump Station that pumps storm waters directly into the Bay.

4. The installation of flap gates on the two 24-inch equalizer pipes under the Marina entrance road would have isolated a large portion of the runoff from PSC that drains into the Cargill Ditch northerly of the WPH main access road, into a short section of the Cargill

Ditch. During a high tide cycle, no water could flow out into Westpoint Slough essentially backing up into PSC and causing flooding. Without the 24-inch flap gates, this isolated water would normally flow northerly toward the Westpoint Slough outfall point (at low tidal cycles) or southerly into the Seaport Boulevard pump station (at high tidal cycles). Because the City did not want the hydraulics of the PSC storm drain system to be changed by flap gates on the two 24-inch equalizer pipes, they required the 10-inch pipe and flap gates to be eliminated from the WPH project. As is evident, an open 10-inch pipe from the Marina basin and without flap gates on the equalizer pipes, would simply cause the Seaport Boulevard Pump Station to endlessly pump water from one part of the Bay to another whenever there was a high tide.

5. The Cargill Ditch is in a storm drainage easement agreement that provides for Cargill, WPH, and PSC to equally share in the storm water capacity of the ditch. Coordination between the easement holders is essential. If Redwood City had allowed the installation of flap gates on the equalizer pipes, the provisions of the easement may have been abrogated without the consent of the easement holders and the City. As a result the previously approved storm drainage hydraulic calculations for the PSC project would have been compromised.

6. Pacific Shores Center irrigates their landscaped areas. Runoff from this irrigation flows into the PSC storm drainage system and ultimately into the Cargill Ditch. In combination with the normal leakage of the Westpoint Slough tide gate and rainfall means that some water regularly flows into the Cargill Ditch. In addition, because of areal settlement due to the depth of Bay Mud, the ditch has subsided somewhat below the outlet of the tide gate which allows the ditch to always contain some water.

In summary, mitigation of the 0.27 acres lost was accomplished and revegetation of the Cargill Ditch occurred rapidly in 2006 when the crossings were complete. The Cargill Ditch contains some water at all times and the pump station functions as intended. The changes described above were made for sound engineering reasons and coordinated between agencies including BCDC. The as-built design (without the flap gates and 10-inch pipe) is correctly shown on the Westpoint Marina and Boatyard Phase I Plans prepared in 2005.

Craig Vierra
By direction of
Peter R. Bohley, PE
Bohley Consulting, Inc.