

28812 E. Woodard Road  
Troutdale, Oregon 97060  
November 5, 2020

Mr. Daniel Kearns, Hearings Officer  
Multnomah County Land Use Planning  
1600 SE 190th Avenue  
Portland, Oregon 97233

Dear Mr. Kearns,

This letter responds to the letter of October 28, 2020 that you received from Mr. Jeff Culley of Verizon Wireless regarding the proposed 150 foot 'POR Stinger' cell phone tower on Woodard Road in rural area east of Troutdale.

Mr. Culley ignored the issue we raised about **the proposed tower failing to address half of Verizon's stated service needs in the Troutdale area.** The "RF Usage and Facility Justification POR Stinger" that he prepared (as Exhibit A.41, dated August 10, 2020) includes this clear statement of Verizon's objectives:

**Coverage Objectives:**

- Neighborhoods on the top of the plateau
- Neighborhoods near the Sandy River
- Historic Columbia River Highway

Verizon also contended in Exhibit A.21 that:

The coverage maps in Exhibit 5 show that the proposed project site is ideally suited to meet coverage objectives because of favorable topography which places it well above the residential areas to the west of the site, and well above the nearby low-lying coverage objectives along the Columbia River which includes the Historic Columbia River Highway.

That contention is gibberish on the face of it, because **Verizon has NO coverage objectives "along the Columbia River."** As to "favorable topography," that is exactly the problem, because the topography is not favorable to "meet coverage objectives" in the deep Sandy River Gorge.

Verizon's colorful computer simulations in Exhibit F are supposed to further assure Multnomah County that Verizon will achieve its objectives at the POR Stinger site. **THAT IS NOT THE CASE!**

The proposed cell tower will improve their coverage for "Neighborhoods on the top of the [Troutdale] plateau," because the tower has a clear view of that area. But it will have difficulty to severe difficulty covering areas in the deep Sandy River Gorge, despite what their simulation alleges, because there is no line-of-sight to the river area. **"Neighborhoods near the Sandy River" and the "Historic**

**Columbia River Highway” will be substantially *shadowed* by the steep cliffs on the east side of the river.**

Residences farther from the river on the west side of the Sandy may experience improvement in service from POR Stinger, *if they are outside the radio frequency shadow area*. This means that Verizon's contention that “the WCF must be located at the proposed site (service demands, topography, dropped coverage, etc.)” to meet MCC39.7735 is **NOT CORRECT**. Their tower needs to be located somewhere else to meet Verizon's needs. I have suggested the “Riverview” site as a much superior location that would satisfy all their “Coverage Objectives.”

**This further says that Verizon's entire simulation analysis is substantially faulty**, despite their claims to the contrary. That is why I have asked that they provide actual measurements showing that the cliffs present no difficulties for them. Proprietary software, that they claim does a fine job, obviously does not. No one should rely upon it, let alone Multnomah County.

Even my personal experience with Verizon cell service at my residence shows that their estimate of existing signal strength is **wrong by as much as a factor of 100** (20 dB). That is a lot.

Mr. Culley seems oblivious to the fact that he utilizes the phenomenon of *shadowing* to argue against the Corbett Water District site on Cabbage Hill. **If it is a problem on Cabbage Hill, then it is certainly a problem in the deep Sandy River Gorge.** The Historic Columbia River Highway is so close to the cliffs that the highway is periodically closed to remove trees and debris that fall directly on the roadway.

In MCC 39.7735 B (4), Multnomah County requires “A report/analysis from a licensed professional engineer,” presumably meaning a report without significant errors, prepared by a licensed professional engineer. I have demonstrated significant errors, not only in the simulated coverage for the POR Stinger site but for the Cabbage Hill site as well. On Cabbage Hill, both Mr. Culley and Verizon attorney Mike Connors have acknowledged that their simulation involved a hypothetical antenna placed *too low* in the trees to be effective. But they failed to reveal that until I questioned them. Now Mr. Culley has come up with the excuse that any tower next to the water tank on Cabbage Hill would not be a “co-location.” That is certainly misinterpreting the meaning of “co-location”!

And finally, the documents prepared for Multnomah County by Mr. Culley do not carry any assurance that Mr. Culley is a “licensed professional engineer” in Oregon. That is clearly one of the requirements. Engineers who are real “professional engineers” will typically stamp their work to indicate their license and use the abbreviation “PE” after their name. Mr. Culley does not, calling into question his qualifications. It is a serious offense in Oregon to pretend to be an engineer if not one.

Mr. Culley claims twenty years of experience working for Verizon, but gives no indication of his education. In contrast, I am a physicist with 50+ years of experience. And I have a Bachelors, Masters, and Doctorate in Physics from the University of Chicago. Mr. Culley relies on secret software, while I rely on sturdy analysis from elementary first principles. Disputes in science and engineering are typically resolved, not by qualifications, but by recourse to measurements, measurements that Verizon has failed to provide. **That suggests that they cannot back up their claims.**

The motto of the first scientific society (British Royal Society) is 'Nullius in verba,' (Take nobody's word for it). “It is an expression of the determination of Fellows to withstand the domination of authority and to verify all statements by an appeal to facts determined by experiment.” That was the

very beginning of science as we know it in 1660. It is still the foundation of the Scientific Method today.

Verizon needs to respect the Scientific Method and back up their imaginary simulations with real robust data. Secret software with magical capabilities is not acceptable.

Sincerely yours,

**Gordon J. Fulks, PhD (Physics)**

P.S. David J. Pinion, PE who stamped one of the documents that Verizon submitted to Multnomah County on this project earlier (Exhibit A.21) is NO LONGER LICENSED IN OREGON, according to his bio, posted online. This suggests that Verizon no longer has ANY professional engineer, licensed in Oregon, working on this project. Yet at the ZOOM Hearing, Mr. Conners stressed Verizon's use of registered professional engineers on this project! Where are they? Are the problems that I have noted here and previously with Verizon submissions the result of a lack of professional engineers assigned to the project?