

SAND MAN AT WORK



Randy Tucker, above left, inventor of a device being tested in sand removal east of Momence explains it to on looks on the old State Line Bridge and to Bill Russell, right, a hydrologist with the Army Corps of Engineers, Rock Island District. At right, Seth Tucker, Russell and Randy Tucker place the wedge in the river.

Agencies try Sand removal

(Last of a series)

By Bill Byrns, Journal writer

Sand removal on the Kankakee River has begun.

No much, scarcely a bucketful in fact, but for the first time, a federal agency is taking a long hard look at a device that can move sand without disrupting the stream or its shoreline.

"We can pump up to 311 tons of sand a day," said Randall Tucker as he demonstrated a wedge-shaped device Friday near the State Line Bridge east of Momence.

If Tucker's estimate is correct, within a year his device could practically eliminate a massive sandbar that now chokes the river at the state line. The sandbar reforms annually and is estimated to contain 97,000 tons, according to Nani Bhownik of the Illinois State Water Survey.

Operation is simple enough. The wedge faces upstream, allowing the current to roll sand along the bottom of the river and up the sloping face into a collector screen on top. Sand falls into the collector. A pump forces the sand and water through a pipe toward a storage area on shore.

"We get about 20 percent sand output," Tucker said as spectators watched tests at the river on Friday and Saturday.

"That's much better than a dredging system that averages only about 15 percent," Tucker said.

If his Streamside Systems wins Army Corps of Engineers' approval, the device may be used in a removal project at the state line — an ideal test location, according to Bhownik.

Sand and the excess water would be pumped onto 67 acres nearby recently purchased by the Illinois Department of Natural Resources and the Kankakee River Conservancy District.

The area, a former bean field north of Lazy

Living Resort and west of State Line Road, will be restored to wetland.

Knee-deep in the river, Michael Hrzic shov-

Journal/Mike Voss

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eled sand on top of the wedge collector Friday effectively burying it in sediment. Hrzic, a hydraulic engineer with the Corps' Rock Island District, wanted to see how the collector would perform under stress.

Seconds after the generator rumbled into action, sandy sediments began to color the stream of river water that shot nearly 15 feet from the discharge nozzle.

"I'm looking at how it works in the river system," Hrzic explained. "Sediment removal systems are all different and hard to assess. For this project, what we are looking at is the unit's efficiency, what could possibly go wrong, and, of course, cost is always a consideration."

Actually what Hrzic was looking at this weekend is only a trial model, one component of a much larger system that Tucker believes is needed for the 250-foot-wide channel at the state line.

"What we need here are pre-cast concrete units. Each one is 20-feet wide, 10-feet long and 24-inches high," Tucker said.

By his estimate, 12-to-13 individual collectors would be needed to span the river.

"They can all be linked together. We can use a computer to control how much volume we pump and when we pump. The computer can

also be tied in with a flow meter that would adjust the pump according to the flow of the river."

In fact, Tucker and Hrzic checked the system at different volumes based of flow data from the U.S. Geological Survey.

"We can capture 100 percent of the incoming sand if we match the flow," Tucker said.

Hrzic says 100 percent is not necessarily desirable because the river needs a certain movement of sand.

For Tucker, the Kankakee would be a major test of his new system. "I've been working on this for five years it now. We have one system that's been working on the Pine River in central Michigan for the past two years."

The Pine, a National Scenic River known for its canoeing and trout fishing, is much smaller than the Kankakee. "We're getting about 91 percent on the Pine in an area where the river is about 20 feet wide," Tucker said.

Streamside's equipment is one of several sediment devices being examined by the Corps. "Modern technology has produced a number of alternatives to the old clam shell dredges used to remove sediments," explained Steve Russell, who heads up the state line project for the Corps.

With colorful names like water bugs, vortex tubes, and eddy pumps, the devices are all low-impact, operating more like wet-vacs as they suck or pump sand from the river.

"If this works, then we are looking at duplicating the results downstream," Russell said, adding that Indiana also is looking at duplicating the sand removal project.

For now, the Corps is still studying the best alternative. Actual sand removal work at the state line likely will not get under way in earnest until next year.

Still, for many of the locals watching the tests,

seeing sand actually withdrawn from the river promises an end to their over 40-year wait.

