

# Microtrenching Goes Mainstream

Under the right circumstances, it offers several advantages over macro-trenching, including cost and time savings.

By Rollie Cole / *Sagamore Institute for Policy Research*

**M**icrotrenching – using microtrenches just 1 to 3 inches wide and 5 to 12 inches deep – has become a mainstream method for installing fiber, and many network operators use it successfully under certain conditions. That was the main takeaway from a one-day conference I attended in Austin, Texas, in May.

Dura-Line's Technology Summit 2019: MicroTrenching was organized to shed light on how microtrenching is being deployed in several cities around the country, including Austin, Texas; New York; San Francisco; San Antonio; and Charlotte, North Carolina. In these places and others, city planners and engineers use the technique to leverage overcrowded utility corridors in right of ways, providing more high-speed broadband services to meet the demands of the growing population.

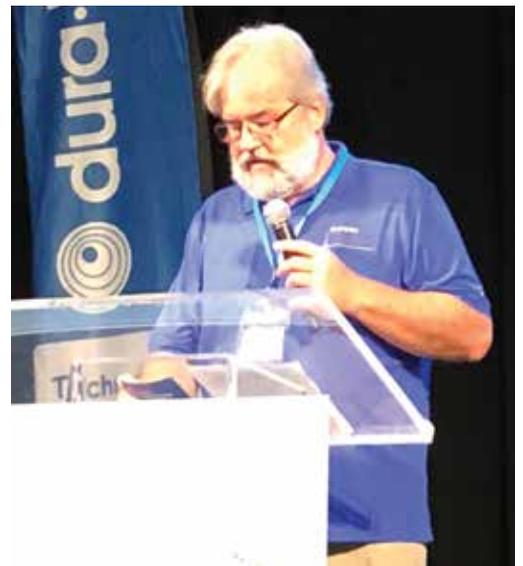
The conference featured an impressive array of speakers, including city mayors, engineers, suppliers and deployers, who described the advantages of microtrenching – and how and when to use it.

## MICROTRENCHING IN ACTION

Steve Adler, the mayor of Austin, said his city already has four different organizations deploying fiber to the home. A mayor from New York state spoke about a soon-to-launch project that will use 1 million feet of fiber optic cable to reach every one of his city's 20,000 residents.

An engineer from Douglas County Public Utility District (PUD) in Washington state described a three-year study of various microtrenching techniques his district recently completed. It plans to use microtrenches to complete the buildout of fiber to "every reasonable site" in its service territory.

Suppliers spoke about the products they offer for microtrenching and where they think



Tim Grimsley, vice president of Global Customer Engagement at Dura-Line, welcomes attendees to Dura-Line's Technology Summit 2019: MicroTrenching.

those products might best be used. Deployers, including Verizon, talked about the advantages of microtrenching as one of the tools in the toolbox, along with macro-trenching and overhead wires. Verizon described the standards it created to make microtrenching consistent across all its deployments. The company does not always use microtrenching, but when it does, it employs the same standards, procedures and materials.

## SPECIALIZATION IS KEY

Specialization was the theme of the day. Conference speakers, demo leaders, and exposition staffers heralded microtrenching for requiring less than half the cost and time of macro-trenching, causing almost none of

the disruption and producing very quick drying times for the reinstatement materials.

Importantly, microtrenching is not appropriate in some situations. It works best when the techniques and materials are matched to the situation. For instance, conduit to be placed with other pipes requires macro-trenching; conduit across open fields can often be buried with a special plow that lifts a flap of sod and soil and puts its back down. In some places, particularly those with existing poles, aerial cables are the best solution.

I heard two vivid examples. The first involved the conduit where the fiber strands are placed, either at the time of conduit installation or later. In the prairie dog fields of the West, vendors discovered that prairie dogs chew on conduit less than 1.5 inches in diameter but leave bigger conduits alone. In the squirrel-hunting regions of the South, conduit strung in the air needs to be

armored against buckshot because squirrel hunters often shoot at squirrels sitting on the aerial cables.

The second example of specialization involved the process called “reinstatement,” in which the installer refills the microtrench with material that protects the conduit, will not sag or bubble either upon installation or over time and attempts to match the color and texture of the material beside the trench. Douglas PUD is doing this successfully – it uses gravel, some excavation material, special treatment such as tamping, and a surface material identical to the material beside the trench. For instance, it uses concrete for concrete roads, asphalt for asphalt roads and gravel for gravel roads.

Three firms at the conference developed their own materials and processes for putting conduit in place. One firm, GCP Applied Technologies, uses a cold process and feathers the

edges beside the trench. A second firm, Crafcro, uses a hot process (the material is heated and installed hot) and creates clean edges with masking tape. In a live demo, these two firms showed the largely manual process for reinstatements of short length. A third firm, Corbel Communications, is a general contractor for broadband projects and the inventor and supplier of a specialized material for reinstatement. It, too, has its own processes and materials for burying conduit. These firms have more automated processes when reinstating large lengths of trench.

### A SIGN OF PROGRESS

For microtrenching in particular and fiber deployment in general, one can track progress in the industry by the degree of specialization in both products and processes. At first, deployments followed practices and used products from other utilities,

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Photos by Rollie Cole

Macrotrenches are created with a backhoe and run 2 or 3 feet wide and up to 8 feet deep. Microtrenches are created with a specialized blade and are just 1 to 3 inches wide and 5 to 12 inches deep.



A demonstration of “reinstatement,” the refilling of microtrenches after the conduit has been placed in it. Corbel Communications, which hosted the conference at its Austin, Texas facilities, is one of three suppliers, along with Crafcro and GCP Applied Technologies, that has invented specialized material for reinstatement.



The highlight of the conference was a series of live demonstrations of microtrenching techniques, including the sawing of a trench, the placement of conduit, and the use of various materials for reinstatement.

such as the macrotrenches and metal conduit used for water, electricity and natural gas.

Then the industry began to develop items optimized for fiber optic cable – plastic conduit, specialized trench blades and special reinstatement materials. Industry players learned specialized processes not only for each new material, but also for each new situation. They adapted based on different ground conditions (good

and bad pavement, shallow and deep underlayment) and different climates (extremes of hot and cold, wet and dry).

The specialized knowledge and products presented at this conference encouraged me to think that the fiber-to-the-home industry is maturing rapidly. ❖

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The conference featured a demo of reinstatement of the road surface after microtrenching.