

Invisible innovation for a connected world

Blending 5G small cells into the streetscape

The 5G era has arrived. By 2024, 60% of mobile network operators (MNOs) will have commercialized 5G offerings — up from 10% in 2020.¹ The question is: can they expand and densify their networks without cluttering cities with antennae? Working with transit authorities and municipalities, BAI Communications is embedding 5G small cells in street furniture such as light posts at subway entrances, keeping the streetscape clear so the only thing users experience is seamless connectivity.

Source: Gartner, August 2021

Same coverage as a conventional antenna

Identical to omni-directional antenna on a street pole

400–500 ft.
(122–152 m) radius

Small but powerful

Light posts conceal omni-directional 5G antennae designed and deployed for safety first

8.5–9.5 ft.
(2.6–2.9 m)

15 ft. (4.6 m)
lower than typical
5G antenna on
a street pole

5G

4x4 MIMO

for best 5G
performance

Equipment disguised as subway signage and fixtures

Cabinet contains radio frequency (RF) and other components

Ultra-flexible, low-loss,
¼-inch cabling

Fibre

Power

In summary: everybody wins.

- **Transit authorities** can monetize existing infrastructure and real estate assets
- **MNOs** can reach farther and increase network density to offer 5G in more places
- **Mobile users** get better 5G reception in crowded urban centres
- **Businesses** near subway entrances can connect point-of-sale systems to either 5G or Wi-Fi

Real-world results

Transit Wireless, a BAI Communications company, has proven this 'invisible' approach to 5G deployment with a pilot project in New York City. Compared to existing wireless coverage, the pilot delivered:

- **523%** higher peak downlink throughput² — more speed for users, more capacity for MNOs
- **23%** more 4x4 MIMO connections in surrounding area — for the highest-performing connections
- **4.5%** higher average throughput in surrounding area — to meet user demand

Virtually any urban street furniture can be used to quickly and economically deploy small cells with minimal environmental impact, enabling the rapid coverage expansion and densification needed to deliver the full promise of 5G.

²467 Mbps of downlink vs. 75 Mbps with subway entrance 5G turned off.

Re-using existing transit network infrastructure

Fibre originates from underground communications network

A better wireless experience for all

- 5G Seamless 5G coverage for mobile subscribers
- Wi-Fi access point for transit users above ground

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