

## Small Cell Facilities

In the beginning there was 1G (1st Generation). That was back in the cellular telephone Stone Age in the early 1980s. With 1G people could call other people directly using their mobile devices.

Text messages became possible with the introduction of 2G digital cellular service. With 3G's mobile broadband we could browse the internet on our cell phones. The introduction of 4G in 2009 enhanced all of the previous capabilities and dramatically increased the speed at which large data files could be transmitted.

Next up is 5G (5th Generation) expected to be deployed in 2020. 5G will use higher frequencies which exponentially increases the speed at which data can be transferred. It will allow continuous streaming of high-definition media on mobile devices and the "Internet of Things" – machine-to-machine communication – would become a reality.

However, because high frequencies don't travel as far as lower frequencies, 5G will require new antennas to be built to fill the gaps between existing cell towers. These new 5G antennas will be "small cell" facilities, which by definition are no more than 3 cubic feet (a medium size suitcase). Typically they are attached to existing poles in the street such as street lights, traffic signals, and power poles. They can also be attached to buildings. Small cell facilities have a limited range of 1,500 feet (about two blocks) and cannot be shared by carriers so there will be a lot of them.

City staff is working proactively to have comprehensive regulations and other tools in place before the expected deluge of small cell facility applications begins in 2018. With good regulations we'll be able to enjoy the best telecommunications service available while still protecting the aesthetics of our community.