

## 2. Common Uses for RF Radiation

Common uses of RF radiation include:

- Microwave ovens;
- Radar;
- Industrial heating and sealing processes;
- Medical applications; and
- Telecommunications & broadcast services. This latter category includes cellular antennas and base stations, radio and television broadcasting, radio communications for police and fire departments, microwave point-to-point radio links, and satellite communications.

According to the Federal Communications Commission, “[t]he most important use for RF energy is in providing telecommunications services.”<sup>4</sup> This use of RF radiation is the one we are most concerned about because telecommunications equipment is frequently installed on rooftops, sides of buildings, and/or on other elevated structures where work is performed.

As demand for cellular service has grown, there has been a significant increase in the number of cellular sites in a relatively short period of time. According to CTIA – The Wireless Association, between 1985 and 2015, the estimated number of cellular subscriber connections grew exponentially from 340,213 to more than 377 million\*, and the number of cellular antenna sites increased from 913 to more than 300,000.

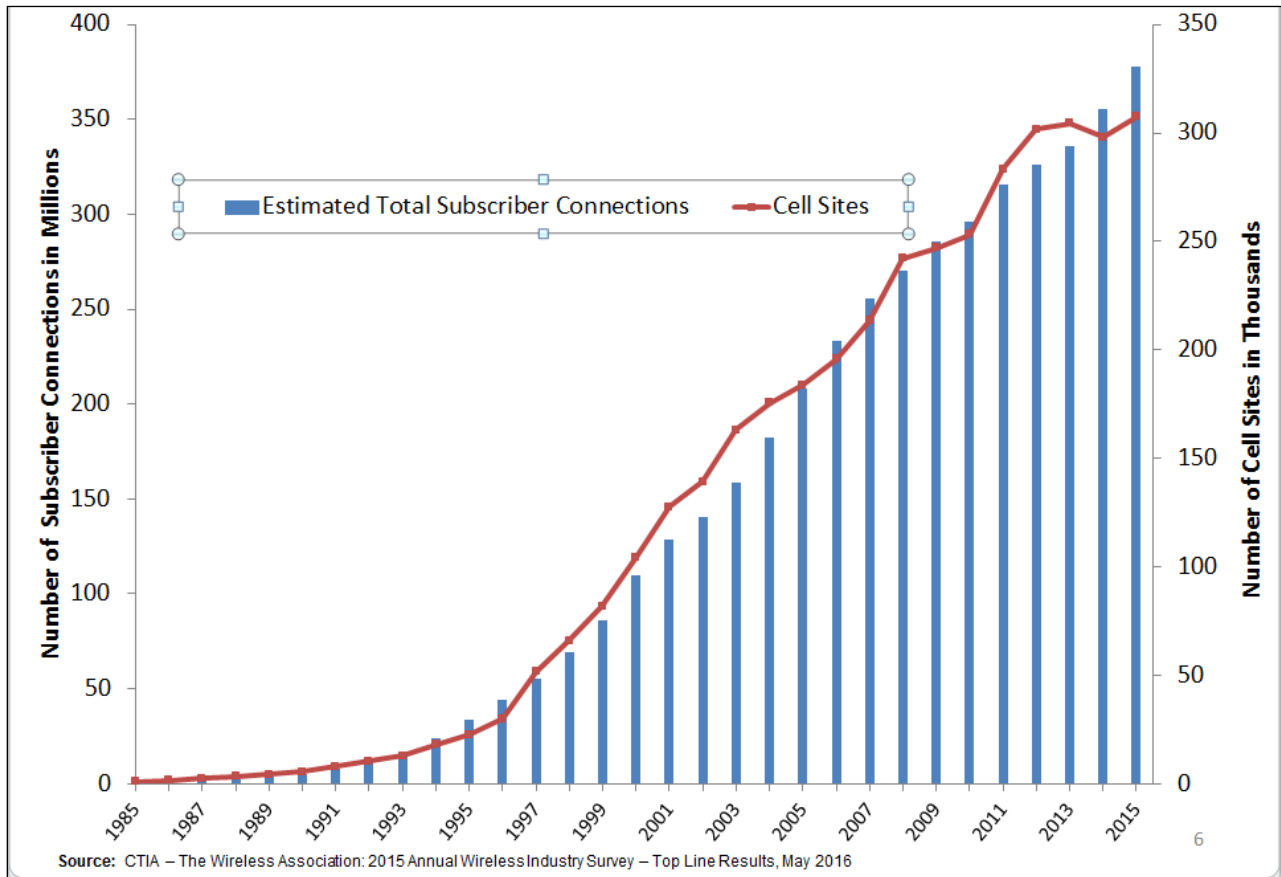
In 2014, the number of cell sites dropped off slightly to 298,000 due to consolidation and the replacement of older technologies with new devices, but then the number increased to 307,626 in 2015.<sup>5</sup> (Figure 2-A)

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<sup>4</sup> FCC RF Safety FAQ. <https://www.fcc.gov/engineering-technology/electromagnetic-compatibility-division/radio-frequency-safety/faq/rf-safety#Q1>

<sup>5</sup> CTIA – The Wireless Association. 2015 Annual Wireless Industry Survey – Top Line Results (May 2016) <http://www.ctia.org/docs/default-source/default-document-library/ctia-survey-2015.pdf>

**Figure 2-A**



**\*Note:** One subscriber can have more than one connection.