UPDATE: Carrier deployment of improved 4G and future 5G - aka “Small Cells” What are “Small Cells”

Small Cells are cellular service transmission nodes proposed by Verizon, ATT, T-Mobil/Sprint and Crown Castle (which is not a carrier but a Real Estate Investment Trust, or a REIT) to make the current generation of cellular service faster and more reliable by increasing the capacity of our current 4th generation (4G) telecommunication technology. Many carriers are marketing this as next generation – 5G – service. Only Verizon has fessed up that this is actually improved 4G service.

Industry standards for 5G do not yet exist. So what? Improved service sounds beneficial – what’s the big deal? Because there are so many unknowns, several major issues about Small Cells need to be explored.

The size of the new 5G apparatus is a potential concern. The Small Cells being proposed consist of new metal poles, erected on our sidewalks in the zone already occupied by tree boxes and streetlights (and, in some instances, in alleys). The diameter and height of the poles, radios and antennas vary by carrier/REIT. Designs presented last year depict poles 20’ to 30’ high and 8” to 26” in diameter. Bases, which will house radios, range from 20” to 28” in diameter and 18” to 60” in height. The poles will support antennas and radio transmitters. 4G antennas can be as tall as 56” and up to 24” in diameter. 5G antennas are purportedly larger.

The design of Small Cells is not uniform and needs more clarification. The reason for the wide range of dimensions is that the shape and size of the antenna and radio equipment vary by carrier. DDOT draft Small Cells Design Guidelines so far only address pole heights, color, and the requirement to shroud the equipment. The potential proliferation of transmission equipment is worrying. When 5G does arrive (rollout is forecast as sometime in 2020) it will not work on existing radios or antennas. And today’s devices, which are compatible with 4G, will not work with 5G. Since carriers know many people will not abandon their current phones, they will continue to offer both 4G and 5G - at least for a while. Thus, the specialized 5G radios and antennas will be added to the 4G-equipped small cells.

As yet, the number and locations of Small Cells have not been delineated. With 10-year public space contracts from DDOT, Small Cells potentially could add much clutter and unsightly views to our streets.

Which is why CAG is a “Small Cells” activist. We first began informing CAG members about Small Cells and the challenges they pose last summer, followed by additional information in our fall newsletter and at a very well attended Town Hall meeting sponsored by CAG, ANC2E, and the BID. CAG’s Richard deC. Hinds, Elsa Santoyo, and Betsy Emes, ANC2E Chair Joe Gibbons, and Commissioner Jim Wilcox provided testimony at DDOT’s Public Space Meeting and at a City-wide Roundtable organized by Councilmember Mary Cheh. We continue to stay in touch with representatives from the US Commission of Fine Arts, Councilmembers, and other interested organizations in the city, as well as telecom company representatives.

Our objective is to reduce the potential visual clutter on our lovely historic streetscape yet allow residents to reap benefits from promised improved service. As such we have recommended that carriers:

1. Mitigate visual clutter by reducing the number of small cells.
2. Explore alternative means of providing 4G and 5G service, such as rooftop-based antennas and antennas beneath manhole covers. (This approach has been successfully employed in the UK.) Confirm that the coverage area of Small Cells is as wide-ranging as has been touted by Verizon’s Chairman - which would result in lessening the number of Small Cells per block.
3. Develop a single pole design that all carriers must use uniformly throughout our historic district.
4. Agree not to place poles close to tree roots or trim the tree canopy.

As the new program and technology progress, CAG will stay involved and keep the community informed.