

BETTER MOUSETRAPS



Murfreesboro rehabilitation technician Ashley Hopkins enters pipe inspection data into the computer. Hard-drive data storage greatly enhances the city's inspection program. (Photo courtesy of Murfreesboro Water & Sewer Department)

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PRODUCT:

Cobra Information Management System (CIMS) relational database system

APPLICATION:

Hard-drive storage of pipe inspection data

BENEFITS:

Cost effective; eliminates hard-copy media storage and cataloging

USER:

City of Murfreesboro, Tenn., Water and Sewer Division

MANUFACTURER:

Cobra Technologies

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VIDEO ON DEMAND

Hard-drive storage improves speed, convenience, efficiency, and reliability for a Tennessee city's inspection data

By Dan Heim

The Water and Sewer Department in the City of Murfreesboro, Tenn., has made the transition from fragmented VHS sewer inspection tape records to a comprehensive hard-drive-based (HD) video information storage system.

HD storage made sense to Terry Taylor, operations superintendent. Murfreesboro is a fast growing area, and with many pipes still being inspected for the first time, Taylor's department was looking for the fastest way to catch up.

The Cobra Information Management System (CIMS) relational database system from Cobra Technologies is helping. "We used to have videotapes of just a few sections in the sanitary

system, but now we're quickly getting all our pipes recorded, including laterals," Taylor says.

Great strides

The technology is an example of how far inspection technology has come. There was a time when the only images of pipe interiors were Polaroid photographs. The first inspection cameras recorded to videotapes, which were supplanted in the late 1990s by CD/DVD storage systems. Hard-drive storage is the latest leap forward.

The cost of hard-drive storage has plummeted. One gigabyte (GB) of capacity — equivalent to 500,000 pages of text — now sells for about \$5, versus \$100 a decade ago. Today's buzzword

is "terabyte" (TB), which is 1,000 GB. With this much space available at low cost, hard-drive storage makes sense, especially when it eliminates the storage and cataloging of CDs or DVDs and allows multiple users instant, simultaneous access on network platforms.

The CDL 9000 Data Logger compresses raw video to an MPEG-1 format with a bit rate of 1.15 MB/s (10 MB/minute). Resolution is 352 x 480 pixels at 30 frames per second. Capture is done in real-time, via a dedicated hardware-based compressor built into the Cobra Data logger installed in the inspection van.

MPEG-1 accurately captures the detail provided by typical survey

Surprise! Data is Simple!



An example of a screen from the city's Cobra Information Management System. (Photo courtesy of Cobra Technologies)

cameras, says Alan Grant, Cobra CEO and national sales manager. Cobra provided Murfreesboro with the custom servers needed to store all its video data. "We purchased a separate 1.2 TB server to hold the video, and I'll probably up that to 4.2 TB at some point," says Brian Pollock, the city's IT coordinator.

Miles of pipe

One single terabyte can hold video data for one million feet (190 miles) of pipe. The servers use RAID 3+0 (Redundant Array of Independent Drives) to preclude the need for data backups. RAID employs multiple hard drives to store the same data. With this redundancy, only a simultaneous failure of multiple drives could cause data loss.

On the field input end, field units can be equipped with a fingerprint ID logon to ensure that only trained and authorized operators can access the system. "Engineers like this added security, since it ensures that the data is entered by a certified operator," says Grant. That is part of what NASSCO is trying to promote with the PACP Standard."

Integration of the Cobra system was easy for the city, says Pollock. "If you're computer literate, it's routine work," he says. "I just set up our access groups, mapped the network drives, and we were up and running.

Work is also going well in the field.

"Our guys really like the system," observes Bill Kemp, rehabilitation foreman. "They used to keep paper records, but this digital system is a lot better. Plus, the user interface is

"When you need to look at a video, the speed of this system is just amazing. It's saving us a lot of time and makes it easier to do our job."

Terry Taylor

simple. I wasn't computer literate, but it was very easy for me to learn. I started using it right away."

The department still has a library of VHS tapes from the early days but expects at some point to convert them to MPEG-1 for transfer to hard drives. The ease with which video files can be located and searched makes other storage systems seem archaic.

Says Taylor, "When you need to look at a video, the speed of this system is just amazing. It's saving us a lot of time and makes it easier to do our job." ♦



Do you have usable data? Do you have videotapes transferred to CDs and DVDs hyped as the latest and greatest? Do you and others have instant access to inspection information?

Or are you in an information gap regarding your infrastructure?

At Cobra, it's about more than just the inspection equipment. It's about DATA... the critical component in the entire inspection process. You are in the information business. You require information to do your job right. You need it at your fingertips - easy, manageable, analyzed and assembled into video files linked to your database - ask for nothing less. Now you can make informed decisions.

At Cobra, Data Is Not An Afterthought. It's Integrated Into Everything We Do.

**Contact us
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