



## **Small Cell Presentation - Belmar**

**August 18, 2020**

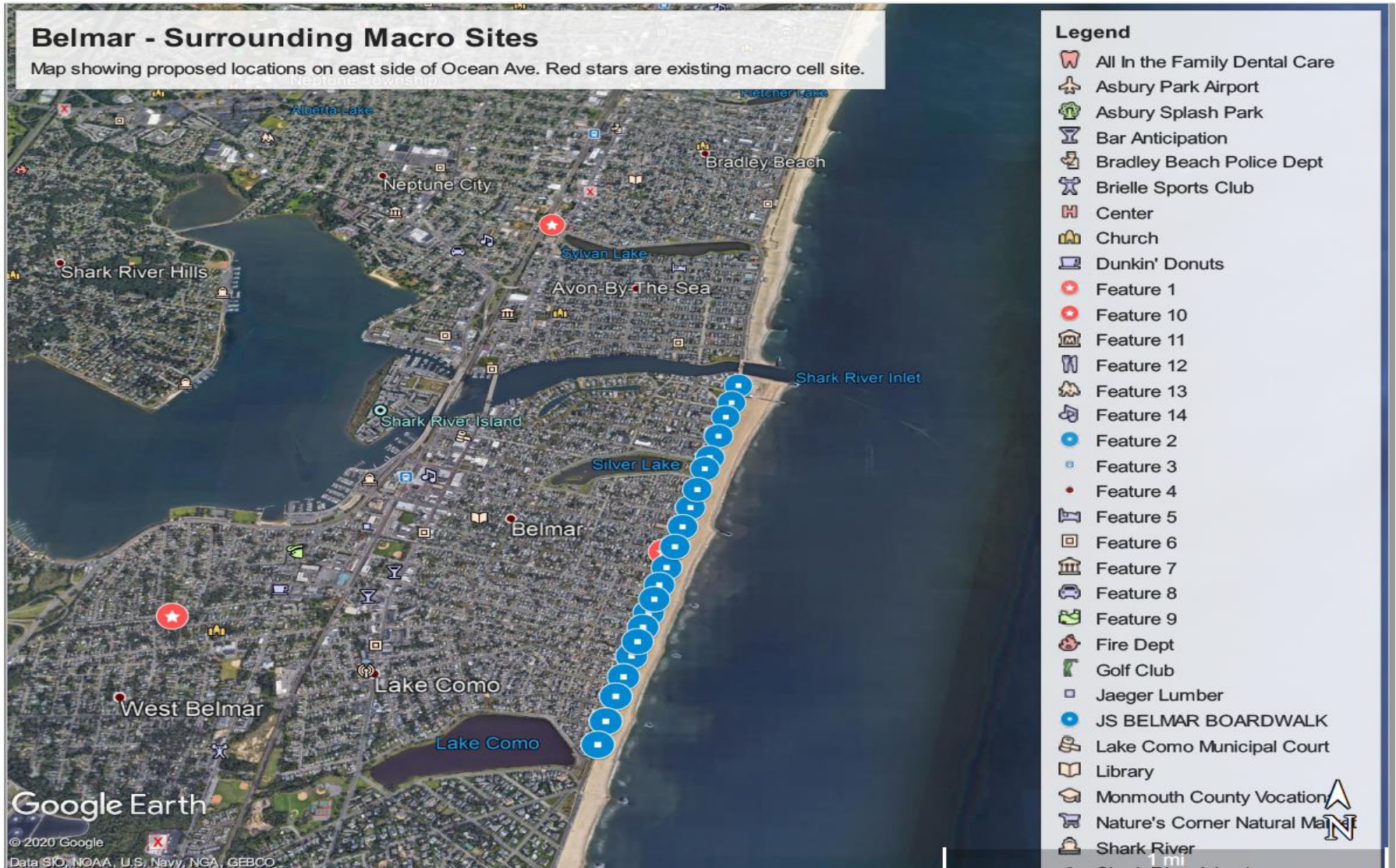
Bryan C. Cline  
Network Real Estate Manager  
Verizon Wireless – New Jersey

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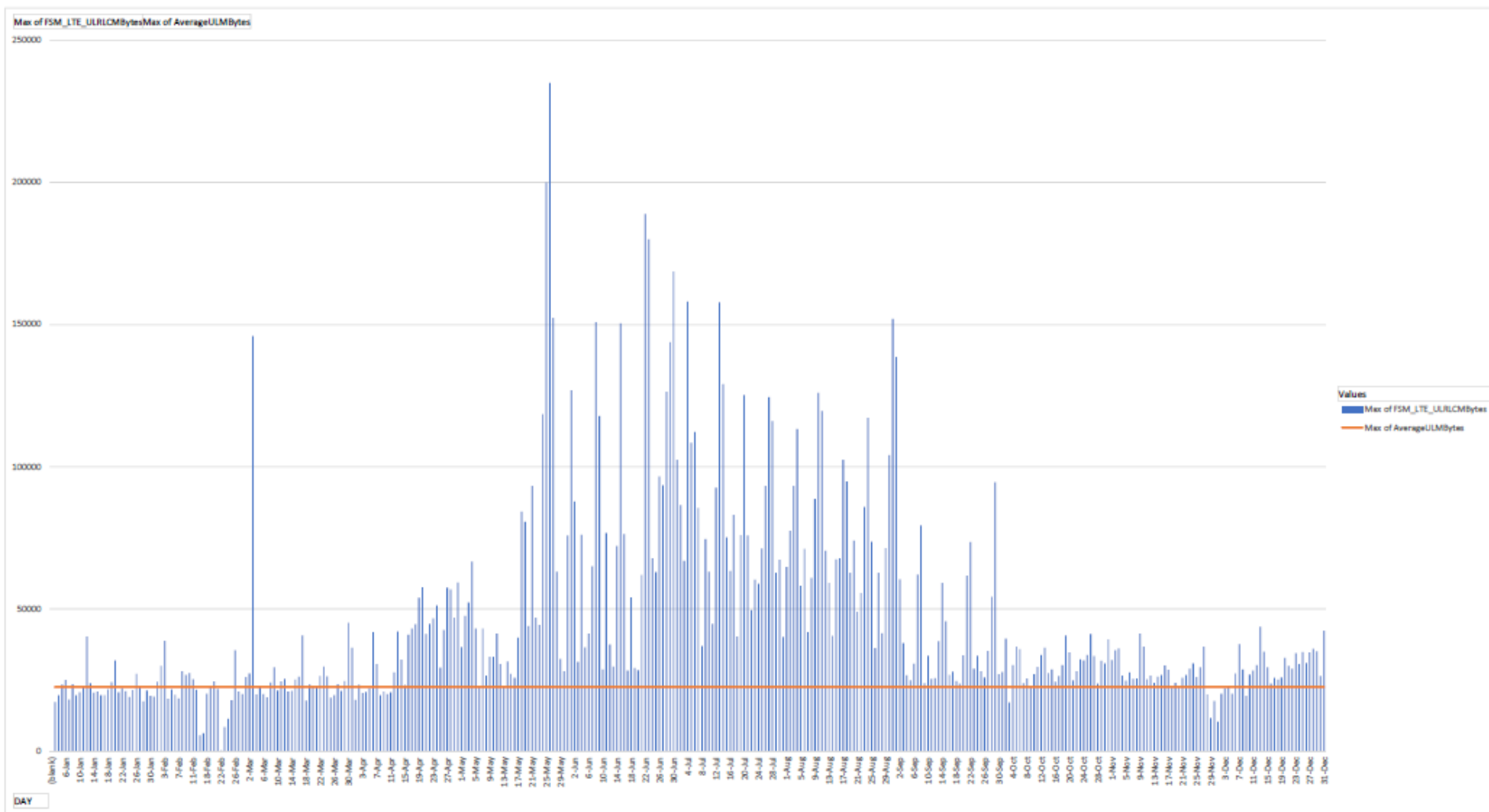
# Agenda

- 1. Introduction – Greg Meese**
- 2. Need for Facilities – Abdallah Ahmed**
- 3. Facility Design -Bryan Cline**
- 4. Safety & Compliance – Andrew Petersohn**
- 5. Ordinance & ROW Agreement – Greg Meese**

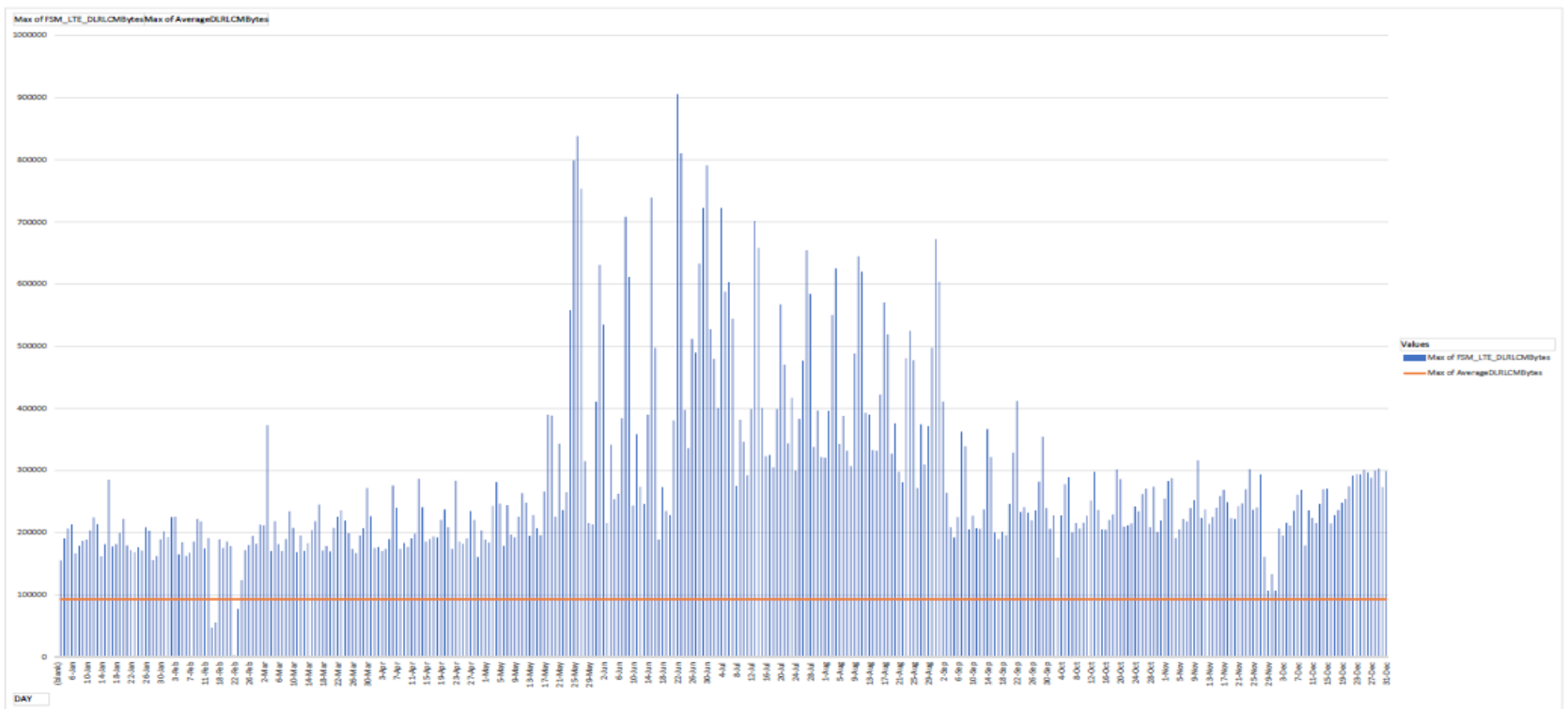
# Header



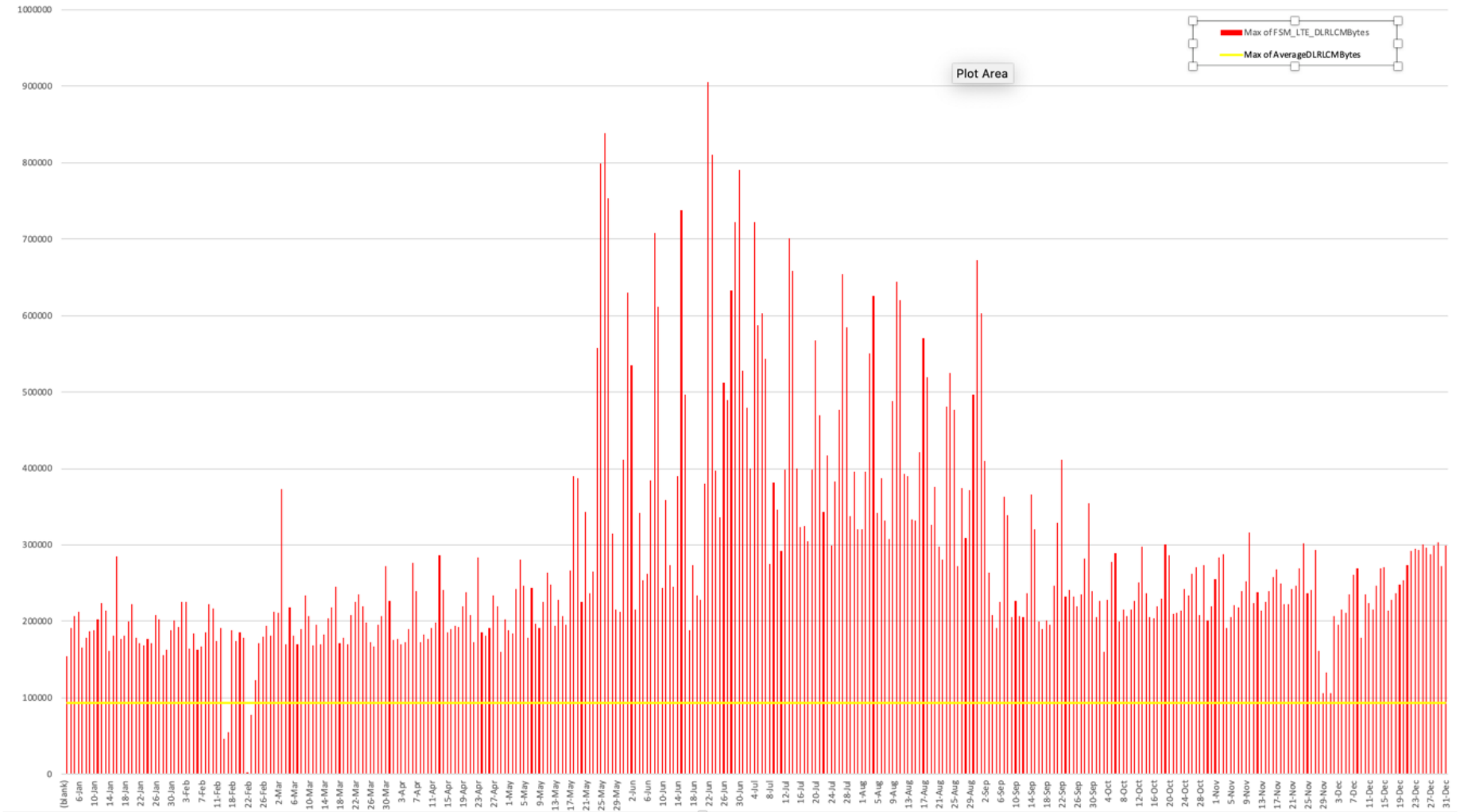
# Current Network Usage - UL



# Current Network Usage - DL

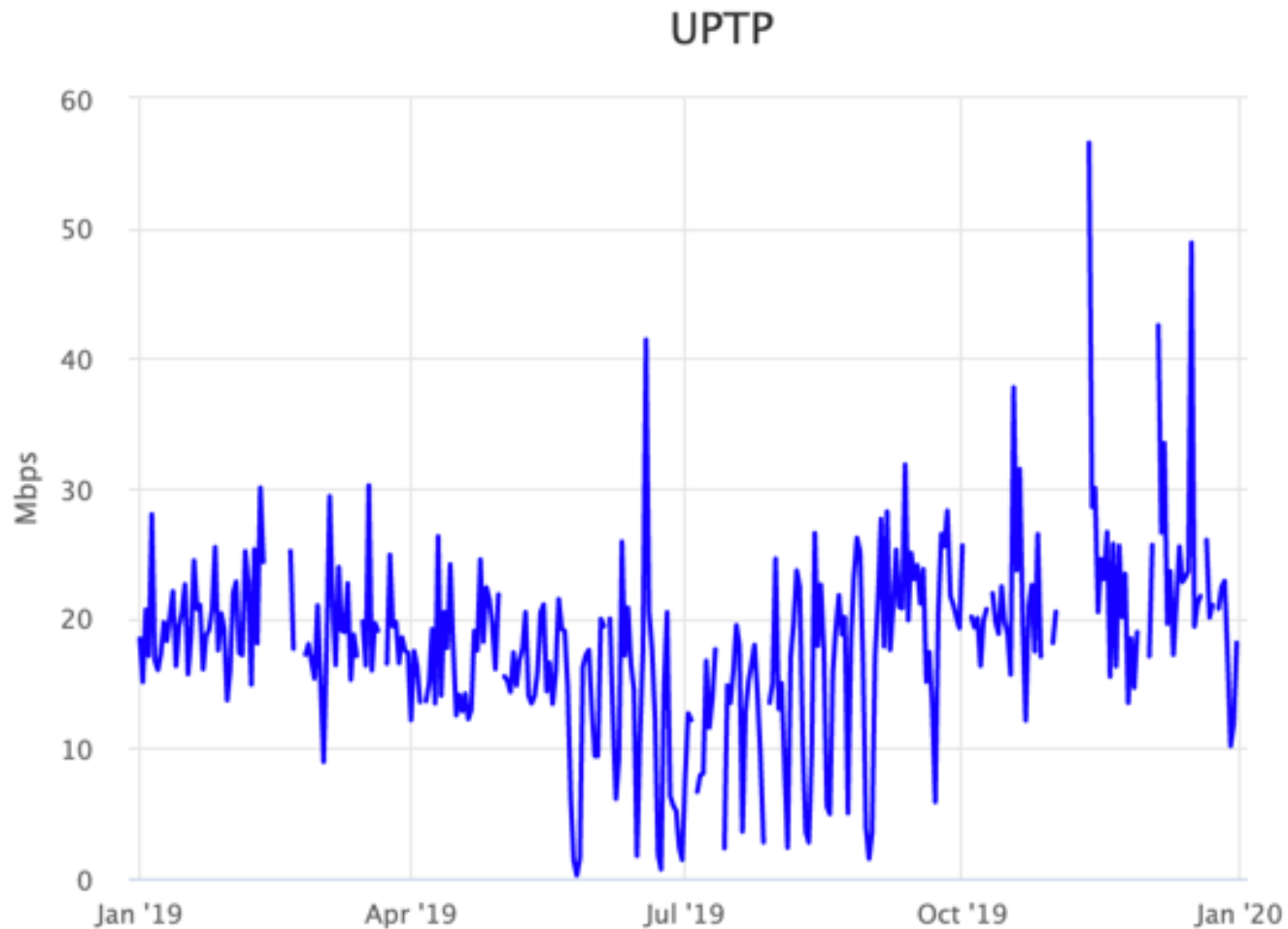


# Max User Data



# User Perceived Throughput

📶 User Perceived Throughput By Carrier (Mbps)

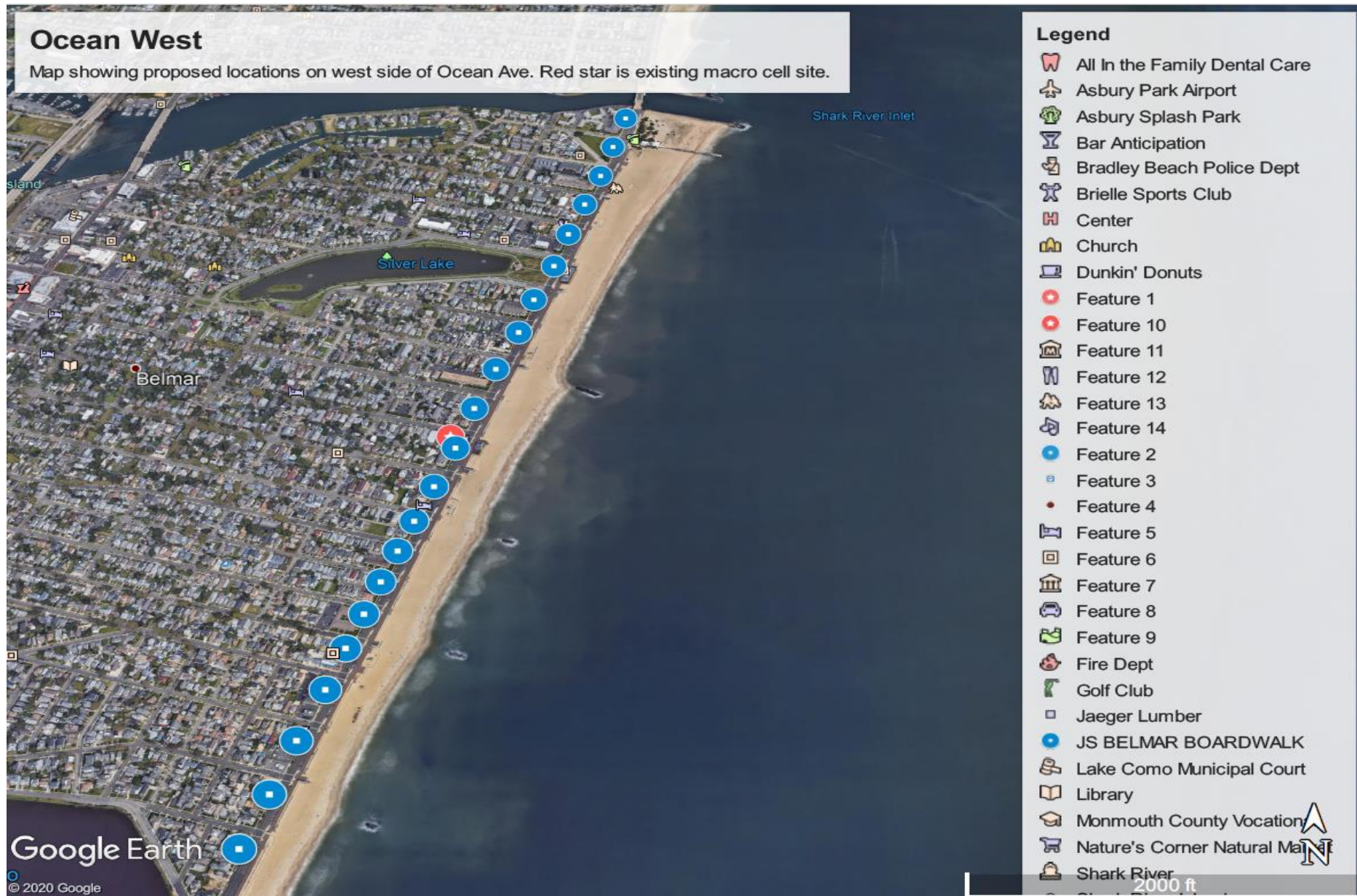




# Proposed Locations – West Option

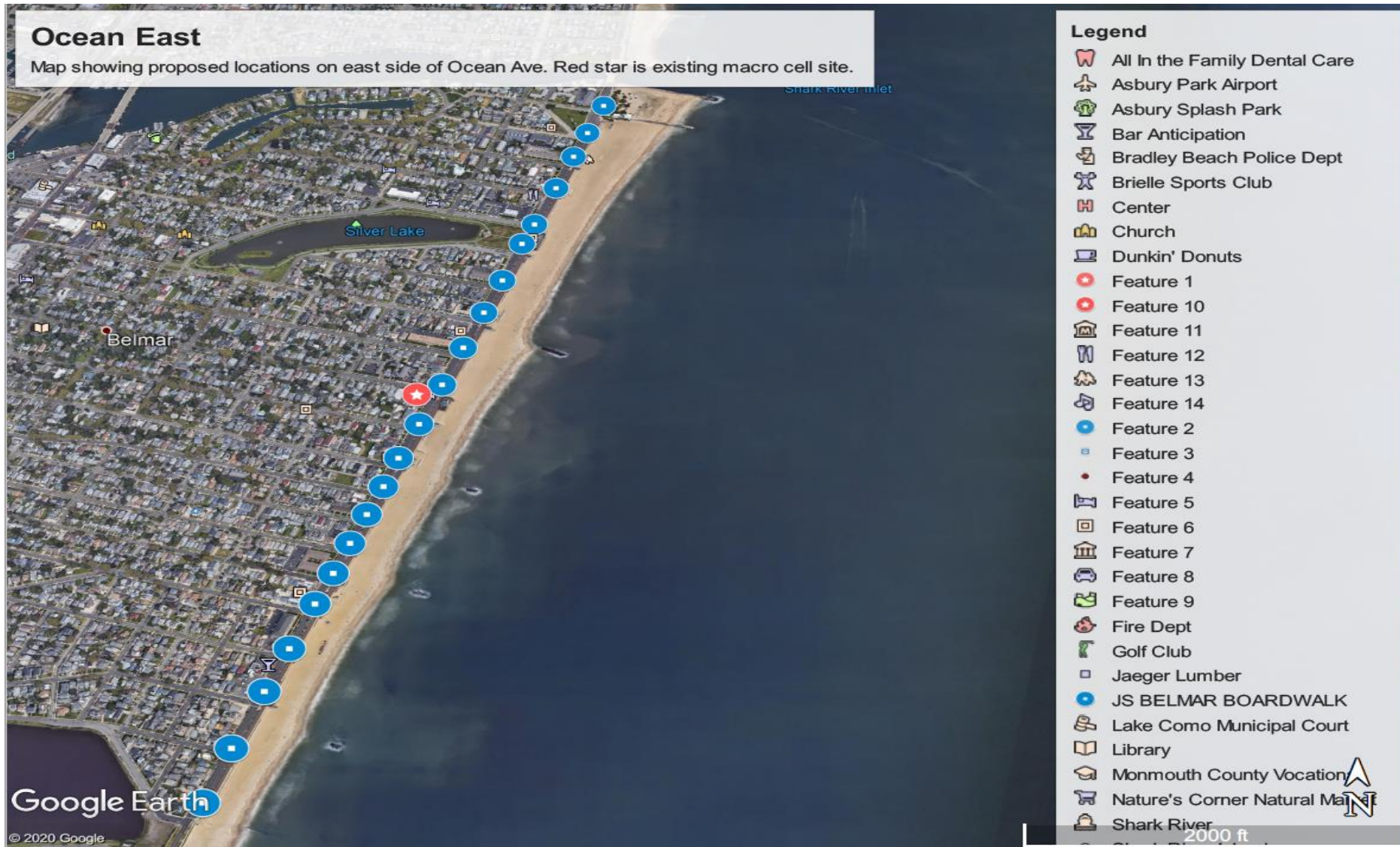
## Ocean West

Map showing proposed locations on west side of Ocean Ave. Red star is existing macro cell site.





# Proposed Locations – East Option



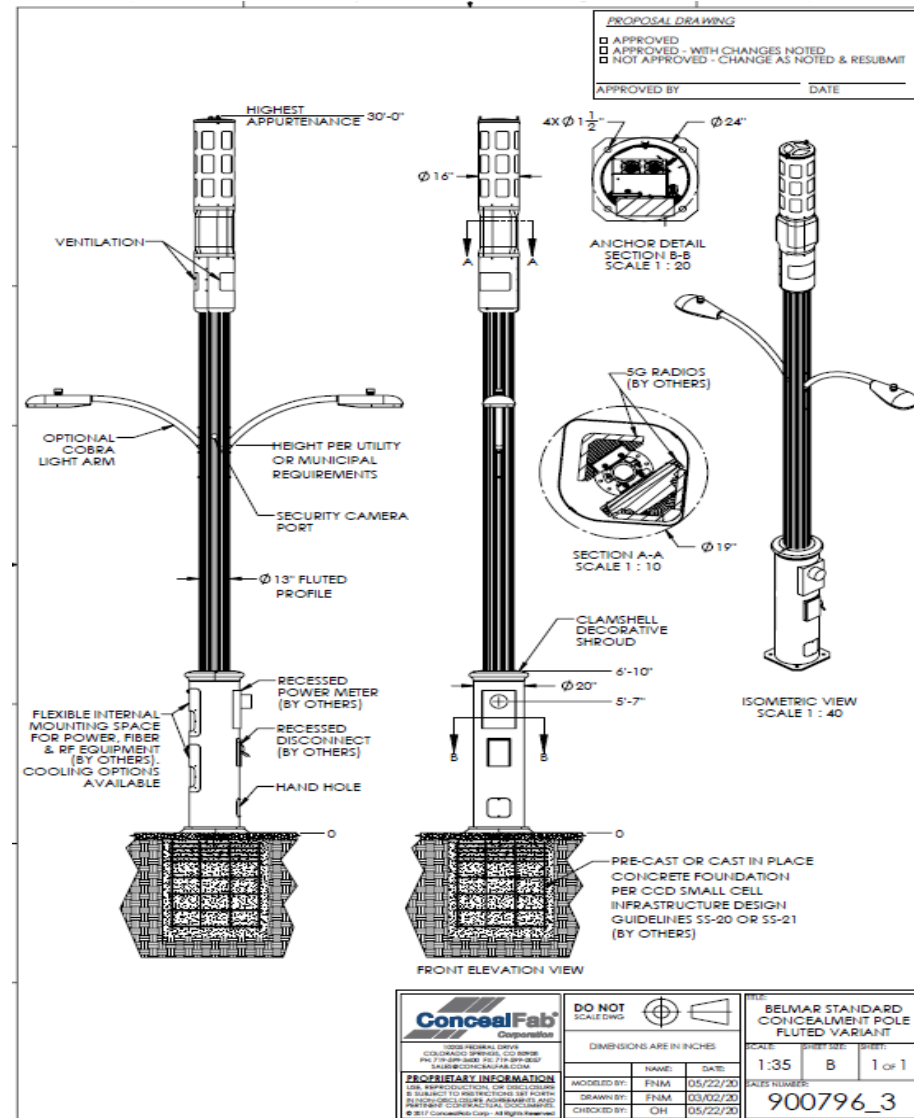
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# Node Design Specifics

## Site Selection and Design Options

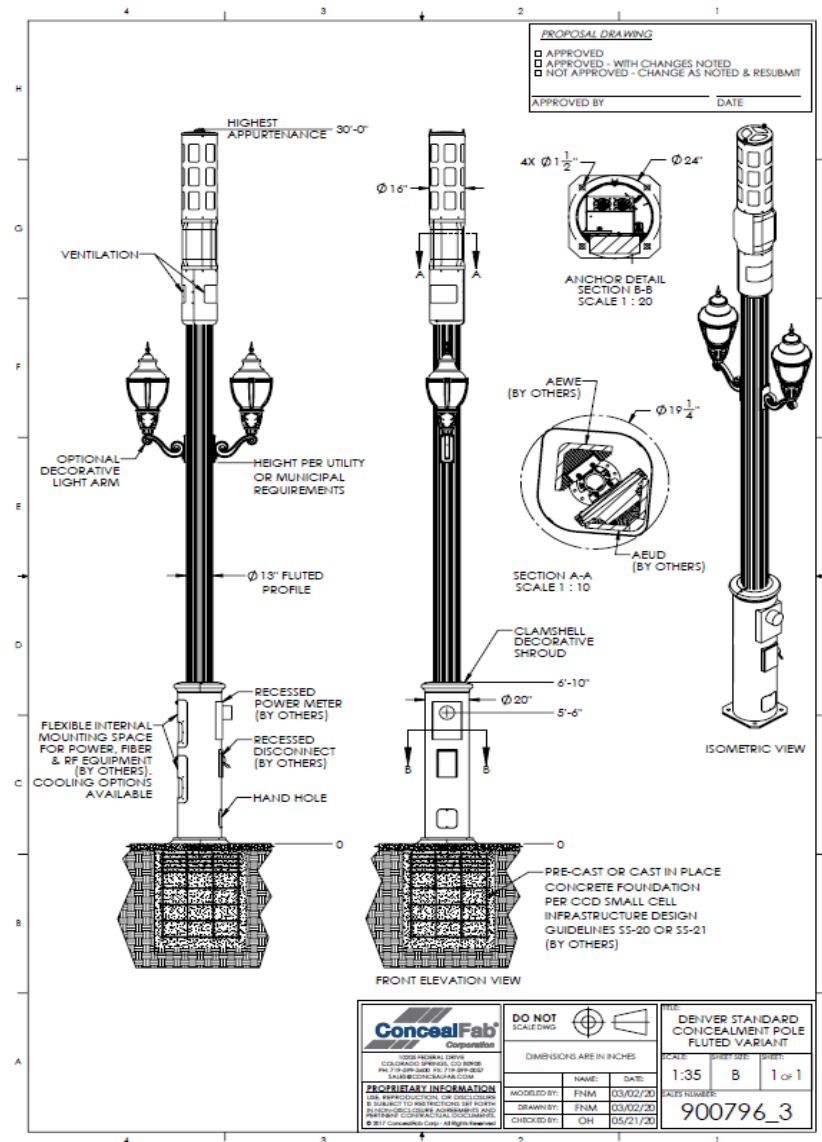
- **2 Design Options**
- **Designed with Input from Town**
- **Limited Height to 30' (below 50' allowable per FCC)**
- **Equipment Concealed within Pole to Achieve Aesthetic Balance**

# Design Option - Cobrahead





# Design Option - Fluted



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# Virtual Flyover

## Virtual Flyovers

- [Belmar Version 2- East Poles](#)
- [Belmar Version 3- West Poles](#)



# Site Safety

## Facts About RF Energy



### RF 101

Radiofrequency (RF) energy is used to transmit information without wires. It has been safely used for over 100 years. Today, RF is used for life's daily connections – from radios and televisions to smart watches/fitness trackers and wireless headphones, Bluetooth and WiFi routers, and even baby monitors.

RF energy is also used for the wireless technology that provides connectivity for your mobile devices.

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# Site Safety

## Separating the myths from the facts

**MYTH:** 5G is new and has not been researched.

**FACT:** Scientists in the U.S. and around the world have conducted research on RF energy for decades. In December 2019<sup>2</sup>, in a unanimous and bipartisan decision, the FCC affirmed that the same RF safety standards that apply to earlier wireless technologies (e.g., 3G and 4G) apply to 5G. The FCC took action after a lengthy proceeding, in consultation with multiple federal agencies and close examination of the RF research. In 2020, the U.S. Food and Drug Administration (FDA) released a report reviewing studies on RF health and safety from the last ten years, and found that “there are no quantifiable adverse health effects in humans caused by exposures at or under the current cell phone exposure limits.”<sup>3</sup> The research continues to this day, and agencies continue to monitor it.

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**MYTH:** 5G use of millimeter wave spectrum is harmful.

**FACT:** RF energy exists all around us, and has many helpful uses. For example, baby monitors use RF energy to convey information and light bulbs use it to provide light. 5G technology uses RF energy to enable very fast wireless internet access service. And 5G technology that uses millimeter wave spectrum is subject to the same FCC safety standards that apply to all frequencies of spectrum used for wireless communications. So, 5G networks using millimeter wave spectrum are not only helpful, but also must meet FCC safety standards.

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**MYTH:** Wireless carriers clustering in an area will cause cumulative RF energy to exceed FCC limits.

**FACT:** The cumulative RF energy generated by the aggregate antennas must fall within FCC limits.

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# Site Safety

**MYTH:** 5G networks put our children at risk.

**FACT:** No matter which generation of technology we use, all Verizon networks and equipment must comply with federal government safety standards. Those standards have wide safety margins and are designed to protect everyone, including children .

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**MYTH:** 5G will harm the environment and wildlife, disrupting migratory patterns and killing off birds.

**FACT:** Reports suggesting harmful effects of RF to non-humans, including birds, honey bees, and other insects have been largely discredited. Audubon magazine<sup>4</sup> published a piece observing that there is no evidence that 5G radio waves kill or otherwise harm birds. The American Bee Journal<sup>65</sup> also published a piece addressing why there is “no good reason to expect [5G] to harm honeybees.”

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**BOTTOM LINE:** Telecommunications networks and equipment that comply with FCC standards are safe for communities and consumers.

## Additional Resources

**FCC:** RF Safety FAQ

<https://www.fcc.gov/engineering-technology/electromagnetic-compatibility-division/radio-frequency-safety/faq/rf-safety>

**FDA:** Radio Frequency Radiation and Cell Phones

<https://www.fda.gov/radiation-emitting-products/cell-phones/radio-frequency-radiation-and-cell-phones>

**CTIA:** Wireless Health Facts

<https://www.wirelesshealthfacts.com/faq/>

**Sources**

- 1 Adapted from <https://www.fda.gov/radiation-emitting-products/cell-phones/radio-frequency-radiation-and-cell-phones>
- 2 <https://www.fcc.gov/document/fcc-maintains-current-rf-exposure-safety-standards>
- 3 <https://www.fda.gov/media/135043/download>
- 4 <https://www.audubon.org/news/no-5g-radio-waves-do-not-kill-birds>
- 5 <https://americanbeejournal.com/why-we-shouldnt-fear-5g/>

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# Site Safety

## Are small cells safe?

**The Federal Communications Commission, in consultation with multiple federal agencies, sets federal government safety standards regarding small cells. Those standards have wide safety margins and are designed to protect everyone, including children, and were established after close examination of research that scientists in the US and around the world conducted for decades. The research continues to this day, and agencies continue to monitor it.**

**Scientists have studied potential health effects of RF emissions from cell phones for decades. Based on all the research, federal agencies have concluded that equipment that complies with the safety standards poses no known health risks. And advisers to the World Health Organization have specifically concluded that the same goes for 5G equipment. In fact, the RF safety standards adopted by the United States Federal Communications Commission (FCC) are even more conservative than the levels adopted by some international standards bodies.**

**FCC: The FCC provides information about the safety of RF emissions from cellular base stations on its website at: <http://www.fcc.gov/oet/rfsafety/rf-faqs.html>.**

**FDA: The Food and Drug Administration's Cell phone website.**

**EPA: The Environmental Protection Agency's overview of cell phone safety: Cell phone safety.**



**Thank you.**