



RECEIVED

AUG 25 2016

FILE

PLANNING BOARD  
GRAFTON, MA

## Wireless Facility Permit Application Review: 104 Creeper Hill Road Grafton, Massachusetts

---

### Overview

The Town of Grafton Planning Board engaged Isotrope, LLC to review the applications tendered by U.S. Wireless, Inc. and Vertical Bridge [Holdings, LLC?] for a Special Permit and Site Plan Approval for a Wireless Communication Facility.

The proposal for a 175-foot tower includes a committed personal wireless service provider, Verizon Wireless, at the 120-foot height (center of antennas). The chain of ownership and responsibility is unclear, as the two applicants are referred to as “partners” and if an approval is forthcoming, there might be a need to obtain more information about one or both applicants.

- If visual impact of the 175-foot tower is a significant concern, the Planning Board (“Board”) could consider of approving a lesser height without materially impacting the co-location potential of the tower. Verizon only requires about a 125-foot-tall tower, and future carriers are unlikely to need or want such a significant height of 175 feet for network management reasons. Approval of an extendable tower design would enable the owner to obtain approval to expand the tower for some later use if the need presented itself.
- The Verizon coverage analysis supports the position that there is-less-than reliable Verizon service in a section of Grafton that the tower would serve.
- Emissions evidence confirms the facility is designed to be compliant with FCC safety standards for human exposure to radio frequency energy.
- The applicant seeks waivers of various requirements. Those considered in this report include a very large setback requirement of 350 feet, an underground utility requirement of dubious benefit in the present application, an outdated 5-foot antenna length limitation and a landscaping requirement where the landscaping will not be visible to the public. Other waiver requests are procedural or environmental in nature, which are left to the Board’s capable discretion.



RECEIVED

3102 8 1 2014

Isotrope, LLC

- With respect to the bylaw prioritization of sites, the proposed facility is in the third level of preference, according to the applicant, because it is in the OLI district. Note that the second preference, above this, is “locations where existing topography, vegetation, buildings or other structures provide the greatest amount of screening.” The Board could consider whether this relatively remote, undeveloped site in the northwest corner of Grafton qualifies the proposal for preference level 2.
- The first level of preference is existing structures, and it is obvious that there are existing power transmission poles adjacent to the site. While this is the first preference under the bylaw, there generally is a limit of one carrier per pole, with no co-location capability on existing transmission poles. In addition, the height of these poles is not on the record at this time, and might or might not be a sufficient height for Verizon’s coverage needs. Finally, it is more cumbersome to safely install and maintain wireless facilities on utility transmission poles. Consider whether the regulatory burden and lack of co-location potential in requiring first-preference use of the transmission poles is more consistent with the bylaw than approving a new tower with substantial co-location potential on Town land in a second-or-third-preference district.

## Discussion

### Tower Height

With Verizon using the 120-foot height on a 175-foot tower, a full 50 feet above Verizon would be left vacant for potential co-location of up to five future tenants. Moreover, about three additional antenna heights of about 90 through 110 feet (on center) have substantial potential for being of value to personal wireless service providers. The proposed 175-foot height risks never being utilized, as wireless carriers tend toward lower-height facilities to cover smaller footprints and minimize self-interference in their networks.

If there is are any objectionable visual impacts of the 175-foot height, the height of the tower might be reduced substantially without reducing its usefulness for co-location. Alternatively, sometimes a tower is approved at a lesser height with the acknowledgement that under a future application the height can be extended subject to a showing of need. In Medfield, a tower was originally approved to one height, with structural capability to be extended by up to 40 feet. After several carriers joined the tower, a new carrier could not utilize the lesser height available and obtained approval to extend the tower by 20 of the 40 feet that was structurally available. In the past decade, the tower has not needed to be extended the final 20 feet. If there are substantial visual impact concerns, this incremental approach helps ensure the tower will only be as tall as necessary. If there are no material visual impact concerns, it is much less burdensome to the applicant and its tenants to approve the full height requested.



## Property Line Setback

The applicant seeks waivers of various requirements, as permitted at the Planning Board discretion under the bylaw (§5.8.10), including property line setback in §5.8.6.1. In a general sense, a 350-foot setback for a 175-foot tower requires the use of a property that, if it were perfectly square and the tower in its exact center, would be about three acres. This kind of large setback can be counterproductive in areas where the options for compliant parcels are limited.

## Underground Utilities

An underground utility waiver is requested due to the long run of utilities from the street to the site (>800 ft). It is typical in zoning regulations to require underground utilities where the visual impact of new-above-ground utilities would be undesirable. In view of the fact that this is in the OLI District, across the street from a railroad and a substantial metalworking factory, and adjacent to a clear-cut transmission line right of way with three sets of high voltage transmission lines, the effect of any visual impact of new above-ground utilities at the site is questionable. Perhaps a full waiver of undergrounding of utilities is in order.

The applicant's information regarding undergrounding of utilities is inconsistent. The application materials (at §5.8.6.9) describe the run of "overhead utilities from Creeper Hill Road to a point along the existing access road and from there underground along a proposed 20 foot wide access and utility easement to the Facility." In contrast with the written proposal to place a portion of the utilities underground, Site Plan Z-1 (July 1, 2016) in the application materials shows entirely above-ground utilities all the way from Creeper Hill Road to the site, spanning four utility poles at approximately 300 foot intervals on a ten-foot-wide utility easement adjacent to a 25-foot-wide access easement.<sup>1</sup> Running above ground from the street and burying the last 200-300 feet of utilities near the site (if that is what is proposed) does not seem to provide the Town any benefit.

## Antenna Size

The applicant seeks a waiver of the panel antenna size limit of 5 feet height (§5.8.6.10). The radio frequency data supplied by Verizon shows some panel antennas greater than 5 feet tall (6 and 8 feet). These antennas are used by the 700 MHz system. The 2100 MHz antennas are about 4 feet tall. 700 MHz is a much lower frequency than 2100 MHz, which means 700 MHz has a greater wavelength. The dimensions of an antenna are dependent in part on the wavelength of the frequency in use. The 700 MHz antennas need to be much taller than a

---

<sup>1</sup> A separate plan, stamped and dated February 18, 2016 shows a 20-foot-wide easement following the existing access road. It is assumed that this plan serves as a source for survey data, and its easement route has been superseded by the Site Plans dated July 1, 2016.

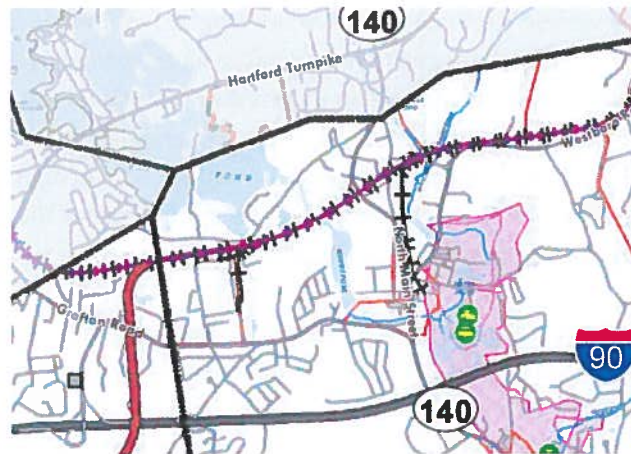


Isotrope, LLC

similarly performing 2100 MHz antenna. The 5-foot-tall rule is out of date and should be waived for this application.

### Wellhead Protection

The applicant seeks a waiver of the wellhead protection setback, if it applies. Based on the 2012 Priority Development and Preservation Base Map: Water Resources, published by the Blackstone Valley Prioritization Project, the nearest wellhead protection zone is more than a mile from the site. A screen grab of a portion of that map is provided below, with the protection zone in pink. If this map is up to date, the wellhead protection setback does not apply.



### Landscaping

The applicant seeks a waiver of the landscaping regulations of §5.8.6.13. Considering the facility is more than 800 feet from the street and is secluded in a large heavily vegetated parcel, there appears to be no benefit from requiring a carefully landscaped installation. Moreover, the access way does not follow a straight line from the road through the natural vegetation to the site, which prevents a direct view of the facility’s ground development from the public way.

### Formalities

The applications included in the application package have no date. The application cover letter is dated July 6, 2016<sup>2</sup>. Moreover, the application lists “U.S. Wireless, Inc and Vertical Bridge” as co-applicants. The subject parcel is owned by the Town of Grafton (the “Town”). An authorization letter signed by the Assistant Town Administrator indicates the Town authorizes “US Wireless, its partner, Vertical Bridge Holdings, LLC or its attorneys or agents” to pursue permitting of the proposed facility on the parcel.

---

<sup>2</sup> Note that the 150-day FCC shot-clock from the actual date of filing of the application applies.



We have not reviewed the lease between the Town and the party that won the right to enter into a lease with the Town, and therefore have no further information on the party that officially has leasehold rights to the site. We simply raise the question as to whom any Special Permit might be issued so that there is no uncertainty about the chain of responsibility. We leave it to the Planning Board and advice of counsel to determine the best way to clarify the situation.

### **Telecommunications Act of 1996 Considerations**

Under the TCA, the Board has responsibilities to act in such a manner as to avoid effectively prohibiting the provision of personal wireless services. The application includes a licensed provider of personal wireless services. The application includes information that shows the Verizon coverage in the northwest portion of Grafton is substandard.

Based on the information available at this time, it is reasonable to conclude that the existing power transmission poles are of sufficient height to substantially provide for the coverage the applicant seeks in Grafton. Such installations have been installed and maintained by the wireless carriers throughout Massachusetts. While they are less desirable from the perspective of a carrier, they are nevertheless typically practicable. Evidence in opposition to this preliminary assessment would be necessary to support any claim that the transmission poles are not viable for some reason.

If the Board were inclined to deny approval of the proposed facility, it must have substantial evidence in the written record supporting the denial. In addition, an assessment of whether there is a gap in service and whether there are reasonable alternatives should be part of the Board's hearing record. These two issues are discussed above in this section.

David Maxson, WCP  
August 24, 2016

