Verizon plans to install 1,000 poles, with attached 5G small cells, in Sandy Springs. However, based on the calculations presented below, they will need an **additional 4,353 small cells**! Where will all those small cells go? They can go on street lights and utility poles near your home, and your neighbors' roofs, according to the FCC's OTARD rule. How would you like 5G radiation beamed directly into your bedroom from your neighbor's roof? How about your baby's or children's bedrooms?

CALCULATIONS

If 500 ft. is the distance between small cells, then the radius of RF radiation of each small cell is 250 ft.

Each small cell covers this area:

$A = \pi R^2$

$A = 3.14 \times 250^2$

$A = 3.14 \times 62{,}500$

$A = 196{,}250$ sq. ft.

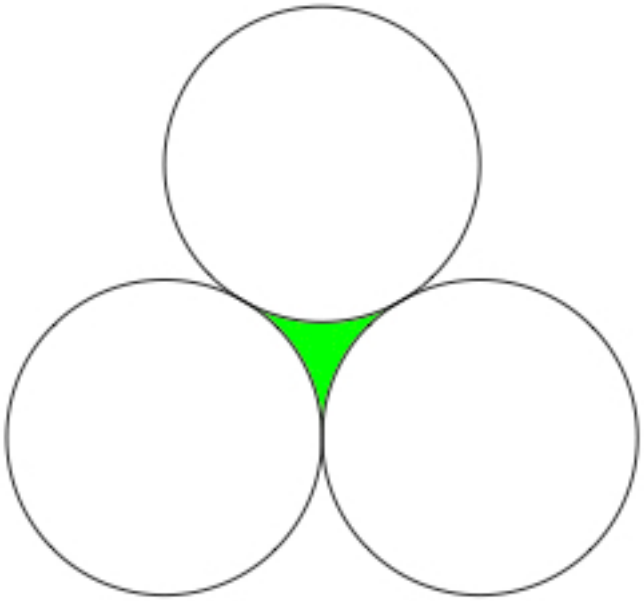
Since there are 27,878,400 sq. ft. in a square mile, then you need:

27,878,400 / 196,250 = 142 small cells / sq. mile

Since the area of Sandy Springs is 37.7 square miles (source: SandySpringsGA.gov), then you need:

37.7 x 142 = **5,353 small cells** for the City of Sandy Springs.

There are factors which will influence the exact number of small cells. For example, circles of radiation leave dead zones, shown as green in this figure, where the circles come together.



The small cells would need to be moved closer together to eliminate the dead zones, which would increase the total number of small cells. However, Verizon plans to leave their 4G service active. Thus, if the dead zone is say between your backyard and your neighbor's backyard, you probably will not need to do more than use your phone's 4G capability to make a call, if you need to do anything at all.

The number of small cells calculated here may be on the low side considering that Lowell McAdam, chairman of Verizon, stated that Boston, with a landmass of 48.28 square miles (source: census.gov) will need 8,000 - 10,000 small cells, at 6:50 of https://www.youtube.com/watch?v=3EYDniSTu2c

That means Boston will need 165 to 207 small cells per square mile, as opposed to the estimated 142 small cells per square mile calculated for Sandy Springs. Obviously, an older city like Boston has different building materials, street layouts, etc. than a newer city like Sandy Springs, so you

can’t compare the two directly. However, it shows that the 142 small cells per square mile calculation for Sandy Springs is in the ballpark of reasonableness.