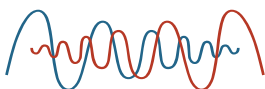


FREQUENTLY ASKED QUESTIONS SMALL CELL POLES



Necessary infrastructure for cellular technology



SDN COMMUNICATIONS®

www.sdncommunications.com

Q: What is a small cell, and how will it benefit me?

A: Many of us have experienced the frustration of trying to text a photo or pull up a website when we're at a crowded event or in an area with a weak mobile data signal. While that's a momentary frustration, lack of data capacity could become a matter of public safety as 911 systems begin to accept emergency text messages and videos. That's why SDN Communications is deploying small cells for Verizon Wireless in many communities. The new technology will improve data coverage in areas where crowds gather or there is a geographic gap in service. Unlike the large macro cell towers that deliver service coverage for up to 40 miles, small cells enhance data capacity in targeted areas up to 1,500 feet. They're most often used in areas crowded with many cell phone users, such as schools, colleges, fair grounds, downtown shopping districts, or hospital campuses. This technology improves capacity for users in high-density areas and can have far-reaching benefits for a community by relieving data congestion on a macro tower.



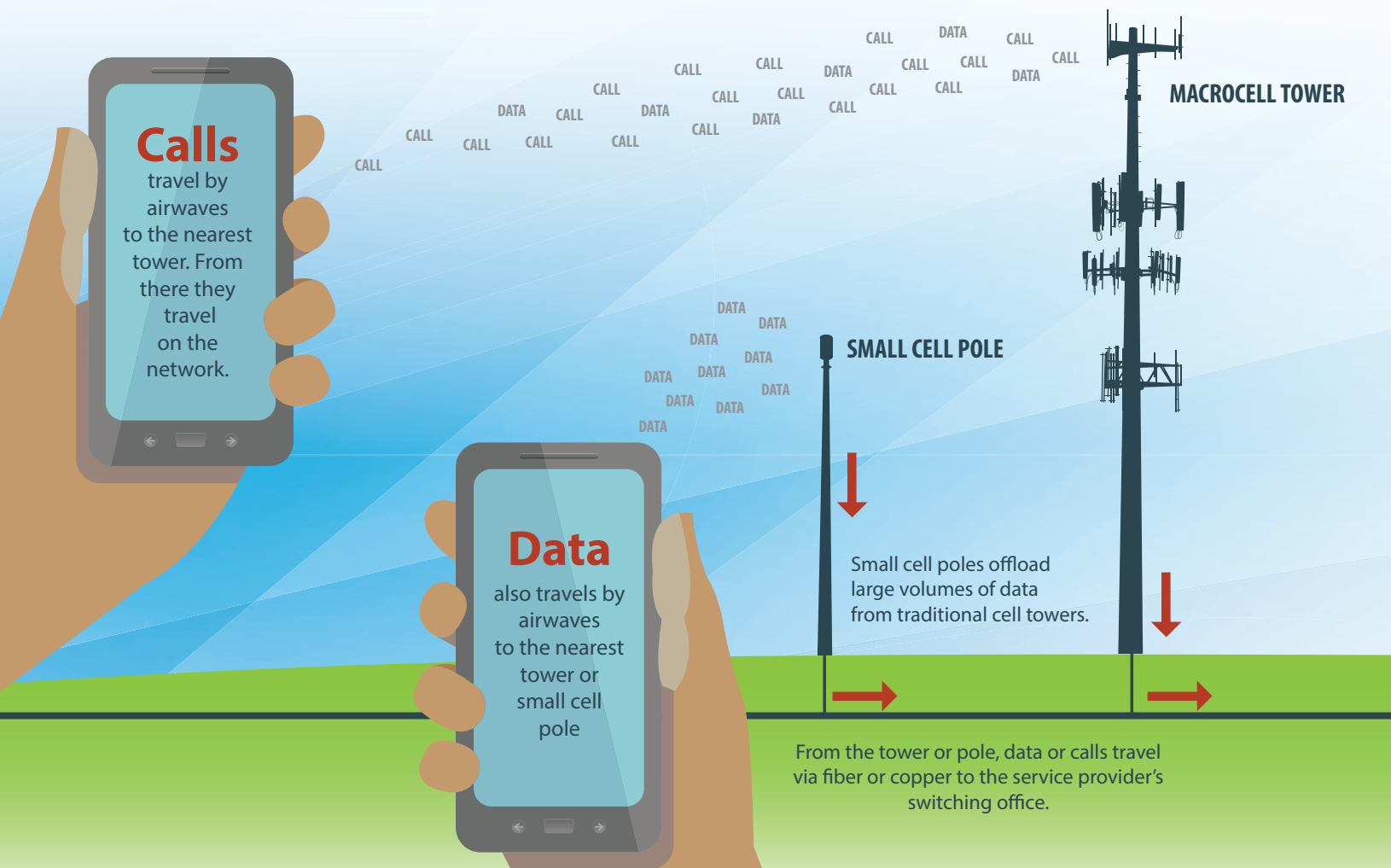
Q: What do small cells look like?

A: SDN Communications is working with Verizon Wireless to deploy small cell technology. The equipment is mounted on 32-foot, metal poles. The majority are being placed along the public right of way, which is where other public utilities, such as street lights, electricity, telephone, broadband, water, and sewer are placed. The small cell poles are similar to light poles lining city streets.

Q: What is the benefit of small cell technology?

A: Small cells improve the speed and reliability of mobile wireless coverage. Increasingly, people rely on their mobile devices to surf the Internet, watch video and access data-rich applications. By 2019, the wireless industry expects mobile data traffic to be six times greater than 2014, according to the Cellular Telephone Industries Association (CTIA). More wireless infrastructure is needed to meet this explosive growth.

Small cells are an essential layer of wireless infrastructure and are needed to deploy 4G wireless technology, which can offer speeds up to 30 Mbps. That's faster than most public Wi-Fi. 4G LTE can even top the speeds many people receive at home.



Q: How does small cell technology support emergency communication?

A: Americans rely on their mobile devices for emergency communication. Small cells are essential to support Next Generation 911, which will enable users to text and send photos and videos to first responders. In addition, many schools and employers use texts or emails to send emergency notifications. Small cells are necessary to support the delivery of vital, lifesaving mobile communication.

Q: What is a public right of way?

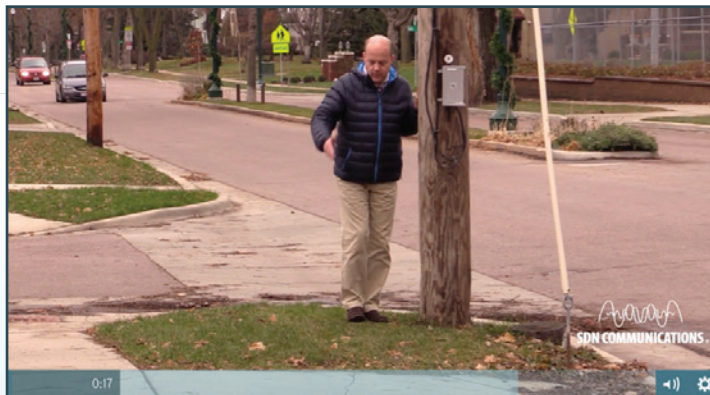
A: Typically, the public right of way is a narrow strip of land next to the street including the sidewalk. Sometimes it's called the boulevard. That land is maintained by the homeowner but technically owned by the public and reserved for utilities, such as street lights, electricity, telephone, broadband, water, and sewer infrastructure. Local governments, not the homeowner, decide which utilities are allowed in that public right of way.

Most of the small cell poles SDN will deploy will be in that public right of way. SDN is an existing broadband provider in these communities and will leverage existing, underground fiber optic cable to support the small cell deployment.

Q: Will my boulevard landscaping be damaged during the small cell install?

A: Small cell pole installs should have minimal impact on the landscape. SDN's professional contractor has a good reputation and fixes any damage done.

For more information about small cells and public right of way, check out this video:
<https://sdncommunications.com/small-cells/>



The boulevard or narrow strip of land between the sidewalk and street is the public right of way, which is where most small cells will be deployed.

SMALL CELL POLE

Small cell poles are
32' tall.

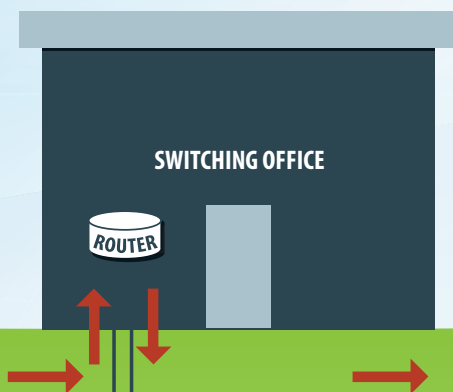
1,500 feet:
the typical
coverage of a
small cell pole

MACROCELL TOWER

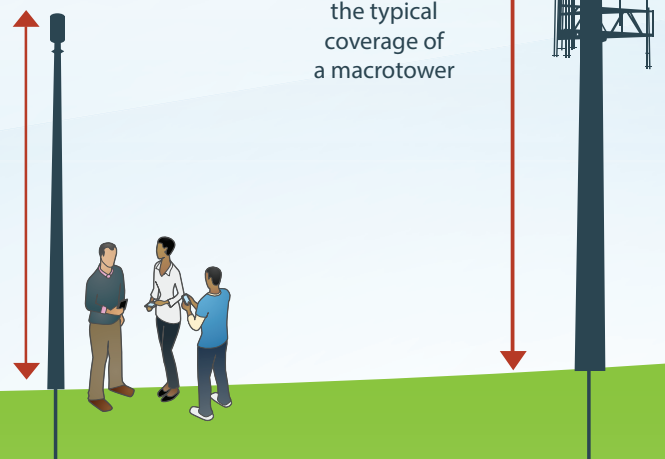
Towers vary in height, but are often

200' to 300' tall.

22 to 40 miles:
the typical
coverage of a
macrotower



From the switching office, the data or calls are directed to the tower nearest the destination cell phone.



Small cell poles improve data traffic for better phone service in locations with heavy traffic such as college campuses, fairgrounds and downtown shopping venues.

Q: Why is it necessary to erect new poles? Why can't the small cell equipment be mounted to existing light or telephone poles?

A: The small cell equipment is heavy and requires a structurally sound pole and foundation. The base and pole of existing structures would likely need to be replaced to support the heavy equipment. Small cells support essential 911 service and require immediate response if the equipment is damaged or needs repair. SDN selected a uniform, 32-foot monopole design to provide consistency and direct power access to enable quick and efficient service, repair and maintenance.

Q: Can the small cell poles support multiple wireless carriers?

A: Yes, SDN's small cell poles can accommodate up to two wireless carriers. Colocation of small cell equipment can reduce the need for additional poles, while simultaneously meeting the data coverage needs of mobile users.

Q: Is small cell technology coming to my community?

A: SDN is currently working with the communities of Sioux Falls, Yankton, Brookings, Aberdeen, Sturgis, and Sioux City to deploy small cell technology. If your community isn't on this list, it could be in the future. As mobile data traffic continues to grow, it is likely more communities in the Northern Plains will be selected to receive this next layer of wireless infrastructure.



About SDN Communications

SDN Communications is based in Sioux Falls, SD. The company is the premier business-to-business broadband service provider in the region, with more than 30,000 miles of fiber optic cable that extends into eight states of the Northern Plains. SDN also provides the managed cybersecurity products and remote network monitoring to build a more secure business network. SDN is owned by the independent telephone companies in the region.

If you have further questions, please contact SDN Communications at **1-800-247-1442**.

