

Microtrenching: What I Wish I'd Known About New Techniques for Broadband Construction

May 22, 2024

Microtrenching is a method of installing underground utilities that can be faster, more cost-effective, and less disruptive. However, micro-trenched utilities are also more vulnerable to damage from traffic loads, soil movement, and root intrusion. This session looked at cities' experiences with microtrenching by both private and public broadband providers and lessons learned. With \$65 billion in IJA funding for broadband deployment spurring a new wave of private investment to connect unserved and underserved communities in cities and beyond, cities will need to manage microtrenching as implementation of projects by network providers moves forward.

Key insights from the discussion included:

Outreach can pave the way to deliver on microtrenching's promise.

With the potential for faster, less disruptive, and more cost-efficient deployment of high-speed Internet infrastructure, microtrenching holds enormous promise for cities and towns. However, city officials responsible for maintaining roads need to balance these priorities with potential impacts on pavement condition—both short-term (e.g. subsidence or failure of overband materials) and long-term (conflicts with future milling and paving operations). And while microtrenching promises less construction disruption than conventional methods, residents must be made engaged and educated about how the process works.

As Ian Linssen, Assistant to the City Manager, City of Mesa, Arizona explained, early engagement with city engineers led to requirements that network providers employ backfill and overband materials already familiar to officials, with well-understood effectiveness in the city's desert climate. Rory Rowan, Right of Way Permit Review and Special Projects Manager for Nashville DOT explained how requiring Google to distribute essential information to residents via door hangers ahead of construction helped improve understanding of the project's overall benefits to the community. Notices detailing upcoming construction are also relayed weekly to the city's councilmembers to empower them to address residents' concerns.

Microtrenching: What I Wish I'd Known About New Techniques for Broadband Construction

Coordination (and documentation) is king.

Many jurisdictions have “one call” laws that require utility companies to mark out existing infrastructure when requested. But even when this process works as designed, markouts typically don't indicate depth. In Nashville, where Google has 10-12 microtrenching crews laying thousands of feet of cable daily, markout teams must work at a furious pace. As Rowan explained, to stay ahead of potential conflicts, Nashville DOT conducts a weekly all-hands meeting with all major utilities to identify potential construction conflicts in a 2-week look-ahead window. Moreover, subcontractors are required to undergo special training, photograph all one-call markings before digging, and then take a video recording of the restored street after construction is complete, providing evidence for addressing any future road degradation.

Links from the Conversation

- Market-Driven Fiber Deployment [Case Story](#)—Mesa, Arizona (*Local Infrastructure Hub*)
- Mesa's [rights of way standards](#), including microtrenching
- Broadband Equity, Access, and Deployment (BEAD) Program [information page](#) (*Local Infrastructure Hub*)
- BroadbandUSA maintains a [comprehensive guide](#) to federal funding sources for broadband planning, digital inclusion, and deployment projects (*National Telecommunications and Information Administration*)

About the Tech and Innovation Center Series (T&IC)

The T&IC series is dedicated to helping local leaders navigate and understand the large quantities of information from the federal government on the nearly 400 funding opportunities available through the Bipartisan Infrastructure Law. The 2 year series is focused on how cities can leverage technology to improve their federal infrastructure funding proposals during 2023 and 2024. Programs focus on helping cities improve their proposals in response to Notices of Funding Opportunities (NOFO's) by adopting state-of-art technologies, expanding their technology capacity, and integrating aspirational technology “moonshots” for their cities.

The Series is produced by the Jacobs Urban Tech Hub at Cornell Tech and U.S. Digital Response(USDR)aspartoftheLocalInfrastructureHub,apartnershipoftheUSConferenceofMayors,NationalLeagueofCities,ResultsforAmericaandDeliveryAssociates supported by Bloomberg Philanthropies, Ballmer Group, Emerson Collective, Ford Foundation, and the Kresge Foundation.