

# Frequently asked questions about 5G installation and narrowband trenching

**Verizon is building its 5G network, bringing faster connectivity to cities around the country. A new construction method, narrowband trenching, can reduce disruption from installation and speed up the work.**

We know you may have questions about this new technique. Here are answers to some of the most common ones.

## 1. What is narrowband trenching?

It is a type of trenching that creates cuts wide enough for trunk line conduits or multiple conduits, using common cutting and restoration techniques. But the cuts are smaller than typical street openings, which are often three feet wide by five feet deep and require a conduit pack and street restoration.

## 2. Why would a city want to use narrowband trenching?

It is a faster, lower-impact method that has the following advantages:

- The construction process (digging, conduit placement and slurry backfill) typically happens in one day, which reduces traffic disruption
- Since the trench is so small, it requires less restoration work compared with traditional trenching
- Traffic effects are usually limited to a single lane closure
- Steel plates in the roadway are not required
- A vacuum unit trails and collects debris, resulting in less disruption to local businesses and residents
- It works well in crowded aerial attachment spaces, downtown central business districts that have aesthetic requirements, or areas that have limitations on traffic interruptions

## 3. How does narrowband trenching compare with traditional trenching?

Traditional trenching involves making larger cuts in the roadway using bigger equipment—excavators, dump trucks and skid steers, for example. Narrowband trenching uses smaller equipment for less time, causing less impact on traffic and the right of way. The ground below the street is exposed for a shorter period, resulting in less damage to the roadway.

## 4. How does narrowband trenching equipment work?

The process the first day involves a vacuum unit, cutting machine and cement slurry backfill unit. The trench is typically dug 16 to 26 inches deep, with the goal being to avoid most existing utilities. It is normally 8 to 9 inches offset from concrete gutters. A vacuum system collects debris, resulting in less dust and no extra dump trucks or backhoes to dispose of spoils. Grinding and capping are done during a second day of work.

## 5. Are there cities where we might see utilities placed less than 30 inches deep?

Most cities require a utility to be at least 30 inches deep, but some utilities (including some of ours) were placed at less than 20 inches. Verizon performs all pre-field work and, as with any other trenching or directional boring project, Underground Service Alert (USA) identifies buried utilities and aids us in working around them.

**6. Why should I trust this new construction technique?**

In Los Angeles, Verizon has deployed 45 miles of fiber using narrowband trenching, while the industry as a whole has done 85 miles of narrowband trenching. The material will rest below street grade level, and the trench lies in an area where disruption is extremely unlikely to occur.

**7. If the standard changes in a city, do we need an ordinance change?**

It depends, but based on our experience, public works departments are often able to make the changes without an ordinance change.

**8. Is this the same as rockwheeling?**

While narrowband trenching is similar to rockwheeling, there are significant differences. The big difference is that with narrowband trenching, a vacuum attached to the saw catches the spoils, whereas rockwheeling ejects them. A rockwheel trencher is a more abrasive machine than is needed for our purposes and has no shielding to prevent debris from flying.

**9. How many bags of slurry are used with narrowband trenching?**

On average we use two bags, but we are flexible to meet each city's standards. We have cities where we use half a bag and others where we use four bags.

**10. Are bike lanes accessible during narrowband trenching?**

While the work is being performed, bike lanes will be closed.

**11. Are residential driveways blocked during narrowband trenching, as with other traditional methods?**

Generally, no. The cut is so thin that vehicles can drive over the trench even before it is sealed.

**12. Is the trench open until the restoration is performed?**

Generally, no. The trench is sealed all the way up with slurry. We will grind it down and perform the cap and street restoration within a few days. Timelines for this service depend on the city. Usually we perform street restoration within three days. It's important to note that even before the worksite is fully restored, the street is fully accessible and functional, including the bike lanes, with no gaps or steel plates.

**13. What is the biggest challenge limiting the length of trenching that can be completed in a day?**

The trucks that collect the spoils from the vacuuming are the limiting factor. It's essential the vendor accounts for this variable and has the right number of trucks onsite for continuous work to meet maximum efficiency.

**14. Will the conduit placed via narrowband trenching be damaged by street restorations in the future?**

Generally, no. The conduit is placed under the street base and should not be at risk during future street restorations.

**15. Can narrowband trenching be performed in cities with very rocky soil and variable soil conditions?**

Generally, yes. Different blades can be attached that allow us to adjust to each soil type, including rock.

**16. Can narrowband trenching be used on concrete streets?**

Generally, we avoid using narrowband trenching on concrete streets.

**17. Snow or ice may impact street conditions. Is this an issue with using the technique?**

Generally, no. Snow and ice should not interfere with the method. Unlike open trenching, where the substructure of the road is exposed to the elements for extended periods, narrowband trenching mitigates that risk and exposure because it is sealed with slurry the same day. Other companies whose microtrenching resulted in problems were working at depths that were too shallow or using a subpar sealer.

**18. What is the maximum depth for narrowband trenching?**

Twenty-six inches is the maximum depth at which vacuuming can be efficiently performed.

**19. In other trenching methods, consistent depth is a challenge. Does narrowband trenching have the same issue?**

Unlike traditional methods, narrowband trenching is highly consistent. A guide on the saw keeps the depth consistent and does not allow for bouncing. Also, a technician follows behind taking measurements to ensure that the depth is steady.

**20. Do we need a soil expert to ensure a 95% compaction rate, per some cities' standards?**

Check with the narrowband trenching vendor on whether there is an opportunity to have an expert onsite for the trial project. You should not need an expert at all locations, just the trial location. Vendors will use city standards for asphalt and slurry backfill compactions.

**21. Are new permits necessary for the trial?**

It is best to use an active permit for open trenching for the trial site. That way, if the trial fails, you can just perform the open trench without harm, and there will be no added delay in obtaining additional permits. The open trenching permit can be redlined and adjusted to address the change in scope. Coordinate among the contractor and the proper city departments to ensure teams are aware that a trial deployment is taking place.

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**22. Is potholing performed for narrowband trenching?**

Yes, potholing is done for narrowband trenching as it would be for traditional methods.

**23. In which communities has this method been used successfully?**

In Los Angeles and Orange County, California; Nashville, Tennessee; Hartford, Connecticut; and Charlotte, North Carolina, to name a few.

**24. How does this differ from previously deployed microtrenching efforts by other internet service providers (ISPs)?**

Narrowband trenching is generally farther from the surface, up to 26 inches deep. Previous microtrenching efforts have been as shallow as 3 inches from the surface.

**25. Where can I learn more about narrowband trenching equipment?**

This website has more information:  
<https://www.ditchwitch.com/trenchers/micro/mt16>