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Rebuilding WTC area from the ground down

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Five blocks south of the smoldering mounds of rubble at Ground Zero, an unimpressive bump of pavement — rising only slightly higher than the sidewalk — is spray-painted with a glaring warning.

"CAUTION * HIGH VOLTAGE"

The innocuous bump extends about 5 feet along Washington St. before disappearing into a narrow wooden box that snakes its way around the perimeter of the destroyed World Trade Center.

In the rush to restore electricity after the terrorist attacks, Con Edison laid 36 miles of high-voltage cable above ground and capped the lines with boxes or asphalt. The power company essentially circled the disaster area with a giant extension cord to bypass substations destroyed by the falling towers.

Verizon had the same idea, stringing telephone lines along the streets to subterranean switches not buried by debris.

The fixes were successful, but temporary. In recent weeks, the utility giants have moved aggressively to rig a permanent solution.

The entire underground telecommunications and electricity network in the Financial District must be rebuilt. That means ripping up about 24 streets from Barclay St. to Battery Place to repair and install electrical and telephone conduits.

"This is like nothing else before," said Joe DeMauro, Verizon's regional president.

More than 300,000 telephone lines were severed. About 13,000 customers lost power. Nearly 6 miles of water mains broke.

The final repair tab will come to at least $2.3 billion, based on estimates by Con Edison, Verizon and the city Department of Environmental Protection, which manages the city's water supply.

Insurance will not cover all the costs, and customer rates could rise to pay for the repairs and technology improvements, officials said.

Paul Crotty, Verizon group president for New York and Connecticut, told an Assembly hearing yesterday that the company hopes to receive special tax credits. He said Verizon hasn't considered "rate increases that might be necessary."

Gov. Pataki has vowed to set aside $900 million in federal aid for infrastructure repairs. But it was unclear how much of that would be available to Verizon and Con Ed, Public Service Commission Chairwoman Maureen Helmer told the panel.

'A complete rebuild'

But by any measure, the task ahead is enormous.

"This job is a complete rebuild," said Arthur Corvese, Con Ed section manager for Manhattan construction.

"On these narrow streets, there is only one way to do it," he said. "You shut down the street, rip out all of the old stuff and then figure out how to make everything fit."

To prevent individual streets from being closed multiple times, the mayor's Office of Emergency Management and an infrastructure task force from the Federal Emergency Management Agency are coordinating the repairs.

However, no single agency maps the entire underground, so the utility companies must consult their own maps, examine historical documents and do a lot of sleuthing. New radar technology that essentially takes sonograms of the city's underbelly will help workers determine where buried pipes and cables run before the streets are torn up.

"You dig, then design, then rebuild — in that order," Corvese said.

Con Ed has 252 active construction permits in the disaster area. Its largest dig is on Rector St.

The four-block stretch is closed to traffic, and the paved surface has been torn out in big chunks. Eighteen-foot timbers cover the city's complex underpinnings when workers aren't toiling in the hole.

While buildings in that part of the city reach into the clouds, it couldn't be more different underground. Con Ed hardhats could dig down only about 8 feet before reaching sewer lines and a 100-year-old water main that runs above the subway tunnels.

Everything — electrical conduits, copper and fiber-optic phone lines, manhole shafts, television cables, gas pipes and a new 20-inch water main — must be squeezed into the shallow space between the sewers and pavement.

"If we had 60-foot-wide streets, everything would have an obvious spot," said Tom Fetter, a Con Ed construction boss. "This is crowded. This is about as bad as it gets."

Two new substations

Con Ed officials hope to replace the temporary aboveground cables with buried lines by May 1. The conduits will be routed to a giant new substation on South St. that will replace

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one of the two destroyed when the towers collapsed. Another substation will be built by 2003.

Verizon's giant call-switching center at 140 West St. was severely damaged when the towers and 7 WTC, which was across the street, collapsed.

A thick layer of debris and power outages temporarily knocked out giant switches — the brains of the network that routes phone calls. Flooding overwhelmed compressors in the basement that are responsible for keeping the underground copper and fiber-optic lines dry and working.

The monolithic building is still mostly cordoned off. Verizon has draped copper lines out the windows of two floors to connect switches inside the building with subterranean lines on the adjacent streets.

The majority of the below-ground repairs need to be made under Barclay, Washington and Vesey Sts. More than 120 cables come together in the area. As many as 3,600 phone lines can run through one cable.

"We have begun to dig up Washington and Barclay," DeMauro said. "We still don't have access to Vesey because of debris."

A 30-ton girder from 7 WTC fell to the earth like a javelin and destroyed an underground cable block on Barclay St. that connected to the call-switching center.

"We had to dig below the girder, cut it and pull it out piece by piece," DeMauro said. "The last piece is still embedded down there. We can't budge it."

Buried seven decades

Some telephone cables being yanked from underground haven't seen daylight for 70 years.

"The oldest ones are in lead sheathing and were pulled through [the buried conduits] by horse and buggy," said Edward Coyle, a Verizon splicer.

Telephone technicians still haven't been able to get into six manholes to examine cables directly beneath Ground Zero.

Service also remains sporadic in Chinatown, where cables split into very few phone lines and must be repaired one at a time.

Verizon continues to deal with about 7,000 troubles — customer complaints about service disruptions. Before Sept. 11 the troubleshooting list usually got no higher than 2,000.

"The trouble load is coming down. It is not coming down as quickly as we would like," said Crotty. "We ask for patience."

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