

DRAINAGE DISTRICT NO. 6

Going with the flow

Drainage District No. 6 keeps water moving



DD6 waterway during cleanup



DD6 waterway after cleanup

Jefferson County Drainage District No. 6 (DD6) keeps water moving through a large part of Southeast Texas.

Established in 1920, DD6 serves approximately 40% of Jefferson County including Beaumont, Bevil Oaks, China, Nome, and the communities of Fannett, Northwest Forest, Hillebrandt Acres, Cheek and LaBelle, as well as farm and timber land in between. DD6 works hard every day performing the many tasks necessary to control storm and flood waters from rivers, streams, ditches and drains and reclaim overflowed lands. Over the years, Jefferson County has relinquished most of its flood control and drainage activities to DD6 for properties within the district, which covers an area close to half the size of Rhode Island.

DD6's responsibility consists of maintaining and constructing large outfalls, cutoffs, gullies, streams and

bayous that accept runoff collected through municipal and other local drainage systems and transport it out of the area.

"Our job is to maintain what we have and expand our system," explained DD6 General Manager Dr. Joseph Majdalani, a license professional engineer. "We accept the water and move it out of the area to minimize flooding, and we capture lost capacity."

According to him, DD6 has grown significantly since its formation in 1920.

"DD6 purchased its first drag line, mainly to clean up ditches, in 1931," said Dr. Majdalani. "At that time, the district was maintaining 114 ditches totaling 232 miles, and it covered 195,840 acres."

When the Army Corps of Engineers allowed DD6 to discharge water into the Gulf Intracoastal Waterway in 1942, it provided opportunity to

increase the area covered by DD6, and in 1943, the DD6 board decided to enlarge its boundaries to include rice farmers and ranchers asking for drainage assistance. That added a lot of area to DD6's coverage.

"Today, we have 1,247 miles of ditches versus 232, and we went from nearly 200,000 acres to a little over 320,000 acres," Majdalani described.

In addition to controlling area flooding and reclaiming overflowed acreage, DD6 carries out daily preventive maintenance that includes grass and weed cutting, the application of herbicides in agricultural areas, ditch cleanouts, care of concrete linings, earthen channel rectification and many other activities to protect and improve the environment.

DD6 does much more than mere maintenance. They perform new construction in-house, as well, and internally repair their myriad machinery, employing their own mechanics. With 85 permanent employees and 55 temporary employees, the district must still augment its staff with contractors to complete its numerous projects, ongoing and proposed. They are currently working on about 38 projects throughout their large district requiring bulldozers, excavators of various

sizes and other equipment in DD6's extensive inventory.

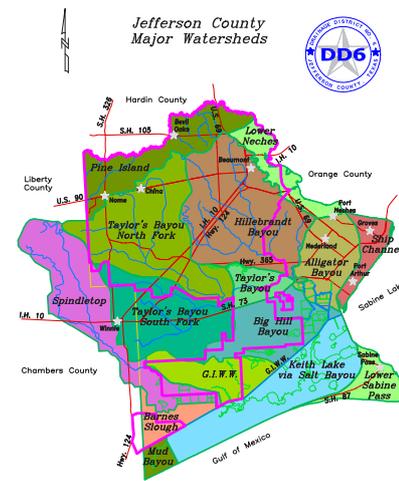
"We have a lot of equipment we use," said Majdalani. "We have 21 dozers, 13 trackhoes (or excavators), seven mini-excavators, 10 off-road trucks and about 20 on-road dump trucks and three draglines – one 4600

series dragline with a seven cubic-yard bucket (two buckets from which would fill a dump truck); one Link-Belt dragline with a one-and-one-quarter cubic-yard bucket; and a small dragline with a three-quarter cubic-yard bucket that are all used to dig in the ditches. We also have several small pieces of equipment, like generators, pumps, water trucks, mulchers for trees, herbicide equipment – there's so much small equipment we use."

We use a lot of skid steers, too," said DD6 foreman John Murff. "They're used for cleaning concrete line sections."

"We always have a maintenance program, but we step it up after a storm because storms put a lot of sediment and trash in our system that we have to remove," said Majdalani.

According to Murff, the skid steers are vitally important during post-storm cleanup projects, but the crew



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DRAINAGE DISTRICT NO. 6

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DD6

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must sometimes get up close and personal with clogged drainage pipes.

"Something we do work hard at is, after a big rain, we send out crews to all the bridges and major crossings that any debris could get caught up on," he explained. "Sometimes, we have to hand-dig it out. Sometimes, we have to get a machine and pull it out. For example, if somebody throws a mattress in a ditch or a stream, it floats downstream and gets caught in the pipe or blocks the pipe, and we have to go get it out" – one way or another.

The DD6 team has a wide array of challenges they must deal with daily to ensure proper drainage throughout the district. One of those is the "aging infrastructure," said Majdalani.

"The district was established in 1920," he said. "It's 2020 now. Twenty percent of our system is over 100 years old."

That means repairs and replacement of old pipes are constant, he explained.

Another big issue DD6 faces is the large amount of rain Southeast Texas sees.

"We receive over 60 inches of rain per year in this area, on average," he described. "That's a lot. Why is the rain a problem? Because it shuts down the whole operation. You can't mow grass. You can't dig. It shuts down construction."

And when it rains, it pours, so to speak. Majdalani and the DD6 crew then have the difficult task of managing flood waters where there exists flat terrain and unstable soil. The flat terrain in some Southeast Texas areas means those spots don't drain quickly. The unstable soil spells trouble for concrete pipes.

"In some areas, it shrinks and cracks when it's dry and expands when it's wet," said Majdalani. "This movement of unstable soil puts stress on the pieces of pipe. It puts pressure on – not just the pipe – the infrastructure.

"When you have a concrete one and it's dry, you can see the dirt pull away from the concrete. When it's wet, you can see it pushing up against the concrete. This motion affects everything."

While the DD6 area has gotten larger requiring additional labor and tools, the tax base itself is not increasing, said Majdalani, meaning the district isn't receiving additional monies for the additional work.

Another difficulty DD6 faces is access to private properties.

"Our biggest issue is right of way," Majdalani described. "We have 1,247 miles of ditches. Out of that, we have easement on approximately 785 miles. For the rest of it, we don't have easement, which limits our ability to maintain these ditches. What we do to try to overcome this is to acquire the easement."

If access is required to address a drainage issue, most property owners are willing to provide easement so DD6 can assist, he said, though a few are hesitant. He said he can assure them that DD6 just wants to help.

"The big picture is: We can't maintain it unless you give us easement, and if you give us easement, we will maintain it," he said.

DD6 continues to keep things moving and help Southeast Texans go with the flow. They have several upcoming projects to improve area drainage that will be detailed in future editions of The Examiner.

– Sharon Brooks