

CITY OF SANTA BARBARA WATERFRONT DEPARTMENT

MEMORANDUM

Date: March 20, 2014
To: Harbor Commission
From: Scott Riedman, Waterfront Director
Subject: **Federal Channel Dredging**

RECOMMENDATION:

That Harbor Commission receive and review a status report on the Federal Navigation Channel Dredging.

DISCUSSION:

For the first time in decades the Federal Channel in Santa Barbara Harbor has essentially closed due to shoaling. While smaller, shallow draft vessels can still enter and exit the harbor, all other vessels, including the USCG Cutter *Blackfin*, are unable to leave. This condition is the result of the most significant swell to hit Santa Barbara in six years and delays with the Army Corps of Engineers (Corps) contract with AIS Construction (AIS), the dredging contractor.

March 1 Swell

Pacific Ocean swells typically move sand along the Santa Barbara's coast in a westerly to easterly direction. Approximately 300,000 c.y. of sand is transported to the harbor every year requiring a dredge to bypass the sand down-coast to nourish beaches in Montecito, Carpinteria, and eventually the Ventura area. Sand movement is constant but not regular. For example, sand is deposited gradually in the harbor during the summer months when ocean swells are smaller. Sand deposition increases dramatically in the winter with larger swells that typically occur between November and March. Dredging is normally conducted in the fall to remove the sand that gradually deposits in the harbor during the summer and again a few months later to remove the sand that is deposited more rapidly during the winter. With a clear channel after fall dredging, even the largest swells and attendant deposition of sand can be accommodated without closing the harbor.

The angle at which large swells enter the Santa Barbara Channel has a direct effect on how much sand is moved into the Federal Channel during any given swell. Most eastern Pacific swells impacting the channel during winter are from an angle of approximately 290° - 320° with most swell energy bypassing Santa Barbara. A slight change in swell angle to approximately 270° allows much more swell energy to impact the harbor entrance. On March 1, a very large swell from an angle of 270° hit Santa Barbara causing coastal flooding, severe beach erosion, and significant deposition of sand in the Federal Channel.

By way of comparison, the last significant swell occurred on February 24, 2008. This swell hit from a similar angle and caused significant coastal flooding and damage along Santa Barbara. Since dredging was occurring at the time of the swell, pre- and post-storm dredge surveys were conducted which determined that over 50,000 c.y. of sand were deposited in the Federal Channel during that single swell. Fortunately fall dredging had been completed creating adequate volume within the channel to absorb the sand deposited during the swell. The width of the entrance channel was severely reduced but remained open to all vessels.

Since the harbor had not been dredged this year during the fall cycle, there was very little capacity to absorb the extensive amount of sand deposited during the recent swell. Typical shoaling patterns extended the sand spit across the Federal Channel towards West Beach. This condition has reduced maximum depths to roughly 5' MLLW over a very narrow area allowing small, shallow draft vessels to enter and exit the harbor but severely limiting access for larger vessels. Harbor Patrol has been escorting vessels in and out of the harbor upon request since March 1.

Corps Contracting

As previously reported to the Harbor Commission, the Corps determined that the lone bid submission was unbalanced and were unable to award a contract so the solicitation was cancelled. The Corps entered into negotiations with the lone bidder, AIS Construction, requesting cost and pricing data in order to determine the reasonableness of their bid. The Corps spent months collecting data and renegotiating the bid. An acceptable bid was submitted in early February with the Corps awarding a contract and issuing a Notice to Proceed on February 18. Since this is the beginning of a new contract, AIS had to mobilize all of their equipment, install the dredge yard, and place approximately 6,000 l.f. of dredge pipe along West Beach, across the Mission Creek Lagoon, and down East Beach to the vicinity of Calle Cesar Chavez Street. The 24" diameter pipe is trucked to Santa Barbara in 50' lengths that are welded together into 400' sections. Each 400' section is dragged down the beach into position where it is attached to other sections. This is time consuming work that has taken much less time than normal due to AIS working 24 hours a day.

Despite AIS's efforts to mobilize as quickly as possible, dredging could not begin prior to the March 1 swell. The swell and corresponding storm actually delayed mobilization a few days. Nevertheless, AIS managed to begin dredging on March 8 only to break down after only a few hours. A custom made electronic module failed requiring it to be sent back to the manufacturer in Houston for repair. This resulted in yet another delay with the commencement of dredging postponed another five days. AIS has a 70 day contract window to complete the dredging. The contract allows for 180,000 c.y. of dredging during this cycle. Recent surveys indicate over 300,000 c.y. of sand in the Federal Channel.

The Corps has successfully solicited bids and entered into contract with a variety of different dredge contractors for decades. This is the third 3-year contract in a row for which AIS was the low bidder. As with all federal agencies governed by Federal Acquisition Regulations (FAR), the Corps is scrutinizing their bids and contracts more than ever to ensure compliance with changing contracting laws and procedures to make sure the public receives the most cost effective product possible. This is the first year that this heightened scrutiny resulted in a rejected bid with an extremely time consuming follow up negotiation with the low bid contractor. The Corps and AIS spent considerable time and effort working out the details of a revised bid. This resulted in missing the fall cycle and a late start to the spring cycle. Since mobilization is now complete, the remaining fall and spring dredge cycles should commence on time through the spring of 2016 when the 3-year contract will go out to bid once again.

CONCLUSION:

The Corps has been responsible for maintaining Santa Barbara Harbor's Federal Channel since 1972 at no cost to the City. They have successfully managed to keep the channel open for all vessel traffic for decades with the exception of some minor closures during the 1983 El Nino conditions. The Corps has never rejected a low (and only) bid and gone through a rebidding process prior to this year. The March 1 swell was an extreme event with a recurrence frequency of at least five years. The coincidence of the Corps' contracting issues and an extreme swell was an unfortunate situation that resulted in the harbor being closed for all but the smallest vessels. Waterfront staff has requested a meeting with the Corps to discuss ways to avoid future contracting delays so that the harbor is never this vulnerable again in the future. Staff will also request additional funding to dredge as much material as possible in excess of the 180,000 c.y. included for this cycle.

Prepared by: Karl Treiberg, Waterfront Facilities Manager