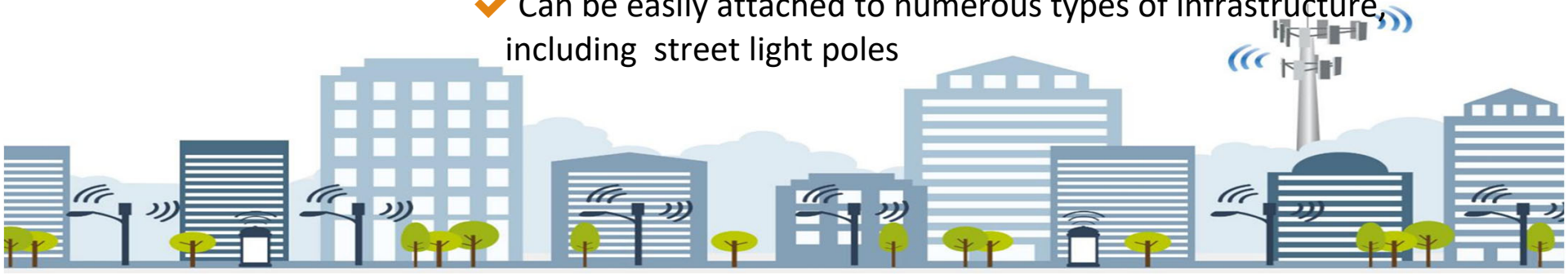
Small Wireless Facility
5G Technology

What are Small Wireless Facilities (SWF) or Small Cells?

Small Wireless Facilities, SWF, also called Small Cells are the next generation of telecommunications technology. They are made up of antennas and radios that transmit Radio Frequency (RF) signals. All Carriers use 4G and 5G small cells to deploy their technology.

Small cells:

- ✔ Activate high-band spectrum and alleviate dependency on large macro tower sites
- ✔ Fill coverage gaps and increase capacity in densely populated areas
- ✔ Drive new applications
- ✔ Can be easily attached to numerous types of infrastructure, including street light poles

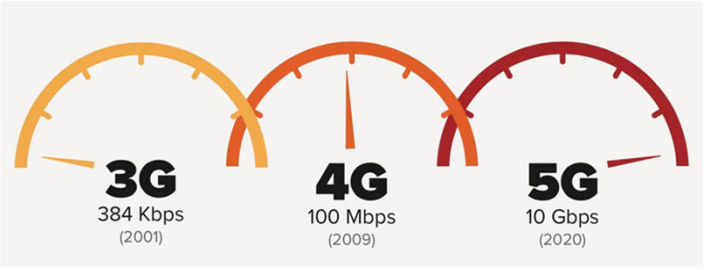


Why do we need 5G?

Wireless densification is required to address usage levels

5G requires additional density of antennas, high-band frequencies, and wireless connection nodes

Data traffic is driving capacity and network upgrades

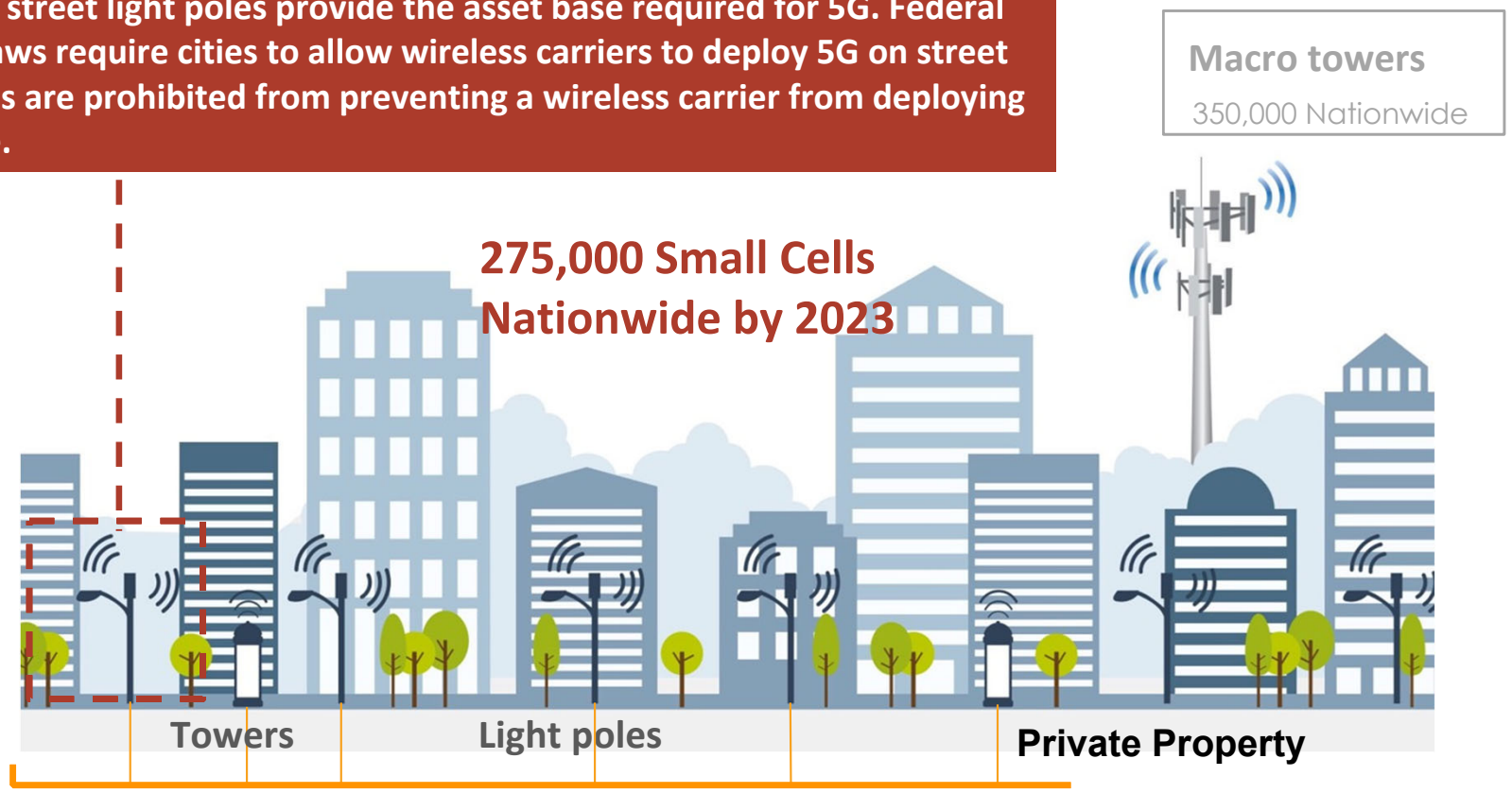


3G, 4G, 5G Evolution

- ✔ Small cells activate high-band spectrum and alleviate dependency on large macro tower sites
- ✔ Small cells fill coverage gaps and increase capacity in densely populated areas
- ✔ Small cells can be attached to utility poles, street light poles or traffic signal poles

Where will Small Cells be deployed?

City-owned street light poles provide the asset base required for 5G. Federal and State laws require cities to allow wireless carriers to deploy 5G on street lights. Cities are prohibited from preventing a wireless carrier from deploying on any pole.



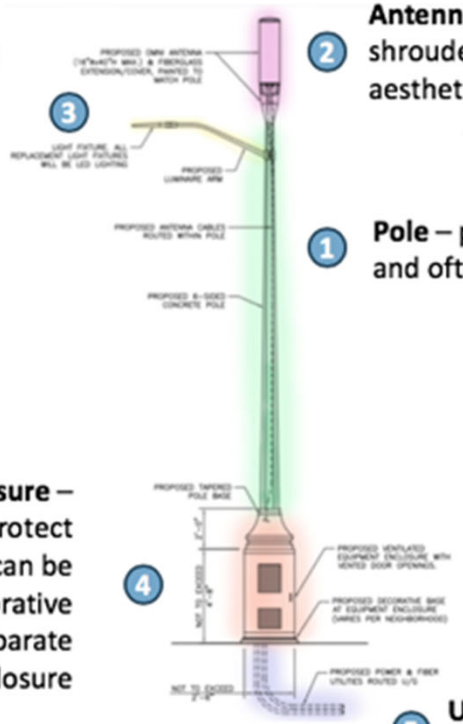
Small Cell Deployment in St Louis City

St. Louis City Approval Process for Small Cells

The City reviews all small cell applications in conjunction with Federal and State laws, as well as our City Ordinances. The Board of Public Service (BPS) is the responsible entity for permitting any infrastructure, equipment or construction in the public right of way. Applicants for installation of small cell infrastructure in St. Louis must obtain a permit. Permit Applicants must meet the requirements set forth in the design guidelines along with other terms and conditions set by the Board of Public Service.

City of St. Louis Standard Pole

Lighting – refers to both lighting fixtures and luminaire arm (shaft attaching light to pole)



Antenna – transmits signal; usually shrouded for protection and aesthetics

Pole – provides height for broadcasting and often conceals cables

Equipment Enclosure – encases equipment to protect and hide it from view; can be concealed in a decorative base, side mount, or separate ground enclosure

Utilities Router – connects to power and backhaul (fiber)

WHY THE CITY HAS DESIGN STANDARDS

(Small Cell Deployments Without City Input)

Santa Rosa, CA

La Mesa, CA

St. Louis, MO -
Ameren Utility Pole

Small Cell Deployment ***with*** *City input:*

Reduce visual blight and pole clutter;

Manage wireless deployments on municipal assets;

Aesthetically appealing with concealed hardware;

Provides pole design consistency among carriers and safety.

Small cell pole installed outside City Hall on Market Street.

Q & A

Why can't cellular infrastructure be combined onto one pole?

- The siting of small cell antennas is primarily determined by the wireless provider's service needs. Each wireless provider has different objectives and may not need the same locations. Each carrier, who owns rights to a spectrum of operating frequency, states that some separation with competing antennas is necessary to avoid signal interference.

Do Zoning regulations oversee the placement of small cells?

City Zoning Ordinances govern where poles may be located on private property. The Board of Public Service oversees the placement of poles in the city right-of-way.

Safety Concerns

The City does not have any authority to deny installations of small cells based on health concerns, as stated by the Federal Communications Commission (FCC). The FCC preempts cities from denying any small cell permit based on health concerns or the environmental effects of radio frequencies under Section 332(c)(7) of the Communications Act.

Where can I find more information?

Federal and State Laws on Small Cell Infrastructure.

Wireless infrastructure is subject to the parameters of Federal Communications Commission (FCC) and State laws. Missouri State House Bill 1991 and FCC 18-133 Order issued in early 2019 mandates wireless providers have the legal right to locate small cell equipment in the public rights of way of Missouri.

FCC 18-133 Order issued quick summary

- Applies shot clock rules;
- Review of an application to collocate a Small Wireless Facility using existing structure: 60 days;
- Review of an application to deploy a Small Wireless Facility using a new structure: 90 days;
- Construction of new facilities other than small wireless facilities 150 days to review;
- Incompleteness determination must be made by the 30th day after an application is filed, and within 10 days after resubmission if a re-submitted application is still incomplete.

City of St. Louis Ordinances – 70892 and 70913

Establishes procedures and requirements relating to the collocation and deployment of small wireless facilities in the right of way and City property.