

July 8, 2020

To: City of Louisville Department of Planning and Building Safety
Re: Cable Television Laboratories, Inc. (CableLabs) Letter of Request to Install Proposed Lattice Tower

Dear Louisville Department of Planning and Building Safety:

CableLabs would like to install a new 20' lattice tower for the occasional testing of low power wireless broadband technologies using non-interfering experimentally licensed spectrum and, more frequently, using unlicensed spectrum that is freely available for public use, such as Wi-Fi. All of the wireless spectrum bands transmitted and received from the proposed tower are unlicensed ISM-bands and CableLabs FCC registered licensed test bands and will be used to transmit and receive to and from locations within our business property.

Who are we and what do we do? CableLabs has been a major employer within Louisville, CO since the early 1990's. We are a non-profit R&D organization funded by over 60 cable operators located around the world to development innovative and industry leading technologies. These technologies cover a wide range of functionality from 10 Gigabyte broadband to voice, video and other services for residential and business cable customers.

In order to develop these new technologies and ensure they meet the high expectations of cable operators and their customers CableLabs needs to perform tests. The proposed tower will be used to test wireless equipment to and from our indoor lab facilities. This allows us to validate that our technology works in a production-like environment. The communications will always be designed and controlled to go only between the tower and our indoor lab facilities located across our parking lot.

The proposed tower does not transmit or receive any spectrum for mobile production purposes, such as AT&T or Verizon. The wireless transmissions to and from the proposed tower are not those used by any commercially licensed mobile communications or emergency service providers. The proposed tower is strictly for testing. We expect the proposed tower to be used intermittently for testing through the duration of our lease, including any lease renewals.

The location we have chosen hides the tower as much as possible within the trees in our parking lot while providing a clear line of site to the back of our building. The purpose for using the back of the building coincides with the location of multiple wireless labs and demonstration rooms located in the back of the building. We are unable to mount the test transmission equipment on the building to the north or potentially on the building to the east of our building as transmitting from these locations will decrease the integrity of the wireless signal to the point that demonstrations could fail or would not adequately represent the technology in the way it would perform in a production environment.

The lattice tower design we have chosen for the tower balances functionality, stability and safety. A lattice tower provides more functional flexibility than a monopole or other structure in that we would be able to mount many different types and shapes of communications equipment to it. Since, we do not know what the future looks like for communications equipment and we are regularly pushing the innovative edge further out, this flexibility allows us to adapt to changing technologies and related platforms.

Another reason for the lattice tower is stability in windy conditions. Often during the fall and spring we have very windy conditions at our facility. The lattice tower provides greater stability for the communications equipment than other solutions, such as a monopole. For example, technologies, such as free space optic (FSO) wireless technologies need to remain stable in order to maintain precise accuracy between the transmitter and receiver during testing. A lattice tower is more stable than other pole types.

A lattice tower also allows for use of common safety equipment, gear and procedures, so employees of CableLabs can be trained appropriately with the ability to climb the tower safely. This is important, since any tower above 10' requires a full climbing safety solution as CableLabs does not have bucket lift equipment. It should be noted that in order to ensure the safety of the public, the tower comes with 10' anti-climb panels on all sides to keep curious individuals from climbing the tower.

In conclusion, the purpose of this tower is to test varying wireless communications using unlicensed spectrum or CableLabs experimental licensed spectrum. The testing occurs intermittently throughout the year and varies from technology to technology. At times, no testing will be occurring. The location attempts to blend a compromise of being located within an area either partially or fully obscured by foliage depending on the vantage point. It is located in the back of the building to provide the most optimal line-of-site to our labs and demonstration rooms. The design of the tower is one that provides a balance of functional flexibility, stability and safety. We also chose a 20' height to keep it as low as possible relative to other poles and trees in the area as to obscure it as much as possible. The flexibility, safety and stability of the lattice tower make it a superior option relative to other tower types, such as a monopole or light-pole type of solution.

Best Regards,

Daryl Malas,

Principal Architect, Advanced Technology Group