

CELL TOWER
(62 GRANITE SPRINGS ROAD)
QUESTIONS AND ANSWERS

Questions were asked by members of the Town Board; answers were given by Bob Wilson, resident, who used his engineering experience in the wireless and radio communications fields to address each question.

Is the RF study a pre-engineered report? Is this followed up with a new report if/when the tower is built?

if you're asking about the RF safety report, yes it's a predictive study done once the site design has been finalized using the proposed tower design and operating parameters. While these studies are predictive in nature, they are based on established engineering methods and conservative assumptions.

Once a site is operational, an empirical RF evaluation may be performed, but this is most commonly done for rooftop installations, where reflective surfaces and potential public access near the antennas can make predictive modeling less precise and warrant additional accuracy. Ground-mounted towers typically allow for more straightforward and reliable prediction as access to the areas of highest RF exposure is inherently limited and predictive modeling is typically sufficient.

if there are changes to the design, operating parameters, or new tenants added, it is standard practice to update the RF study to reflect the as-built conditions and confirm continued compliance with FCC exposure limits.

Should Homeland already have propagation reports from the carrier that they are representing? Would these reports be in a map format with details that point to coverage and or capacity issues?

Yes. The tower developer typically relies on propagation reports and related performance data provided by the carrier, or by a consultant working on the carrier's behalf to support the need for a new facility. These materials include empirical drive-test data that document existing coverage or capacity conditions and are used to clearly demonstrate a legitimate network need for the new tower consistent with FCC requirements.

The information is often presented in map format, showing measured, real-world performance under existing conditions, along with modeled projections illustrating how the proposed facility is expected to improve coverage or capacity once added.

Propagation/Coverage Gaps – comments are all over the place on whether there's a problem in the area. Are different methodologies being used to back up statements? Is there an objective methodology that should be used? I've read that providers keep records of "dropped" calls. If so, is this one way to assess adequacy of coverage?

Objective instrumented drive testing is a routine and widely accepted method used to determine the need for coverage or capacity enhancements. This testing is usually performed by the wireless carrier, or can be done using an independent consultant.

Drive testing is conducted by driving a vehicle equipped with instrumented test phones and scanners along planned routes, while the system continuously records signal strength, signal quality, call performance, and data throughput with GPS location.

Analysis of drive-test data is the standard technical basis carriers rely on to demonstrate a legitimate coverage or capacity need in support of a new facility. This is consistent with FCC requirements that wireless infrastructure be justified by network performance needs rather than speculation.

While providers do maintain performance indicators such as dropped-call logs and other network metrics, these are generally not public and are typically used as supplemental information; they are not as direct or informative as objective drive-test data which is the gold standard for evaluating coverage adequacy.

Before approving a tower that is, at least so far, proposed for only one provider, should town require coverage data for other providers?

No. Requiring coverage data from competing providers is generally not practical and is often not feasible. Wireless carriers are typically unwilling to share detailed network performance data with competitors, and such data is not usually available to third parties. Coverage justifications are therefore normally evaluated based on the applicant carrier's network and stated service objectives.

That said, it's reasonable for the Town to ask whether other carriers experience similar issues in the area, and if so, whether they have expressed interest in using the proposed facility, to better understand whether the identified need is carrier-specific or more broadly shared.

If only one antenna, is 130' needed? Could it be lower? Even if homeland currently only has one provider signed up, should town allow taller tower considering future need?

Although only one carrier may be proposed initially, a typical carrier installation includes multiple antennas and associated equipment, and each carrier generally requires its own vertical separation on the tower, on the order of 10 vertical feet per carrier to mount all their equipment and separate from another carrier's equipment. Antennas also perform significantly better when placed above surrounding obstructions such as trees. In this area, mature tree heights can approach 100 feet, and installations below the tree line are less effective. While the current tree canopy may be lower, future tree growth must be considered.

While a tower could be built at a lower height initially and extended later, post-construction height increases are costly and can present engineering challenges. For that reason, towers are often designed upfront to accommodate anticipated future colocation, even if only one carrier is signed on initially.

Under existing law, can town require, as a condition of approval, that there be contracts for a minimum number of antennas?

Requiring a minimum number of antennas or carriers as a condition of approval is generally difficult to enforce and can create practical and legal complications, since carrier participation depends on business decisions outside of the Town's control. A more workable approach is for the Town to require that the tower be designed to accommodate future colocation and that the owner make the facility available to additional carriers on reasonable, non-discriminatory terms.

The Town should require that space be reserved at the top of the tower for public safety antennas, provided by the tower developer at no charge, along with the necessary ground-based infrastructure (such as equipment space, power, and cable management) to support that public safety equipment.

Capacity issues - is there a way to assess how often overcapacity happens – and does it result in no access or slower access?

Overcapacity typically results in slower access first, such as reduced data speeds or delayed connections during peak periods. In more severe cases, it can also lead to failed call setups or inability to initiate data sessions, but

complete loss of access is less common and usually occurs only when congestion is sustained or extreme. In a typical suburban residential area, true capacity problems are relatively uncommon. New 5G infrastructure is more often proposed to improve coverage margins and in-building reliability rather than to address sustained overcapacity. Many complaints that sound like “congestion” are actually caused by weak in-building signals not by a lack of network capacity.

Homeland application says new tower with alleviate overcapacity issue. Should we get more details about this?

Yes. At minimum, ask:

- Is the problem capacity, coverage, or in-building reliability?
- Which sectors/sites are overloaded now?
- What are the busy-hour KPIs that show the problem?
- How does the new site redistribute load (before/after traffic modeling)?

Note the answers should all originate from the provider via Homeland. Without that, “overcapacity” is just a label.

Small towers – do they work, and if so, as an alternative to a tower, whose responsibility would it be to provide specific information on how many small towers are needed, where, and at what height?

Small towers, often called small cells, do work, but they are usually best suited for fixing very localized issues, most commonly in denser or urban areas, rather than providing broad coverage in a suburban setting. How effective they are depends on practical factors like access to fiber, power, available poles, and how close the nodes (the individual installations) can be placed to the homes that need improvement.

If small cells are suggested as an alternative, it's reasonable for the Town to ask why that approach wouldn't meet the objective here and roughly how many nodes would be needed. The applicant doesn't need to design a full plan, but they should be able to explain, in technical terms, why this option isn't workable. All this information would be provided by the carrier or their consultant via Homeland.

Do small towers present a greater risk from emissions?

Not inherently. Small cells typically operate at lower power than macrocells, but they are often installed closer to people. In practice, both types of facilities are designed to comply with FCC RF exposure limits.

Most importantly, if a facility is shown to comply with FCC RF standards, the Town cannot deny the application based on RF health and safety concerns without significant legal risk.

Important: *The Town can and should require the applicant to provide a signed and sealed RF safety study, prepared by a licensed professional engineer, demonstrating compliance with applicable FCC exposure standards for the permitted project.*

Existence of any evidence showing any negative impacts on surrounding area, to residents, wildlife, etc. And is it true that possible health issues CANNOT BE grounds for denying permit?

If the applicant shows FCC RF safety compliance, health concerns cannot be the basis for denial.

The Town should consider and rely on traditional land-use and environmental issues (wetlands, stormwater, tree removal, visual impacts, setbacks, safety/code compliance), as long as findings are grounded in evidence. But the environmental studies, including wetlands evaluations and any applicable SEQRA and SHPO reviews, should be reviewed by qualified professionals to help ensure the Town's due diligence is thorough and well documented.

The following are three questions answered as one:

- **Should the Town rely on VComm's summary of Verizon's propagation studies, or should it request and review the original underlying data (such as drive-test results)?**
- **Is the map presentation sufficient to evaluate the claimed coverage need?**
- **Does the Xavier letter adequately support the conclusion that small-cell or smaller tower alternatives are not feasible?**

Bottom Line first:

In my view, the Town's should require and its experts should review underlying drive-test data or other objective field measurements rather than rely solely on summarized conclusions based on predictions. The predictive modeling shows improvement, but **without supporting empirical data it does not fully establish the extent or practical significance of the claimed coverage gap.**

Details:

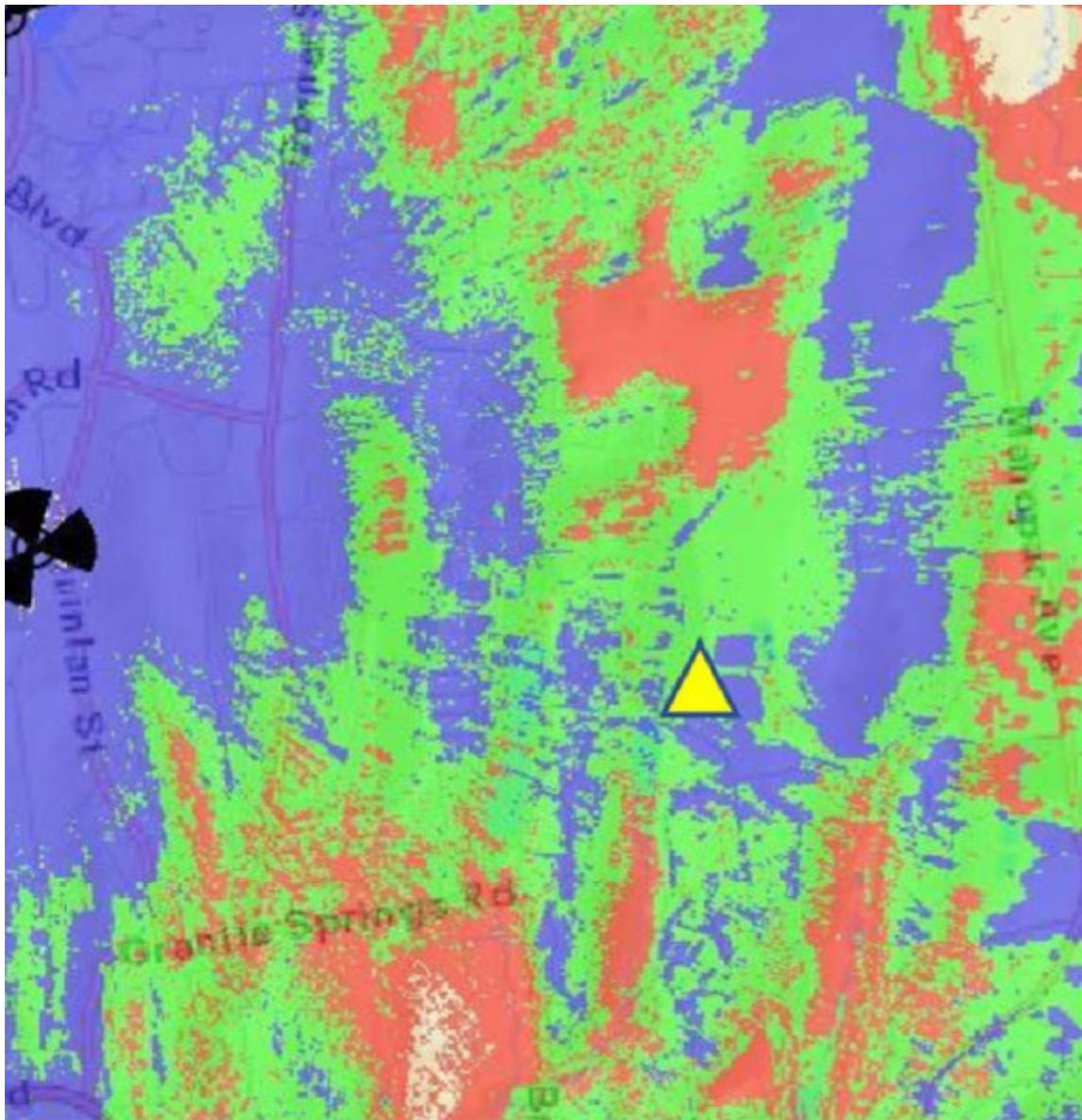
Macro Cell Coverage

The RF coverage maps submitted by V-COMM are predictive models created using standard industry software. These maps are based on assumed inputs such as terrain, surrounding vegetation and buildings, antenna configuration, and selected signal strength thresholds. While this type of modeling is commonly used in the wireless industry, it is based on assumptions and is not be given the same weight as actual drive test measurements taken in the field.

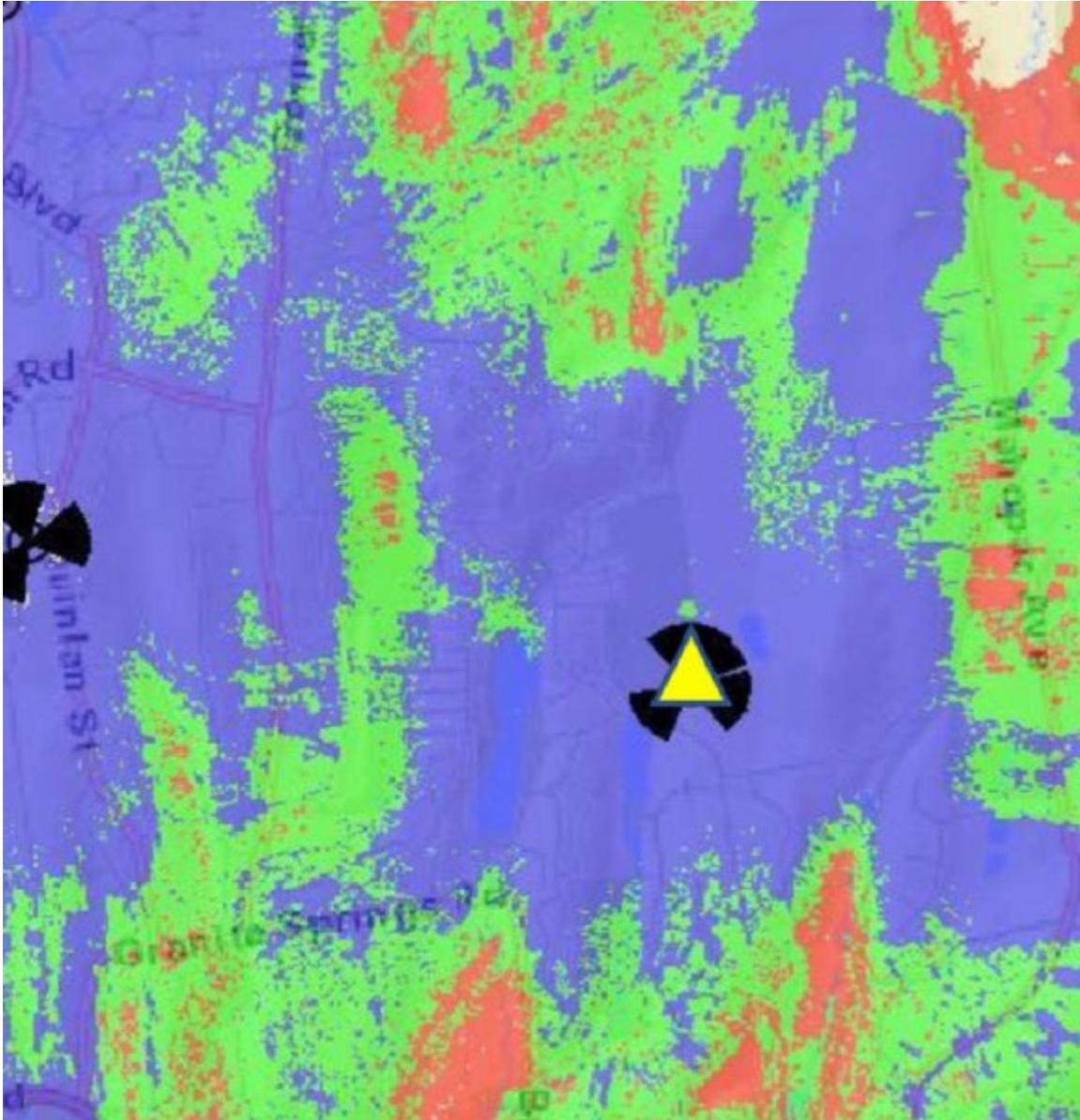
To quantify the modeled coverage improvement, I reviewed the approximately 2-by-2 mile area depicted in Figure 3 (existing coverage) and compared it to the same geographic area shown in Figure 5 (proposed coverage). Using pixel-based analysis software to evaluate the colored signal classifications within the defined improvement zone, I compared the relative proportions of weak, moderate, and strong predicted signal coverage.

Blue and Green coverage are predicted to provide reliable coverage. Red areas are predicted to have unreliable coverage.

Excerpt from Figure 3: Current Predicted Coverage



Excerpt from Figure 5: Predicted New Coverage



Within the evaluated area, the modeled weak-signal (red) coverage decreases by approximately 59% with the proposed tower in place. Using a simple scoring method that assigns values to weak, moderate, and strong signal areas, the overall predicted signal quality improves by approximately 10%. Although the red (weak signal) area drops by about 59%, it was only a small part of the total area to begin with, so when looking at the entire 2 × 2 mile area, the overall signal quality increases by about 10%.

While the modeled results demonstrate a measurable improvement in predicted coverage, they do not, by themselves, establish the existence or severity of a significant coverage gap without supporting empirical performance data from a drive test.

Also important to consider is whether the modeled weak-signal (red) areas correspond to occupied structures, residential neighborhoods, commercial areas, or primary road corridors, as opposed to predominantly wooded ridge lines, reservoir areas, or generally low-population terrain. The practical significance of a modeled coverage gap depends not only on its size, but also on where it occurs.

For completeness of the Town's review of the proposal, the Town should request that Vcomm provide a formal quantified comparison of existing versus proposed conditions using its own modeling data, expressed in terms of percentage reduction in weak-signal area and, and if desired a weighted signal-quality index. In addition, the coverage exhibits would benefit from clearly depicting structures and roadways to allow evaluation of whether the modeled deficiencies occur in areas where service demand is reasonably expected.

PDCCH blocking

Additionally, the applicant's report indicates that the Mohansic 2 Alpha sector (Curry Street at Water Dept property) which provides the current coverage in the area under study has experienced PDCCH blocking levels averaging approximately 8% during the busy hour over the past three months, with a reported peak of 17.75%. The stated performance threshold is 1% blocking.

PDCCH blocking is a capacity metric that reflects the sector's ability to schedule user traffic on the network. Elevated blocking percentages indicate that, during peak usage periods, the sector does not have sufficient available spectrum resources to immediately service all connection requests. From a network engineering perspective, average busy-hour blocking levels materially above 1-2% are generally considered indicative of sector congestion.

The reported levels therefore suggest measurable capacity strain during busy-hour conditions. The proposed facility is described as providing additional low-band and mid-band resources that would offload users from the congested sector and provide capacity relief.

However, blocking data reflects sector-level congestion and does not, by itself, demonstrate the geographic extent of any coverage gap. If the Town wishes to further evaluate the necessity of a new facility for capacity relief, it may be reasonable to request supporting documentation such as detailed busy-hour utilization trends, spectrum loading data, or information regarding alternative mitigation measures (e.g., sector optimization, retuning, spectrum reallocation, or small-cell deployment) that were considered.

Small Cells

Small cells can supplement but they are rarely a direct substitute in a suburban wooded environment for a macro site. The alternative design proposed in the Cityscape report calls for approximately six small-cell facilities. It may be technically feasible to consider replacement or modification of a limited number of utility poles to achieve greater mounting heights (50+ feet) and to accommodate the necessary mid-band equipment. However, the feasibility of such an approach is complex and depends on several factors, including pole-owner approval, make-ready requirements for existing utilities, structural capacity, electric separation clearances, fiber and power availability, and the ability to accommodate associated equipment and backup power. Additionally, the Town would need to evaluate whether a six-node small-cell configuration is realistic;. Small-cell installations at mounting heights of approximately 50 feet or greater, using appropriate indoor penetration assumptions, would need to demonstrate continuous and reliable in-building coverage comparable to that provided by a macro facility.

Xavier letter

My comments on the Power point is there is no side-by-side propagation modeling provided. The specific nature of the service deficiency whether it is coverage, in-building penetration, or capacity was not clearly identified. The assumption that up to eighteen new poles would be required appears to rely on separate infrastructure per carrier, without demonstrating whether shared or neutral-host designs were evaluated or even needed by other carriers. Additionally, the stated 1,000-foot coverage limitation for small cells was not supported by documented technical analysis.

I would respectfully note that the materials submitted do not provide sufficient technical analysis to justify dismissing a distributed small-cell alternative. While a traditional macro tower may ultimately prove to be the most effective solution, the record presented in my opinion does not include the quantitative engineering modeling necessary to support a categorical conclusion that small cells are not viable. Accordingly, before eliminating small cells from consideration, the town should request objective engineering documentation comparing the alternatives so that any decision is based on a complete and technically supported record.

The Hank Menkes text:

I agree with him on some points:

Computer-generated coverage maps are only as reliable as the information and assumptions used to create them. If those inputs are not clearly explained, it is difficult to evaluate how accurate or rigorous the modeling really is.

Maps that show only two colors to represent coverage are also overly simplified. They can hide important differences in signal strength and do not show how

close an area may be to losing reliable service. Wireless coverage does not suddenly turn on or off at a line on a map; it gradually increases or decreases from place to place.

It is also important to recognize that predictive modeling is not exact. Small differences on a map can fall within the normal margin of error.

That said, I do not fully agree with all of the criticisms in his text:

The signal level being used as a benchmark for indoor coverage is not arbitrary; it reflects commonly accepted industry standards. For zoning purposes, the key question is whether there is a meaningful coverage gap—not whether there are very small differences in signal strength from one spot to another.

Similarly, concerns about the map's resolution can sometimes be overstated. If standard industry methods were used, the objection may be more theoretical than practical..

One more comment from Mr. Wilson:

Upon review of the best-server exhibit, the proposed NY578 Granite Springs site does not appear to generate a distinct serving footprint in the surrounding area. For the Town to properly evaluate the applicant's capacity-relief claims, V-COMM should provide a best-server map with the proposed site enabled in the simulation. This would clearly demonstrate the predicted redistribution of traffic from the currently congested Mohansic-2 sector and allow assessment of how many structures and roadway segments are expected to shift serving dominance to the proposed facility and show the predicted impact on blocking and sector loading.