

RYE CIVIC LEAGUE SUMMARY OF VERIZON'S CELL TOWER ISSUES  
(Rev. D)

Links

1. [Verizon application](#) (VerizonAppl020918.pdf)
2. Verizon picture of compound location (see orange ribbons, picture taken from Brackett Rd.) and its visualization of the appearance of the compound and tower ([VerizonCompoundAppearance.pdf](#))
3. Verizon "search ring" for suitable sites ([VerizonSearchRing.pdf](#))
4. Verizon analysis of coverage with and without the proposed tower ([VerizonBeforeAndAfter.pdf](#))
5. Coverage analysis by Town's expert ([PagacikReportWfullSizeFigures.pdf](#)). See the last seven pages for coverage analysis of the proposed tower and other alternatives. Note the somewhat greater coverage range.
6. AT&T drawing showing distances to nearest cell towers ([ATTtowerDistances.pdf](#)). NOTE: Verizon is believed to use the tower behind the Market Basket at Route 1 and Elwyn rather than the very tall WHEB tower behind the Fresh Market on Route 1 used by AT&T.
7. AT&T analysis of coverage with and without the proposed tower ([ATTbeforeAndAfter.pdf](#))
8. Mike Thiel, 34 Brackett Rd. letter ([ThielLtr020218correctingRecordOnVerizonDiscussions.pdf](#)).
9. Verizon position on alternate sites ([VerizonAltSiteDesc.pdf](#))
10. Town Attorney's position on alternate sites ([DonovanAltSites.pdf](#)).
11. Town Attorney's position on Holland ([DonovanOpinionOnPortWayAccess.pdf](#))
12. Verizon's FCC license for the service to be provided from the proposed tower, showing June 13, 2019 expiration ([FCClicense.pdf](#))
13. Resident Survey of Verizon and AT&T Signal Strengths ([signalstrength83018](#))
14. Land/Deed Acquisitions/Restrictions at Ordiorne Point State Park ([Restrictionsmemo.pdf](#))

Overview

The proposed Brackett Rd. cell tower would be located approximately 50 feet from the road in a residential neighborhood. Cell tower applications are unique in that federal law would allow a court to step in and order a tower to be built, notwithstanding disapproval by the town, if the decision amounts to "effective prohibition" of cellular service in the town. Verizon argues that it must be allowed to fill a "significant geographic gap" in its coverage in northern Rye, although there is conflicting data as to the extent of that gap, if it exists at all.

Under federal law, the town, however, retains the authority to control the siting of cell towers and its actions should not amount to an effective prohibition if there are alternate sites that could also fill the gap, if it exists. In this case, a number of alternate sites, all of which

would allow location well back from the road, may exist, although Verizon disputes that. Verizon has submitted coverage maps showing the alleged existing coverage and what it would be with the proposed tower, but has refused to provide any details as to the calculations used to arrive at its maps, citing their proprietary nature.

Verizon's ten variances sought will be heard by the ZBA on Tuesday, September 4, 2018 at 7:00 p.m. The customary five criteria for the granting of variances apply, with a slight twist established by the N.H. Supreme Court with respect to cell towers. If this site is the only feasible one, or is determined to be the ideal one to address a gap, it may be easier to meet the "unnecessary hardship" criteria which normally requires that the variance is made necessary by unique characteristics of the site.

### The Verizon process and the application

In cases where Verizon identifies a deficiency in coverage, its general process is that it comes up with a "search ring," within which it looks for suitable properties on which a cell tower may be installed that would correct the deficiency. Click [here](#) to see Verizon's search ring. During 2017, Mike Thiel, whose property is located within the search ring, just south of the intersection of Brackett and Pioneer roads (referred to as a "DEAD CAND" on the search ring map) was engaged in discussions with Verizon or a related company, regarding a cell tower. However, according to Mr. Thiel, he was concerned about how the tower might interfere with his desire to place a conservation easement on part of his land, so discussions were delayed, however he is now prepared to proceed. Click [here](#). Verizon characterizes the discussions somewhat differently [Click Here](#) (also note why they stopped pursuing Odiorne State Park).

In the meantime, Verizon negotiated a lease on the Lintz property, a bit further south on Brackett Rd., and outside of its search ring (the Thiel property is inside the search ring). During December, 2017, Verizon applied to the Zoning Board of Adjustment ("ZBA") for the necessary variances and to the Planning Board ("PB") for the necessary waivers and special use permit. The proposed facility would incorporate a 30x40 foot fenced compound approximately 50 feet to the east of Brackett Rd., and a 130 foot monopole tower. Click [here](#) to see picture and visualizations of what the compound and tower would look like. The tower and compound would provide for up to 3 or 4 carriers to be collocated. The variances are to 10 different sections of the Rye Zoning Ordinance. Click [here](#) to see Verizon's latest application and [here](#) to see the variances sought. To date, the ZBA and PB have held three joint meetings and two joint site walks dedicated to the application.

Click [Here](#) to get to all of the meeting minutes and videos (scroll down).

On September 4, 2018 at 7:00 p.m. the ZBA will meet without the PB and hold a public hearing to consider the variances (currently scheduled for Town Hall but check the town website for the latest as the meeting will likely be moved). A final up or down vote by our ZBA is expected that night, or shortly thereafter. The PB will likely consider the application shortly

thereafter since the “shot clock” setting the time by which a decision must be made has been extended by Verizon only through the end of September, 2018. If the ZBA denies one or more of the variances, Planning Board action would probably be moot as the PB may not approve an application that violates the Zoning Ordinance unless the ZBA has granted all necessary variances.

### Overview of the legal issues

The ZBA will use the five criteria that it always uses to consider variances. Click [here](#) to see the criteria (RSA 674:33, I(b)). Of these, the most important is that unnecessary hardship must be shown, which requires that the property have “special conditions that distinguish it from other properties in the area.” In other words, characteristics of the property that are shared by other properties in the area are not enough. In Daniels v. Town of Londonderry (click [here](#)), the New Hampshire Supreme Court decided, in the context of cell towers variance applications, that the fact that a property is centrally located in a “significant geographic gap” in coverage, is the correct topography or is of adequate size to eliminate the gap may be sufficient to make it unique enough to satisfy the unnecessary hardship criteria, as would the existence of no feasible alternatives.

Normally, federal law does not apply to local zoning decision. However, the Telecommunications Act of 1996 (“TCA”) established special criteria (click [here](#) to see 47 U.S.C. §332(c)(7)(B)) which allows a court (usually a federal court) to override a local land use board (i.e. ZBA or PB) when the town has prohibited, or effectively prohibited, cellular service. See Second Generation Properties v. Town of Pelham (click [here](#)). The TCA specifically allows towns to regulate the placement and construction of cell phone facilities (§332(c)(7)(A)). A “significant gap” that a carrier is precluded from filling might allow the court to step in and order the tower to be built. However, the burden is on the cell phone carrier to demonstrate that the gap could not be filled by any other means. Also criteria that are impossible for the applicant to meet would likely amount to an effective prohibition. Towns are permitted to consider aesthetics as long as they don’t effectively prohibit cellular service.

In this case, the Rye Zoning Ordinance (click [here](#)) has established (see section 505.3) an overlay zone for the location of cell towers. The only overlay zone site enumerated in the northern part of Rye is at the Rye Elementary School. The only existing cell tower in Rye is about 1270 feet south of Grove Rd. on town conservation land. The town receives approximately \$50,000 annually in rental for the use of that land, which goes into a special fund used to purchase ambulances and fire trucks. At one time there were also cellular antennas inside the steeple at the Rye Congregational Church, however those are believed to have been removed. Both the Grove Rd. parcel and the church are within the overlay zone. Since the proposed site on Brackett Rd. is in the Single Residence District, and not within the overlay zone, and since cell towers are not a permitted use, even by special exception, within the district, a variance to section 203.1 would need to be obtained. Other variances sought relate to the wetlands buffer, on which the tower and compound would encroach, the requirement

that the tower be located 120% of the tower height from a residential building and the cutting of live trees more than 4.5 inches in diameter within the wetlands buffer.

Another of the five criteria for variances is that the “spirit of the ordinance is observed.” The basic purpose of segregating uses by district and restricting residential districts to residential uses has been determined by courts to be a legitimate purpose. According to the 2017 Zoning Board Handbook (click [here](#)), published by the New Hampshire Office of Strategic Initiatives, page II-11, “[t]he board cannot change the ordinance,” and, “[i]f an ordinance prohibits industrial and commercial uses in a residential neighborhood, granting permission for such activities would be of doubtful legality.”

Also at issue may be whether or not the variance would be contrary to the public interest and whether the values of surrounding properties would be diminished.

If the ZBA and/or Planning Board grant or deny any of the variances, waivers or the special use permit, either the applicant, abutters and “directly affected” parties, which likely would include those owning property in the immediate neighborhood, would have a right to appeal to the Superior Court. There are two bases on which a ZBA or PB might be overturned: the facts or legal errors. If the Superior Court determines that the ZBA or PB made a legal error, for example by applying the wrong legal standard or misinterpreting the applicable law, the court will overturn the decision. However, if the ZBA or PB simply view conflicting evidence differently than the Superior Court does, the Superior Court would not second guess them and overturn the decision unless it determines that it is unreasonable. Nevertheless, there must be some factual support in the documents or oral testimony supporting each of the factual findings of the board. It is thus very important that parties appearing before the ZBA or PB put forth persuasive facts that the board will accept, rather than rely on the Superior Court to overturn the factual findings of the board.

The TCA provides a second way that the applicant could challenge a ZBA or PB decision. The TCA would not be available to residents. Under the TCA, an assertion that the town has effectively prohibited cellular service will be made “de novo,” or starting from scratch, without any deference owed to the factual findings of the ZBA or PB. The TCA also provides that the decision must be supported by “substantial evidence,” however this is more deferential than the words imply. As long as there is more than a “mere scintilla,” in other words a spark or trace, of evidence supporting the factual finding, the court will not disturb it. The TCA also includes a “substantial evidence” standard is similar to that which the Superior Court applies in reviewing factual findings.

During August, AT&T expressed an intention in collocating on the proposed tower and has performed its own coverage analysis. The town attorney has opined that unless a collocation results in a substantial modification to the existing tower or mount, as defined in section 505.1 of the Rye Zoning Ordinance, the use would need to be allowed without further review by the PB or ZBA. That would also presumably be true of a second or third carrier to be collocated on the tower.

### Whether there is a “significant geographic gap”

Verizon has prepared maps that purport to show where the alleged coverage gap is and how a tower at the new site would fill the alleged gap. Click [here](#). The maps show a green area where the signal is estimated by Verizon’s consultant to be above -95 dBm. Maps submitted by AT&T click [here](#) show a green area where the signal is above -83 dBm and an orange area where it is above -93 dBm, based on estimates by AT&T’s consultant (which is the same firm). The white areas indicate signal strengths estimated by the consultant to be below the -95 dBm or -93 dBm levels.

The term “dBm” indicates the signal level relative to one milliwatt, or one thousandth of a watt, and refers to the signal picked up by the small cell phone antenna (usually located inside the phone) before being amplified by the phone’s electronics. On the dBm scale, 0 dBm is one milliwatt, positive values are greater than one milliwatt and negative values less. The scale is a logarithmic one, so each 10 dB is a factor of 10 in signal power, and each 3 dB is a factor of two. AT&T has prepared similar maps. Click [here](#).

The town’s consultant, Ivan Pagacik, has submitted his own set of coverage maps, generated using data on the effective radiated power from the cell phone tower provided by Verizon. These maps show somewhat more extensive coverage than those provided by Verizon. For example, the coverage from the proposed tower extends only to the area of Wallis Rd. on the Verizon map, but as far as Washington Rd. on Mr. Pagacik’s map. Click [here](#) to see the Pagacik report. The maps are the final seven pages.

While -95 dBm might appear to be a very weak signal, it is actually several orders of magnitude above what can be detected with a good receiver (the cell site and the cell phone both have receivers, the former is typically much better, as it must deal with the lower power level of cell phones compared to cell towers). The key determinant limiting how weak a signal may be and still be decoded is noise, which is generally generated by heat causing the thermally-induced motion of electrons.

Tests conducted by two residents at various points in northern Rye (almost all of which are white areas according to the Verizon and AT&T maps) indicate that Verizon’s signal strength varied from -94 to -120 dBm, but connections were made even at the signal strength of -120 dBm. Of 16 locations tested, no connection was made in only one location, which had a signal strength of -106 dBm. AT&T signal strengths, measured at the same 16 locations, were between -79 and -118 dBm, and again a connection was made at all but one location (a different one), which had a signal strength of -109 dBm. Click [here](#) to see the results of these tests.

There are various cell phone technologies. Currently, both Verizon and AT&T are in the process of rolling out LTE, a 4G technology that provides for increased data speeds and certain other advantages. Verizon's 3G technology is CDMA. AT&T uses different 3G technologies. Note that four of the Verizon calls were made with CDMA connections, as, for whatever reason, the phone chose not to connect using LTE.

None of the coverage maps submitted by either carrier reflect use of any 3G signal coverage. Thus, there may be coverage using technologies other than LTE that is not reflected on the maps. This raises the question of whether there may be gap once those other technologies have been considered. In addition, the white areas do not mean that there is no service, only that the coverage is not up to the carrier's standards.

It is also important to recognize that there are tradeoffs between the bandwidth, the data rate and the noise. Noise is difficult to avoid as it is generally caused by the thermal agitation of electrons as a result of heat. The higher the bandwidth, the more noise that there is to mask the signal. The data rate that may be achieved is a function of the bandwidth used and the signal to noise ratio. The stronger the signal, the higher the data rate that may be achieved for a given bandwidth.

The standards that a court would use to determine whether there is a "significant geographic gap" are unclear. A "significant geographic gap" is something more than just a "dead spot" where service might be unavailable. In the Second Generation case (page \*631), the court said that "[w]e have concluded that a town's refusal to permit a tower that is needed to fill a 'significant [geographic] gap' in service, where no service at all is offered in the gap, would violate the effective prohibition clause." For there to be an effective prohibition, however, "the burden for the carrier... is a heavy one: to show from language or circumstances not just that this application has been rejected but that further reasonable efforts are so likely to be fruitless that it is a waste of time even to try." Second Generation page \*629. The language of Second Generation suggests that service that exists, but is below the carrier's standards, could not result in an effective prohibition.

Two residents of Brackett Rd. had sent written questions to be answered by Verizon at its July 31, 2018 work session at which no public input was to be taken. The Town Attorney, based on information provided by the Selectmen's Representative to the Planning Board, whittled one set of questions down from 29 to 8, acting on their own without a vote of either the ZBA or the PB. Of the questions excluded, many sought to arrive at a description of how Verizon had calculated its coverage maps. Verizon responded to one of the questions that was asked, regarding the noise power assumptions and the sources of noise by saying:

"The coverage plots prepared on behalf of Verizon are based upon the maximum allowable overall path loss defined in Verizon's LTE link budget, which considers among other factors both thermal noise and noise figure assumptions of the base station system and user equipment (UE). The specific details behind these assumptions are considered proprietary."

Similar responses referring to proprietary information or giving vague answers were included in the responses to three other questions. There are other instances where they have refused to provide information that they consider proprietary.

### Alternate sites

During the various hearings and throughout the process, the town and Verizon have discussed the various alternative sites. Click [here](#) and [here](#). The Thiel site was discussed above. That is the only alternate site recently considered by Verizon in which it appears that conversations with the landowner have occurred.

The Pulpit Rock tower was considered, but, according to Verizon, in 2008, the “Friends of Pulpit Rock Tower” persuaded NH Fish & Game to abandon efforts to lease space on the tower. In 2011 the town passed warrant articles establishing the Heritage Commission as a vehicle to purchase the tower, but the purchase could only occur at no cost to the taxpayers, after there were commitments to provide at least \$90,000 in private funds for repairs. That has not yet happened. The warrant article would prohibit the installation of cellular telephone facilities on the tower, but since NH Fish & Game still owns the tower this is not applicable. ZBA Chairman Patty Weathersby, who lives near the tower, was one of the major forces in the Friends of Pulpit Rock Tower. This is presumably the reason that she has recused herself from this case.

During 2009 and 2010, according to Verizon, a site at Odiorne State Park was considered and a lease with the State was pursued, but political pressure by residents succeeded in persuading Verizon not to sign the lease. While Verizon claims that “several monthly Zoning Board meetings were skipped for want of a quorum,” in fact no meetings were skipped. At the August 4, 2010 meeting, there were only four members present, still a quorum, but less than the normal five. According to the minutes of that meeting, other cases were heard but Verizon’s cell tower case was continued to the September meeting so that it could be heard by five members. There is no mention of the case on the September agenda or any subsequent 2010 ZBA agenda. See the Restrictions summary memo from NH Parks and Recreation Click [here](#)

The situations with Pulpit Rock and Odiorne would not appear to amount to decisions of the town, given that the town has not yet purchased the Pulpit Rock tower. Rather, according to Verizon’s version of events, the locations were rejected as they were unable to negotiate leases with the state. The state undeniably has the right to decide whether or not to lease its property. The question then arises as to whether the actions of the state may legally be attributed to the town and used as ammunition to show that the town is effectively prohibiting cellular service.

The location at 505 Ocean Blvd. is now being considered. This is also state-owned on the west side of Ocean Blvd. from the Seacoast Science Center. The state-owned land in this area is extensive and there are multiple possible sites for the location of cell towers.

Verizon also discusses the Condon property near the intersection of Port Way and Holland Dr., which are both off of Parsons Road. The Town Attorney has agreed that there is no access to that parcel. However, a nearby 14 acre town-owned parcel, map 23, lot 1 would be a candidate. Port Way is a private road, and Holland Dr. is a town road. While the tax maps show those as intersecting, in fact the paved portions do not extend very far from Parsons Rd. There are dirt and gravel roads in the area of the intersection of the paper streets, but these are not straight as indicated on the tax map. Verizon's argument is that, since Port Way is private, and the town-owned parcel is on the far side, even though Holland Dr. intersects with Port Way as a paper street, there is no access. The Town Attorney has opined otherwise, saying that access running back to an 1845 deed would need to be reestablished, possibly through court action, but that should be possible. Click [here](#). Verizon has submitted no evidence that it has approached the owner of Port Way to see if an easement might be obtainable. The town parcel location would be about 800 ft. or more from the paved portions of Holland Dr. and Port Way, depending on how far back in the woods the tower would be located.

The Rye Elementary School Soccer Field parcel, according to Verizon, was considered a number of years ago, but rejected by the School Board. That parcel (tax map 18 lot 34) extends back over 3100 ft. from Wallis Rd. to the Portsmouth line, although the back 1900 ft. is wetland, according to the town GIS (i.e. online tax) map. Aerial photos accessible via the GIS system indicate that the front 400 ft. is cleared, while the rest of the site is forested. If located outside of the wetlands as far as possible from any school building and the field, it would be located in a wooded area, about 500 ft. away from the nearest school building and over 600 ft. from the back of the field.

This year, the School Board agreed to allow Mr. Pagacik to investigate this possible location. There is a new SAU 50 Administration now, and some, if not all, of the School Board members have changed. The minutes of the 2009 School Board meeting indicate, not that the proposal was rejected, but that the School Board had other priorities and would not be able to focus on the proposal. According to the report of the town consultant (see Figure 3, click [here](#) the soccer field site would provide coverage for most of Rye that currently is white area (below -95 dBm in signal strength), but would leave the relatively uninhabited area along Ocean Blvd. near Odiorne State Park uncovered. The Verizon maps for this option, being less extensive, do not show this.