

FROM THE COVER

Mining may worsen floods

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stretch of the river's west fork. The dredging, expected to start this month, will be the first major Houston-area flood-control project resulting directly from Harvey — even as leaders of the recovery effort see momentum on other fronts.

"Things are starting to move," said Marvin Odum, Houston's chief recovery officer. He noted that federal officials approved Texas' \$5 billion housing recovery plan last week and that county officials are preparing for an Aug. 25 bond election on \$2.5 billion in flood mitigation projects.

The U.S. Army Corps of Engineers, which is overseeing the dredging project, is reviewing bids from three companies in amounts of \$34 million, \$69.8 million and \$108.9 million. The agency expects to award a contract soon.

Despite widespread agreement that the dredging will increase the river's capacity to hold floodwaters, there is no consensus on where the sand that's clogging the waterway is coming from and no funding or mechanism for routine maintenance dredging.

Corps officials said they were authorized only to restore the river to its pre-Harvey condition.

Studies dating back almost 20 years show that sediment has steadily accumulated in the San Jacinto River and in Lake Houston.



James Slaughter rests in his living room as his flood-damaged home is renovated. Below, Amy Slaughter sits in a greenhouse converted into an air-conditioned office. The family is in favor of a San Jacinto River dredging project to help alleviate flooding in Kingwood.



A 2011 Texas Water Development Board study concluded that the lake, a major source of Houston's drinking water, had lost 21 percent of its capacity since it was impounded in 1954.

Experts say the sediment is certain to begin building up again as soon

as the contractor removes its dredges next spring.

"That's simply the way rivers respond when there is a lake in front of them," said William Dupre, an associate professor of geology at the University of Houston.

Guy Sconzo, a retired Humble Independent



School District superintendent, lives in one of the estimated 16,000 Kingwood homes that flooded during Harvey. Sconzo said he believes dredging will reduce flood risks in the short run.

"But if that's all that's done over the long run, that's not going to make the difference that really needs to be made," said Sconzo, whose house took on 4 feet of water. Dredging must be done on a routine basis, he said, and detention areas must be created on streams such as Cypress Creek and Spring Creek, which flow into the San Jacinto River.

Amy Slaughter, whose family moved into a trailer in their driveway after Harvey flooded their Kingwood house, said a lot is riding on the dredging project.

have proliferated on the river in recent years, supplying raw material for the construction industry in a rapidly growing area. When the river rises rapidly during a storm like Harvey, these critics say, it picks up sand from the large excavations at mines along the riverbank, then dumps the material into the river when the water subsides.

Gov. Greg Abbott touched on this theme when he visited Kingwood in March and viewed the river from a helicopter with Houston City Councilman Dave Martin.


"Very profoundly, Dave and I witnessed a stunning number of sand mining operations all up and down the river, and were able to understand more comprehensively the way

ly in the river," a memorandum produced by the association states. "A more in-depth examination of historical and technical data demonstrates that mining is not the source, but is in fact a long-term and sustainable solution."

Perkins elaborated in a recent interview: "It's physically not possible for water to go into a pit and remove (sand) and put it back into the water."


The Army Corps of Engineers, after surveying the affected stretch of the river in preparation for the dredging project, concluded that sand mines were not the main source of siltation.

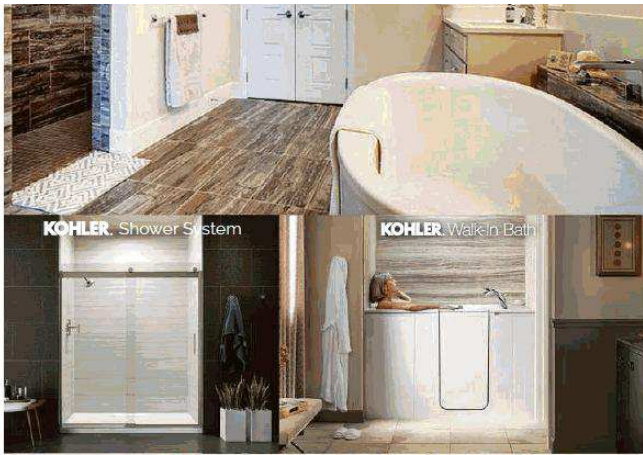
Michael Garske, a hydraulic engineer with the Corps, estimated that 65 percent of the sand clogging the river comes from



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ing on the coming project.

"My hope for the dredging is that it will save the community," Slaughter, an attorney, said. "I really believe that if there is the risk of flooding again, you will start to have abandonment. Businesses that have gone through this before will decide not to do it again."

Dredging of the west fork is getting underway ahead of other projects because the Federal Emergency Management Agency, which is funding it, designated it as an emergency need at the behest of state and local elected officials. This decision compressed planning and design procedures that typically take months or years into days or weeks.

"This project has been something else," said Eddie Irigoyen, a project manager for the Army Corps of Engineers. "We're going fast and furious."

By the time the job is finished next spring, the dredges will have extracted an estimated 1.9 million cubic yards of sand and sediment — more than enough to fill the Astrodome. The material will be deposited at two nearby sand pits.

A number of elected officials and community leaders blame the sedimentation problem on sand and gravel mines that

comprehensively the way in which these sand mining operations contribute sand and silt into the river," Abbott said, vowing tough enforcement of mining operations that failed to follow state regulations.

Data supplied by the Texas Commission on Environmental Quality, which regulates sand mines and other "aggregate processing" facilities, show that about 25 facilities licensed for this purpose are located along the west or east forks of the San Jacinto River upstream from Lake Houston.

Companies have gravitated to the San Jacinto to mine sand and gravel because the river is close to the booming Houston construction market, said David Perkins, president of the Texas Aggregates and Concrete Association.

Demand for sand and gravel, key ingredients in concrete, is growing around the world.

The role of sand mining in flooding along the San Jacinto River, however, is unclear. The sand and gravel industry quickly pushed back against accusations that its business was a major contributor to the problem.

"Some in the community are stating that sand mining operations along (the) San Jacinto are the source of the sand current-

ing the river came from Cypress Creek, which joins the west fork of the San Jacinto River just upstream from Lake Houston.

"The banks (of Cypress Creek) are sloughing off and falling in," Garske said during a June 11 community meeting in Kingwood. "That's where it came from."

Dupre, the UH professor, said pinpointing the source of the sediment would be very difficult.

"It's likely that sand mining has contributed an additional source of sediment," Dupre said. "What's difficult is determining how much it's increased the sediment load beyond what's normal."

Whatever its source, Lake Houston-area residents are eager for the sand to be removed.

Slaughter, the Kingwood attorney, said she has been encouraged by the swift and aggressive response to the flooding in her community. But she's worried that momentum will subside as time passes.

"Inertia is a very difficult thing to overcome," Slaughter said. "If there's a drought, people will forget. But the reality is, it's not going to take a Harvey to flood us again."

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