Errata & Addenda to 2d Edition as of 2019.07.31

§ 1.8 Should you apply for a building permit?

In my humble opinion, there are only two reasons you should ***not*** apply for a building permit.

The first reason is that you have, in writing, and only if it is in writing, a statement from the Code Enforcement Official that says no building permit is required. If it is not in writing, you will have a devil of a time proving, 10-15 years later, that a prior building inspector never required a building permit. Even if the ordinance is clear that no building permit is required, I would try to get a letter from the building inspector quoting the zoning ordinance *and* saying that, as a result of the ordinance, no building permit is required. Don't think it can be done? Matt Strelow, KC1XX, obtained such a letter in the small town of Mason, NH. The Building inspector signed it and the letter says that no building permit is required.

The second reason you might decide not to apply for a building permit is if your state building code reads something like this:

> 3109.1 Permits not required: A building permit is not required for roof installation of antennal structures not more than 12 feet (3658 mm) in height for private radio or television reception. Such a structure shall not be erected so as to injure the roof covering, and when removed from the roof, the roof covering shall be repaired to maintain weather and water tightness. The installation of any antennal structure mounted on the roof of a building shall not be erected nearer to the *lot line* than the total height of the antennal structure above the roof, nor shall such structure be erected near electric power lines or encroach upon any street or other public space.

As a result of such a provision, if your antenna is no more than 12 feet above the roof-line, no building permit is required. Note that this provision appears to have been deleted from the state building code in many states in recent years.

§ 1.8.1 What happens if you don't apply for a building permit?

There will always be people will advise you: "'Tis better to beg for forgiveness than to ask for permission." While this may work in business life, it is terrible advice when you are confronting civil or criminal law. There are consequences to forging ahead without a building permit.

Having said that, if you have already built without a building permit, see *Brower v. Indian River County Code Enforcement Board*, 1993 WL 228785 (Fla.Cir.Ct. 1993), where the Court ruled that an application by W4DKB, in the face of an unvarying maximum height, would have been a useless act. See § 14.2.2.2.

On the other hand, *Nesbitt v. Cobb County, GA* (U.S.D.C. No. District of Georgia Atlanta Division, C.A. 1:13-CV-881-ODE, October 9, 2014) held that the late N4BNM, by building his towers first, and not applying for a special land use permit (a SLUP), "robbed the County of the opportunity to attempt . . . a compromise." Put another way, an application for a SLUP might have been useful.

§ 1.8.1.1 No "Vested Rights"

So what are "vested rights"? Glad you asked. Here's the way a Nevada Court described them in a landmark case.

> It would be an abuse of discretion in the instant case and contrary to principles of equitable estoppel and the vested rights doctrine if the City were allowed to retroactively enforce reinterpreted zoning laws or to assert previously waived building code infractions after funds had been loaned and construction nearly completed. We hold that when a building permit has been issued, vested rights against changes in zoning laws exist after the permittee has incurred considerable expense in reliance thereupon. [4] See *Town of Paradise Valley v. Gulf Leisure Corporation*, 27 Ariz.App. 600, 557 P.2d 532, 540 (1976); see also annot. 89 A.L.R.3d 1051 (1979). As was the court in Town of Paradise Valley, we are persuaded by the position succinctly summarized in Deer **[686 P.2d 234]** Park *Civic Association v. City of Chicago*, 347 Ill.App. 346, 106 N.E.2d 823, 825 (1952):
>
> The general rule is that any substantial change of position, expenditures, or incurrence of obligations under a building permit entitles the permittee to complete the construction and use the premises for the purpose authorized irrespective of subsequent zoning or changes in zoning. 8 McQuillin Municipal Corporations, 272 (3rd ed.).
>
> It would also offend sound public policy if cities were allowed to retroactively apply modified building rules and zoning changes so late in the life of a project. Construction lenders would have small assurance, indeed, in the credit worthiness of Nevada projects approved by governmental authority.
>
> *City of Reno v. Nevada First Thrift*, 100 Nev. 483 (Nev. 1984), 686 P.2d 231, 233-234 (1984)

Vested rights can be very important if you later want to rebuild or replace an antenna system.

§ 1.8.1.2 Extra Fees for "post-construction" permits

If caught by the authorities while having built an antenna system without a building permit, your local ordinance may specify a higher fee for the "post-construction" permit process. This is a gentle way of encouraging people to come in and do the right thing the first time.

§ 1.8.1.3 May make yourself ineligible for a variance

There are many boards that have taken the position that if a variance is required for something proposed, but it has already been built, then the owner has "created his own hardship." However illogical this may be in a particular case, it is hard to generate sympathy for a problem the applicant himself created.

§ 1.8.1.4 Civil Penalties

Some municipalities impose a penalty, perhaps in addition to a higher application fee (see above), for those who show up to apply for a building permit only after they've "been caught."

§ 1.8.1.5 Criminal Prosecution (My Hero: K5HAB)

Almost every zoning ordinance has a portion of it that allows a code enforcement officer to prosecute continuing violations of the ordinance as a crime. It is usually a misdemeanor, a crime that carries a

penalty, generally speaking of up to six months in jail. So don't worry, you'll be behind bars locally, and not in the big house up the river.

In the author's long career, criminal complaints have been made against radio amateurs only twice. Neither was ever going to succeed, because, while the zoning ordinance had been violated, it was an illegal ordinance. When a zoning ordinance violates federal law (like PRB-1), it is void. And you can't go to jail for violating an ordinance that is void.

However, you may not be a hardened criminal, and it could cause you to lose a lot of sleep should you be accused of a crime.

On one occasion I was chatting with Peter Naumberg, K5HAB, one of only two clients ever accused of the crime of building an antenna system without a permit. I asked him if he was having any trouble sleeping at night due to the outstanding criminal complaint against him. His reply: "Before I moved to Albuquerque, I was a developer in New York City. This is nothing." Here's the end of the story: Eventually the county filed a motion of *nol prosequi* (no prosecution) in the criminal complaint and he was granted a building permit.

[Nuisance case]

§ 1.8.1.6 If you get caught, $, and ME

There is a word for people who get caught building without a permit: clients. As mentioned above, building without a permit may not be the end of the world, but it certainly complicates your life. Now you most likely must hire a lawyer, or things could turn out badly.

So prepare yourself to find the right lawyer, learn the costs involved in hiring the attorney and applying for the necessary permit(s), and set about to make your lawyer your new best friend.

Stepping away from the question of building without a permit . . .

§ 1.9 Should you apply for a variance? NO

Do not apply for a variance, unless you have really really thought the matter through.

First, is it possible that a requirement for a variance is legal? Yes, there is a possibility that a requirement for a variance may be legal, but . . . wait for the explanation below.

How could a requirement for a variance be legal? Well, for one thing, the FCC says that a variance could be legal. In paragraph 25 of the original PRB-1, the FCC wrote:

> We will not, however, specify any particular height limitation below which a local government may not regulate, nor will we suggest the precise language that must be contained in local ordinances, such as mechanisms for special exceptions, variances, or conditional use permits.

So the FCC allows that "variances" may be legal mechanisms. How? The answer is that it depends on the **test** for a variance. You'll have to read the requirements of your locality to see if it is possible to meet the variance tests (often referred to as "the required findings"). If it is *possible*, no matter however improbable, then you may well lose a lawsuit claiming that he local zoning ordinance is illegal on its face. You may be better off to apply for a variance and later file in federal court claiming that the ordinance fails the "reasonable accommodation" test "as applied."

But if you, or anyone, could *never* meet the requirements for a variance as displayed in the ordinance, or under state law, then there is no reasonable accommodation in the ordinance "on its face." If that is the case, do not apply for a variance. There are several reasons.

1.9.1 There is no guarantee you will get one.

Barring a bribe (and please *please* don't even think about trying) . . .

Do you meet the criteria?

> (7) Powers of board. The board of adjustment shall have all of the following powers:
> . . .
> (c) To authorize upon appeal in specific cases variances from the terms of the ordinance that will **not** be **contrary to the public interest**, where, **owing to special conditions**, a literal enforcement of the provisions of the ordinance will result in **unnecessary hardship**, and so that the spirit of the ordinance shall be observed and substantial justice done.

Source: US Department of Commerce, "A Standard State Zoning Enabling Act" (1937) *(emphasis added)*

What does that mean?

- *Features not shared by other properties in your zone*
- *Because of the special conditions, hard to develop the property within the restrictions for the zone*
- *Not contrary to the public interest as reflected by restrictions for the zone*

Additional Concepts

- *Not contrary to the public interest as reflected by restrictions for the zone*
- *You are creating the hardship*
  -- argue that you didn't create intervening terrain
  -- argue that desire for effective communications (a laudable federally recognized goal) is not creating a hardship
- *Will not alter the character of the neighborhood*
  -- an ordinary accessory use of a residence

Discretion to Say No is Bad

- *Variances involve the exercise of judgment– inherently hard to appeal*
- *No good cases on PRB-1 and variances*
- *Have you waived right to claim ordinance was illegal if you decide to play the game?*

My Advice: The Fat Filing

- *Apply for a building permit*

- *Answer every objection*
- *Practice tip: Sample fat filing on the CD accompanying this book*

Does this work? Yes! Example Proofs (not a complete list)

- *Prescott, AZ (N7CW)*
- *Citrus County, FL (K3TW/4)*
- *A town in Maine*
- *Polk County, GA (W4WMT)*
- *Ames, IA (K0KT)*
- *Frelinghuysen, NJ (K2NG)*
- *Morris Township, NJ (N2IS)*
- *Whately, MA (KB1IPR)*
- *Putnam Twp., MI (W8SS)*
- *West Lampeter, PA (N2NY/3)*

= Σ 9 states

Why does it work?

- *Avoids finding that the ordinance is illegal*
- *Preserves the zoning ordinance as written*
- *Saves costs of litigation (to town!)*
- *Will be upheld if appealed by a neighbor (KB1IPR case)*

Conclusion

- *Without a really good reason, do NOT file for a variance, especially if you built without a building permit*

The plain language of Del. Code title 9, section 6917 precludes a variance where the applicant has created the exceptional practical difficulty; "balancing" is irrelevant.

Bd. of Adjustment of Sussex County v. Verleysen, 2012 WL 402553 (De 2/8/2012).

The opinion can be accessed at: http://courts.delaware.gov/opinions/download.aspx?ID=168070

Practice tips:

- *File for a building permit*
- *Make it a "fat filing"*
- *Make it known, in writing, that you are willing to negotiate*
- *Make it known that you are willing to litigate until your children are impoverished*

§ 5.2.1 Talk With Your Family

Before the text of this section begins, insert:

"For if the trumpet give an uncertain sound, who shall prepare himself to the battle?" 1 Corinthians 14:8

You are about . . .

Figure 6.3 – Add this photo:

Note: The antenna art shows a tower as wide as it is tall – conveying a false impression. Note syntax error. The family name should be plural, not possessive; and the opponents' colon is missing. Erected near home of WN3A.

§ 6.6.3 The FAA Reauthorization Act of 2018

There is a new federal statute for an opponent to seize upon. It is the FAA Reauthorization Act of 2018 (Public Law No. 115-254). But don't worry too much, it won't have any impact on most hams. Basically, if your tower is "covered," you must register it with an FAA database. That's all.

"Covered" towers, that is towers that must be registered, are described at § 2110(b)(1):

> (III) at the highest point of the structure is **at least 50 feet above ground level**;
> <snip>
> (V) has . . . an antenna . . .**and**
> (VI) is located **on land** that is—
> (aa) **in a rural area**; and
> (bb) **used for agricultural purposes or immediately adjacent** to such land.

A tower is **not "covered"** (need not register with the FAA) if, see § 2110 (b)(1)(A),

> (ii) EXCLUSIONS.—The term 'covered tower' does not include any structure that—
> (I) is **adjacent** to a house, barn, electric utility station, or other building;
> (II) is **within the curtilage of a farmstead or adjacent to another building or visible structure**; <snip>

nor need a tower be registered if the tower is already registered with the FCC Antenna Structure Registration program and the FAA has determined that it will pose no hazard to air navigation.

In other words, most common use ham towers would **not** need to be registered. Ham towers will not need to be registered if

- The tower is less than 50' tall,
- The tower is located in a city, or suburb, (*i.e.*, not rural -- defined as a population greater than 10,000),
- The towers is not on agricultural land (*i.e.*, farm, pasture, range – and a forests, for these purposes, is not agricultural), or
- The tower is adjacent to a house or another building (perhaps a garage or barn), or
- The tower is already registered with the FCC (ASR) *and* FAA has issued a determination of "No Hazard"

§ 7.10.6 Calculating the Appreciation of a Home

If you have the original purchase price or assessment value of a home, at some year in the past, where someone could argue that the value of that home was impacted by the presence of a nearby antenna, and you don't make a living in finance, but you want to calculate the annual appreciation in value of that home, here's the formula:

=(current price/old price)^(1/years)-1

Where the carat symbol (^) is the exponent ("to the power of"). This formula works perfectly on the K1IR and K1NU spreadsheets that can be found on the CD accompanying the book.

§ 9.2 The Proposed Height is Not Required

Insert immediately after the above title for § 9.2:

Two antennas saw each other above the tree tops, fell in love and got married. The ceremony wasn't much, but the reception was excellent.

Insert in § 9.2, AFTER the paragraph that begins "Figure 9.1 on the following page" and ends "immediately abutting hill."

§ 9.2.1.1 Creating a "Needs Analysis" at VHF

N6BV created a methodology for figuring out the coverage area by horizon-blocking of VHF/UHF signals using MicroDEM. He writes: "I found a feature in MicroDEM that does calculate area coverage. It's a manual tracing process."

1. Open the desired *.DEM file (e.g., K5RC.DEM).

2. Click the "Calculate" menu item at the top.

3. Select "Intervisibility".

4. Select "Horizon Blocking".

5. Click on the map at the approximate location of the tower.

6. Enter the exact tower lat/long coordinates.

7. Enter the "Distance to go out" -- 20,000 meters, the default, should be enough.

8. Enter the "Azimuth Increment" -- 5 degrees, the default, is fine.

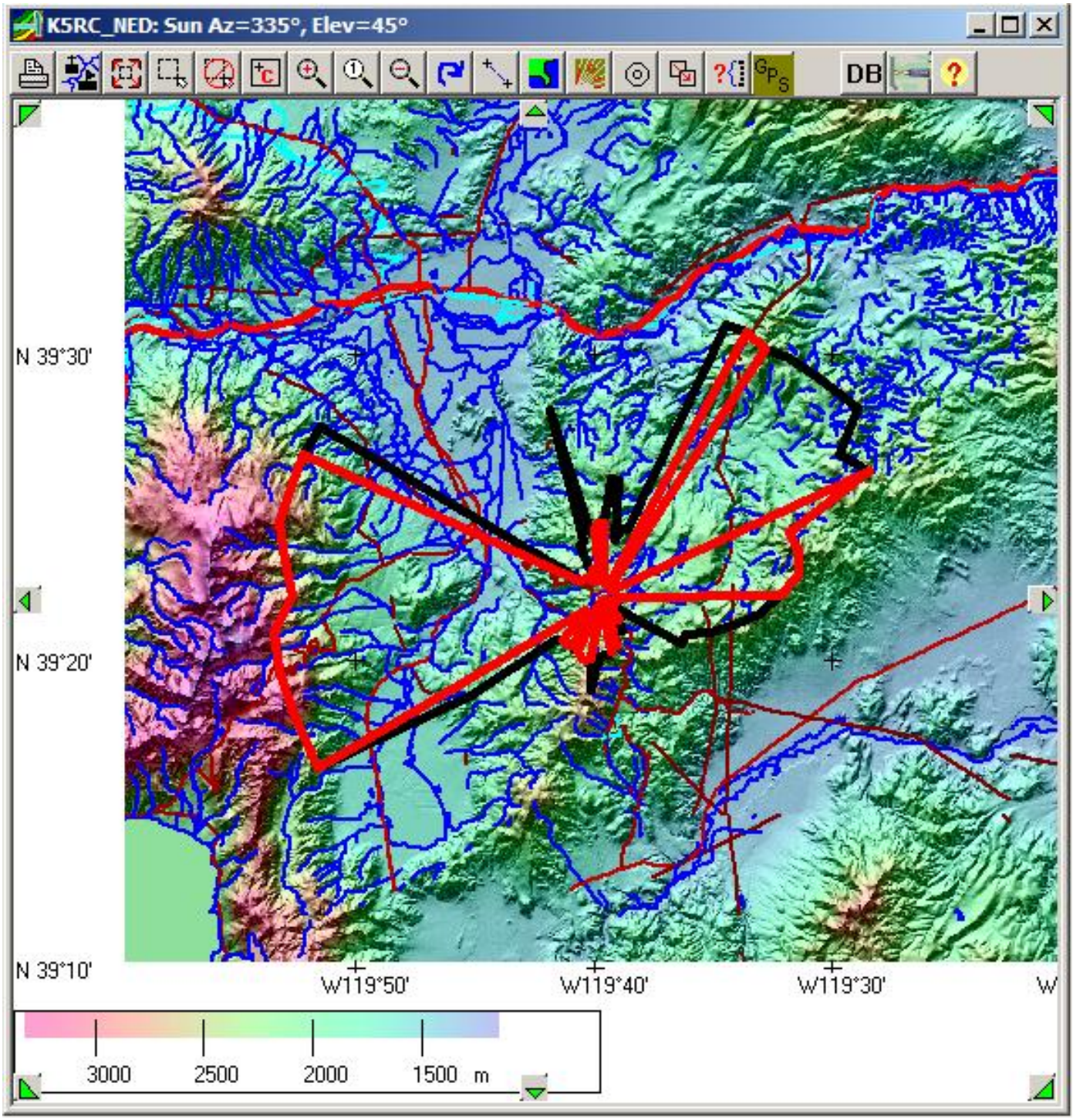
9. Enter the "Observer height above ground" -- the antenna height, in other words, in meters.

10. Select the color for the area coverage boundary lines -- I usually use red.

11. Let the computer grind away for quite a while.

12. Do <Alt><Print Screen> to save the annotated map to the Windows Clipboard and save it using Windows Paint or some other graphics software (I use Paint Shop Pro).

13. Optional step: Do a second area calculation for the second tower height, and overlay the coverage area on the same map, using a second color (I use black). Save this annotated map to the Windows Clipboard.



For examples of how he constructs an HF Needs Analysis, and how he constructs a VHF Needs Analysis, see the PowerPoint presentation assembled by Dennis Egan, W1UE, first presented at the Dayton HamVention in May 2013, available at http://attachments/Dayton_13_W1UE_Needs_Analysis_V4.ppt

14. Now comes the manual-dexterity part -- the object is to trace the boundaries of each coverage area using the "Area" function found in the "Calculate" sub-menu.

You may now write:

For 70' tower: 256 square km

For 195' tower: 405 square km

This is a 58% increase in coverage area.

"To simplify the interpretation of them, the lighter the color, the greater the relative signal strength on transmit and receive. At 70 feet, the repeater has a useful coverage of 256 square km. With the antenna at 195 feet, it has a useful coverage area of 405 square km, or a 58% increase in exposure. This is a huge increase in performance, especially for emergency communications applications." "With respect to the UHF repeater, operating in the 440-MHz band, the analysis shows a 58% improvement in coverage when going from the present height of 70 feet, to the proposed height of 195 feet. If the UHF repeater antenna, designed for use in local emergency situations, including search and rescue, were lowered to 45 feet, performance in the presence of the surrounding terrain would be unacceptable."

§ 9.2.1.2 Radio Mobile Deluxe by VE2DBE

The experimental software program . . .

§ 9.2.3 Reliability Equal to the Voice of America (VOA) is Not the Goal

An opponent to the proposed antenna system, or perhaps a curious board member, may wonder: “Why does the applicant need an antenna system that seems to rival what the Voice of America uses for shortwave broadcasts? Does the applicant seek reliable communications with Europe and Asia with the same quality of communications that the Voice of America strives for? “

Discussion

The questioner may have several misunderstandings.

1. The use of a widely accepted software tool (Voice of America Coverage Analysis Program, or VOACAP) should not be confused with a reliability or performance goal (such as 90% reliability, or 60% reliability).

2. The VOA reliability goal is 90% (9 days out of 10). The radio amateur’s reliability goal used in the Needs Analysis is a much more modest 60% (6 days out of 10).

Explanation

VOACAP is a piece of software. It is a tool developed over many years under contracts sponsored by:

- U.S. Army Strategic Communications Command, Fort Huachuca, AZ,
- U.S. Department of Commerce, National Telecommunications & Information Administration, Institute for Telecommunication Sciences, Boulder, CO, and
- Voice of America, Washington, DC

As a piece of software, VOACAP is the most widely used high-frequency (shortwave) performance prediction software in the world. It was not developed by or for radio amateurs. Anyone can use this tool to predict shortwave communications reliability, and it is available from the U.S. government without charge. Using VOA software does not mean you want VOA reliability.

The VOA reliability goal is 73 dB/1-Hz SNR (Signal-to-Noise Ratio) target for a VOA 6 kHz bandwidth AM signal. VOA designs are aimed at achieving this goal 90% of the time.[1]

The radio amateur's reliability goal parameters assume a 40 dB/1-Hz SNR target for a ham radio 2.4 kHz bandwidth single-sideband (SSB) voice signal. The calculations in the main report assume an antenna design aimed at achieving this goal 60% of the time, assuming the full legal limit for amateur radio of 1,500 watts transmitter power output . Realistically, 1500 watts at the antenna is unobtainable, due to feedline inefficiency, and the effect of the duty-cycle on reducing average power output.

The difference between the VOA reliability goal and the amateur radio goal is 33 dB, or a factor of **~2000:1**

An error common to neophytes trying to understand the VOACAP software would be a failure to recognize that in VOACAP the Required SNR is the signal-to-noise ratio ***in a 1-Hz receiving bandwidth***. The reason VOA chose to express the required SNR in a 1-Hz bandwidth is because it makes VOCAP a universal tool, capable of being used for various modes of communications. Voice, CW (continuous wave, *i.e.*, "Morse Code"), RTTY (radio teletype), and other digital modes have different bandwidths. A user of VOACAP need only enter the required SNR for the particular mode.

VOA looks for a 73 dB/1-Hz required SNR with a 90% reliability for an AM DSB (double sideband with carrier) signal. A typical bandwidth for such a signal is 6000 Hz. Thus, the required SNR in a 6000 Hz bandwidth would be: 73 - 10 log10 (6000/1) = 35 dB/6000-Hz SNR, which is their desired level of service, sometimes referred to as "armchair copy." A 73 dB/1-Hz (35 dB/6000-Hz) SNR would be suitable for reasonably good reception of music, as well as voice.

---

[1] Where does that 73 dB/1-Hz SNR target come from? In 1983, the National Telecommunications and Information Administration (NTIA) first published its Ionospheric Communications Analysis and Prediction (IONCAP) software for predicting High Frequency sky wave performance. In that report, the NTIA adopted a goal of 90% effective communications. NTIA Report 83-127, July 1983. See System Control Card XLUFP, page 19. The 90% default value was adopted by the Voice of America in its "Program Guide for the Voice of America Coverage Analysis Program" (VOACAP), April 19, 1993. B/ESA Technical Report 01-93, page 2-7.

To be absolutely certain that the VOA goal is 73 dB/1-Hz SNR, the author consulted a VOA broadcast station design engineer. His business card is available upon request from the municipality, for current independent confirmation of this goal. However, the goal may also be found in the printed sources cited above.

To achieve its goal of 90% reliability or 73 dB SNR/1-Hz, VOA employs shortwave transmitters of up to 500,000 watts, with gigantic antenna fields, with many 300-foot high towers. See, for example, VOA Sao Tome (21 tall antenna towers on 346 acres, using four 100 kW shortwave transmitters for broadcasts from 6-21 MHz[2]), or VOA Greenville, NC (28,000 acres, with 300-foot towers supporting curtain arrays, two 500kW, four 250 kW shortwave transmitters[3] targeting Latin America, Cuba, the Caribbean and Africa).

By contrast, for an amateur radio SSB (single sideband voice) signal, a typical receiver bandwidth would be 2400 Hz. A 40 dB/1-Hz SNR (that is, in a 1-Hz bandwidth) would be 40 dB - 10 log10 (2400/1) = 6 dB Hz SNR, in a 2400 Hz bandwidth. It is commonly recognized by communications engineers that a 10 dB SNR in a voice bandwidth (that is, 2400 Hz) yields comfortable copy of a signal by trained operators. A 6 dB SNR in a 2400 Hz bandwidth would yield copy with "annoying" noise, but it would still be readable by trained, persistent operators.

The applicant's project is aimed at yielding copy with "annoying" noise, readable by trained, persistent operators, 60% of the time, or six days out of ten. For many areas of the world, the project fails to achieve that goal.

In contrast to VOA Greenville, the radio amateur seeks only a goal of 60% reliability (seen as REL on the graphs included in the Needs Analysis) at a 40 dB/1-Hz SNR, to the desired coverage areas, using a maximum of 1500 watts, a difference of 498,500 watts.

This amateur radio applicant does not seek the same quality of communications that the Voice of America strives for in its short wave broadcasts.

To repeat: The difference between the VOA reliability goal (73 dB SNR/1-Hz) and the radio amateur's reliability goal (40 dB SNR/1-Hz) is 33 dB, or a factor of approximately 2000:1.[4]

---

[2] www.dswci.org/specials/DXpedititions/saotome.pdf *(last visited March 7, 2013)*

[3] http://antennablog.lbagroup.com/voa-greenville-fifty-years-of-shortwave-to-the-world/

[4] On occasion an opponent who has been doing internet research without a depth of understanding of the issues involved will suggest that 20 dB SNR is considered acceptable for communications, borrowing the 20 dB SNR standard employed by IBM for its Netcool product. The source of this standard is http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/index.jsp?topic=/com.ibm.netcool_wireless.doc/xF1122641919096.html, Table 22, where IBM writes: "An SNR value of 20 dB can begin to impair conversational quality."

But the two standards have different applications. The IBM product works in the audio frequency range for typical POTS (Plain Old Telephone Service) of 300 to 3000 Hz -- a bandwidth of 2700 Hz. To compare apples to apples, convert 20 dB SNR in a 2700 Hz bandwidth into the VOACAP standard measure of dB in a 1-Hz bandwidth:

20 dB + 10 log10 (2700) = 54 dB/1-Hz.

Now 54 dB/1-Hz is not the "armchair copy" goal of the VOA (73 dB/1-Hz), but it is 14 dB more than the modest goal of 40 dB/1-Hz or "copy with an annoying amount of noise using trained, persistent operators." To achieve the standard that such a critic suggests is appropriate would readily satisfy the radio amateur. However, the radio

§ 9.3, add space to middle of a citation. The citation currently reads: Oliver v.AT&T Wireless Services. It should read: Oliver v. AT&T Wireless Services.

§ 9.3, insert just before § 9.4:

An amusing exchange occurred at the June 2018 meeting of the Murfreesboro (TN) City Council. After a resident rose to argue that a proposed 160-foot cell tower was "ugly" and close to houses, Councilman Eddie Smotherman commented that towers are not as disruptive to neighborhoods as some may argue. "[Towers] are not intrusive neighbors," Smotherman said. "They haven't had a single party yet." Source: http://mtsusidelines.com/2018/06/murfreesboro-city-council-holds-public-hearings-on-rezoning-budget-at-meeting/

§ 10.4, insert just before § 10.5:

Here's another situation. You've made an appointment with the Director of Planning (or Director of Planning & Zoning, or the civil servant by whatever title). You intend to hand in your application, or any supplementary information that has been requested, and have a quick discussion with him or her. Here's a suggested agenda or talking points for the meeting with this person:

- I've finally assembled my application (or: a supplement to the application I've previously presented). I hope you find it useful, it covers a lot of the law involved.
- As you go through the materials presented, what I really want to know is not your opinion on whether or not the P&Z Commission (or the Planning Board, or the Zoning Board) will approve, but rather DO THEY HAVE ALL THE INFO THEY NEED TO MAKE A THOUGHTFUL DECISION? If you think they need more, I'll happily provide more, if I can.
- When you get to reading the propagation maps, which justify the need for the antenna system, I'll be happy to go through that material so you can understand it. I know you can read plot plans and building plans, but I doubt you studied radio propagation engineering.
- For background material, don't ignore the attached ARRL pamphlet entitled "Antenna Height and Communications Effectiveness." [Note: Available on the CD accompanying this book.]
- If you have any questions that I can't answer, I'll be happy to call my lawyer to see if he can be helpful. He's probably sitting breathlessly by his phone.
- Would you like to get together after you've had a chance to read the material?

---

amateur would have to increase his signal strength by 14 dB. An additional 14 dB could be legally achieved by ***increasing*** the size of the antenna system. This is a welcome thought and would be most welcome. *Or* the radio amateur might ***increase*** the power output of his transmitter from 1500 watts to 37,678 watts, but that would be 36,178 watts more than the legal limit. Even so, increasing power output at the applicant's end of a communications link does nothing to increase the readability of a received signal.

Now 54 dB/1-Hz is not the "armchair copy" goal of the VOA (73 dB/1-Hz), but it is 14 dB more than the modest goal of 40 dB/1-Hz or "copy with an annoying amount of noise using trained, persistent operators." To achieve the standard that such a critic suggests is appropriate would readily satisfy the radio amateur. However, the radio amateur would have to increase his signal strength by 14 dB. An additional 14 dB could be legally achieved by ***increasing*** the size of the antenna system. This is a welcome thought and would be most welcome. *Or* the radio amateur might ***increase*** the power output of his transmitter from 1500 watts to 37,678 watts, but that would be 36,178 watts more than the legal limit. Even so, increasing power output at the applicant's end of a communications link does nothing to increase the readability of a received signal.

- When do you think the hearing will be?
- [If true,] As this is a continuation of an existing hearing, would I be correct to assume that no further notice will be necessary?

§ 10.5 Posting the Notice

If you are applying for a Conditional Use Permit (CUP), or a Special Use Permit (SUP), or some variation on that theme, it is highly likely that you will be required to post a sign telling the neighbors about your project. Here's what one looks like:

Greg Best, P.E., N9GB, in front of his house with the "PUBLIC HEARING" sign.

Do not screw around with the placement of this sign, or try to hide it in any way. This will come back to bite you. Ask the Building Department if they have some instructions on how to post the sign. Some jurisdictions are *very* specific.

CHANGE § 10.5 to § 10.6

CHANGE § 10.6 to § 10.7

AFTER § 10.6.2.2 [new § 10.7.2.2] is a sample application. At page 4 of the sample application for a special permit you will find :

> The Applicant is an individual and has been licensed by the Federal Communications Commission (FCC) since 1964. See **Exhibit A** for his present license, which qualifies him for the protections of the amateur radio preemption by federal law contained in 47 CFR § 97.15(b).
>
> Add:
>
> His status as a licensee may be confirmed from public FCC records. To search by callsign, see http://fjallfoss.fcc.gov/General_Menu_Reports/callsign.cfm, to search by licensee name, see
>
> http://fjallfoss.fcc.gov/General_Menu_Reports/license_search.cfm?accessible=NO&wild_select=on.

AFTER § 10.6.2.2 [new § 10.7.2.2] is a sample application. At Exhibit H-2, page 48, of the sample application for a special permit:

- Change Comment at the top to read: "The following is a real letter that was obtained in the past, disguised as to location, and edited for grammar."
- Delete *"Others, from ARES or the SEC, are on the CD."*
- The last Comment on the page should read:

> ***[Comment: If you are moving and wish to obtain a letter before you depart, make appropriate changes above such as "Dear Joe: I would like to extend my appreciation to you . . ." and "I understand that you will be leaving our community, and hope to install a . . ." It doesn't matter much whether the letter is addressed to you, to the Board in your new Town, or "To Whom It May Concern." Think about supplementing it with the FEMA-ARRL Statement of Affiliation or the Red Cross Letter, each only a single page, and found on the accompanying CD.]***

Chapter 11 The Public Hearing -- Your Big Moment in the Spotlight

AFTER the opening paragraph (It ends: ". . . begins long before the hearing itself.")

Some politicians were discussing hecklers. One of them said he never made reply. "Many years ago," he explained, "my father told me never to roll in the mud with a pig. Because you both get covered with mud—and the pig likes it." May 31, 1948, Charleston (WV) *Daily Mail*, "Notes of a New York Columnist" by Walter Winchell, pg. 13, col. 5.

Why is it appropriate to remind you of this maxim? While you are preparing for the hearing, opponents may try to "dirty the waters." They may attack you personally. They may say things

that are patently false. There is a tremendous temptation to answer each and every attack. DON'T.

To answer scurrilous attacks may be temporarily satisfying, but there is a likelihood you will say something that will later be used against you. But, most importantly, it is very important for you to take "the high road," and "to wear the white hat." Don't be drawn into minor scuffles in advance over things that will be discussed at the meeting or hearing. Be prepared to take advantage of your moment in the spotlight by making fresh arguments, calmly.

§ 11.2 Left side.

INSERT two new paragraphs, after the second paragraph that ends ". . . looking back at the Board."

I recommend that you prepare a PowerPoint presentation, *and practice it.* Ordinarily, you can find out from the planner, or the Code Enforcement Officer, how much time you'll have to present. In some cities or towns there will be a timer. If they do start a countdown timer when a speaker starts, you are done when the time runs out. Consider the time limit to be a very serious, almost unbreakable, restraint. If you will have only five minutes, be sure you can make your case in five minutes. Find out how much time you will have.

A day or two beforehand, visit the hearing room and, with the permission and possibly the help from staff, set up and operate your equipment. Many a radio ham has had a problem because his Microsoft PowerPoint on a USB stick would not display on a town-owned Apple laptop (or some other variation).

If you arrive early . . .

INSERT new section

§ 11.6 The Close of the Public Hearing

At some point, the chairman of the board hearing your matter will declare that the public hearing is closed. Take this very seriously. From this point on, no one should be recognized to speak again. In theory. But if you sit in the front row, and some technical matter arises, you may be asked a question such as "what zone is this in?" or "what was the total height again?" or "could you live with a time limitation on your special permit?" Here are some things that usually arise only after the public hearing has closed:

- **Closed means closed.** If some belligerent opponent sees that you are about to get your permit and tries to interrupt and make further argument, do not shout "Objection!" If you are going to get your permit, keep your mouth shut. However, if you absolutely must try to stop that opponent, instead of objecting, or *telling* the board that the public hearing is closed, you could *ask*: "Is the public hearing closed?" This will usually prompt the chairman to stop the interruption.

- **A time limit.** The board may grant your permit, but they may still not want a permanent structure. If you are 65 years old, tell the board that you could live with a 35-year permit. If the board insists on something shorter, ask for 20-years, renewable under the same terms, upon application. It is not very likely that anyone will pester you in year 21 if you've failed to renew. If do find a need to renew someday, and you are late, just write into your petition that you also seek "an enlargement of time to file for renewal."

- **A removal bond.** In the course of deliberation, if some board member wants to insert a requirement for a "removal bond," or seeks some way to force the removal of your station antenna structure when you no longer reside there, do your very best to stop the requirement of a bond or a deposit. A bond is easy for a cellular telephone company to get, and hard for you to get (perhaps 10% of the estimated cost for the municipality to remove the tower and antennas). A deposit is your own money that you are likely to forget the town still owes you, plus interest, 15 years later when you sell your house. Your best argument: "Madame Chairman, couldn't you just make removal a requirement of the special permit? Then the continuing presence of the tower would become a cloud on title. The buyer will be required by the mortgage bank to remove it, accomplishing your purpose without the need for a bond or deposit."

§ 11.9.7 [typo just before 11.9.8]: Change "attribution of any kinds" to "attribution of any kind."

INSERT new paragraph

§ 13.3.1 When?

Your state has a statute stating the date by which an appeal must be filed. **Don't miss that deadline.** It can be fatal to your appeal. In South Dakota, the statute requires that an aggrieved person must file an appeal "within thirty days after the filing of the decision in the office of the board of adjustment." SDCL 11-2-61. Don't wait for the approval of the minutes, or the publication of the minutes that may tell you WHY you were denied. Generally speaking, you must file within 30 days of the vote.

The problem is that these volunteer boards may not approve the minutes for a month or two or three. How will you know why they denied your appeal? Attend the meeting. You won't be allowed to speak, but you may learn why you must now go to court.

INSERT new paragraph

§ 14.2.2 Exhaustion of Administrative Remedies

§14.2.2.1 Do you have to seek re-zoning? Is it necessary to file for re-zoning before filing a lawsuit on the grounds that, until you have sought a change in the zoning bylaw, you have not yet fulfilled a necessary requirement – that you have exhausted all administrative remedies?

Generally speaking, the answer is no. Seeking a change in the zoning bylaw is a "legislative remedy," and not an "administrative remedy."

This issue was addressed in *Krejci v City of Saratoga Springs*, 2013 UT 74 (2013), which explained that "legislative power gives rise to a new law, while executive [administrative] power implements a law already in existence. . . . Legislative power generally (a) involves the promulgation of laws of general applicability; and (b) is based on the weighing of broad, competing policy considerations." The court held that rezoning [a particular] property was legislative because it bore these hallmarks of legislative action. By contrast, conditional use permits and variances involve determinations of whether a particular land use application conforms to statutorily adopted standards. As such, they are administrative actions.

You do not need to submit a request for re-zoning before filing a lawsuit.

§14.2.2.2 What if an appeal would be futile?

Actual Bias. In a rare case, you may be able to show that an appeal would be futile, because someone who should recuse himself refuses to do so. (Nonetheless, before going to court, you should ask that person to recuse himself.)

Here's an example: In *Scheub v. Van Kalker Family Limited Partnership*, 2013 WL 3190095 (IN App. 6/25/2013), the court listed the numerous examples of Scheub's bias and public opposition to the project. When the applicant requested Scheub's recusal from the permit application, Scheub refused to do so. As a result, the applicant's complaint seeking declaratory judgment was properly filed with the trial court as opposed to seeking further action from the Board. The court found that Scheub's actions unquestionably amounted to an "actual bias" and would thus render any decision from the Board futile. Since "any decision in which a biased Board Member participates will be vacated," the Court of Appeals of Indiana concluded that the trial court had proper subject matter jurisdiction.

Absolute prohibition/maximum height/futile act. If feeling lucky, you could hope for an outcome like the one obtained by Clifford M. Miller, the lawyer for W4DKB. W4DKB had erected a structure totaling 95.6 feet in height, in the face of an absolute prohibition on towers over 70 feet tall. Atty, Miller argued that an application for a permit for the antenna system desired would be futile. The court ruled that a flat prohibition, an unvarying maximum height, was not permitted, and agreed that any application for a permit would have been futile because the law does not require a useless act. *Brower v. Indian River County Code Enforcement Board*, 1993 WL 228785 (Fla.Cir.Ct. 1993).

§ 18.4 Definitions

[Insert after first two paragraphs, and before the paragraph beginning "Here's a tip:"]

A big thank you to Wayne Greaves, WØZW, for these three ideas, stolen from his article on his experience in Ruidoso, NM. See "*Rewriting a Flawed Antenna Ordinance: A Case Study*," (National Contest Journal, September/October 2009, page 8 *et seq.*):

One Antenna? If the current ordinance, or a proposed ordinance, limits a radio amateur to "one antenna," what can you do? Imagine that, in a political sense, there seems to be no way around it due to heavy opposition (such a limit would be illegal as not representing a reasonable accommodation – forcing, for example, a ham to choose between a two meter vertical and an HF antenna). Let's ignore, for a moment, the fact that if the restriction were litigated in federal court, the radio ham would win. See if you can get that limit of "one antenna" changed to "one antenna support structure."

Height? Let's assume that the present or proposed ordinance contains a firm, fixed maximum height of 65 or 70 feet. Again, a firm, fixed maximum height is illegal under PRB-1 as a fixed height is inherently not capable of accommodating of the needs of the individual radio amateur who is the applicant, if he or she needs more height. But let's assume that you are looking for the best deal you can get in some ugly circumstances. In this case, try to get the definition of height to say that the maximum height of the structure will be measured from the *highest* point on the property. This provision will have no advantage if the property is flat and level, but if the property includes a slope or hill, the actual tower height could exceed 65 or 70 feet by an amount equal to the difference in elevation between the highest point and the actual tower location. In a hilly and rugged terrain, such as WØZW's Ruidoso, New Mexico, this can be quite an enhancement to the ordinance. And the public policy reason for allowing the change is that it permits the amateur radio antenna support structure to be located in a less prominent place on the property – assuming that the high point is the most prominent place on the property.

Unless? Though stuck with a firm, fixed maximum height, the ordinance contains a safety valve that may save it from being struck down by a court. The maximum height contains an exception: "unless technical documentation is submitted justifying the exceedance *(sic)*." As I'm not sure there is such a word as "exceedance," you might try "justifying the overage" or "justifying a height greater than otherwise allowed."

[Consider re-numbering § 18.4 in the next edition.]

§ 18.6 A State Statute

[Change "Drafting a State Statute" to "A State Statute"]

§ 18.6.7.1. Proposed State Statute to Preempt Local Zoning

Draft of Simple State Statute
2017

Recognizing the amateur radio service as a public benefit, amateur radio operation from residences, private vehicles and public areas must be facilitated and encouraged at all levels of government so as to promote the effective operation of a station by individual amateurs, and to meet the communications need of an authorized applicant seeking any necessary permission. Any ordinance or regulation which involves the number, placement, screening or height of amateur radio antennas based on health, safety

or aesthetic considerations must be crafted to reasonably accommodate the radio amateur and shall represent the minimum practicable regulation to accomplish the state or local authority's legitimate stated purpose, or it is void. Any application process, as well as application or review fee, shall represent the minimum practicable regulation necessary. No state or local authority ["local unit of government"?] may adopt or enforce any regulation which does not meet these requirements.

More Complex Draft State Statute, with sources

2017

AN ACT

TO RECOGNIZE THE VALUE OF AMATEUR RADIO COMMUNICATIONS BY REQUIRING LOCAL UNITS OF GOVERNMENT TO REASONABLY ACCOMMODATE AMATEUR RADIO COMMUNICATIONS[5]

OR

RELATING TO LOCAL UNIT OF GOVERNMENT REGULATION OF RADIO ANTENNAS[6]

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ARIZONA:

Whereas the United States Congress has expressed its determination in section 1 of the Communications Act of 1934 (47 U.S.C. § 151) to promote safety of life and property through the use of radio communication;

Whereas the United States Congress, in section 7 of the Communications Act of 1934 (47 U.S.C. § 157), established a policy to encourage the provision of new technologies and services;

Whereas the United States Congress, in section 3 of the Communications Act of 1934, defined radio stations to include amateur stations operated by persons interested in radio technique without pecuniary interest;

Whereas the Federal Communications Commission has created an effective regulatory framework through which the amateur radio service has been able to achieve the goals of the service;

[5] This phrasing borrows from the North Carolina title (which became law).
[6] This phrasing borrows from the Colorado title (which became law).

Whereas regulations set forth in part 97 of title 47 of the Code of Federal Regulations clarify and extend the purposes of the amateur radio service as a--

(1) voluntary noncommercial communication service, particularly with respect to providing emergency communications;
(2) contributing service to the advancement of the telecommunications infrastructure;
(3) service which encourages improvement of an individual's technical and operating skills;
(4) service providing a national reservoir of trained operators, technicians and electronics experts; and
(5) service enhancing international good will;

Whereas the United States Congress finds that members of the amateur radio service community has provided invaluable emergency communications services following disasters such as volcano eruptions, earthquakes, tornadoes, floods, wild fires, and industrial accidents in great number and variety across the Nation; and

Whereas the United States Congress has found that the amateur radio service has made contributions to our Nation's communications by its leading role in development of low-cost, practical data transmission: Now, therefore, in recognition and furtherance of the goals of the Communications Act, the government of Arizona finds and declares that--

(1) radio amateurs are hereby commended for their contributions to technical progress in electronics, and for their emergency radio communications in times of disaster; and
(2) reasonable accommodation should be made for the effective operation of amateur radio from residences, private vehicles and public areas, and that regulation at all levels of government should facilitate and encourage amateur radio operation as a public benefit.[7]

***Therefore*, be it enacted by the People of the State of the Arizona, represented in the legislature:**

1. PURPOSE. Amateur radio station antenna structures may be erected at heights and dimensions sufficient to accommodate effective[8] amateur service communications. As required by federal law, 47 CFR § 97.15(b), local regulation of a station antenna structure must not preclude amateur service communications. Rather, it must reasonably accommodate such communications and must constitute

---

[7] A direct reflection of, and quotation from S.J. Res 90 of the 103rd Congress (1994), found at https://www.congress.gov/bill/103rd-congress/senate-joint-resolution/90/text. Arizona's Legislative Council be consulted on whether a preamble like this is useful.

[8] The word "effective" has been inserted to reflect language found in paragraph 25 of the original PRB-1 (1985), and U.S. Public Law 103-408 (1994) §1 (3), found at https://www.congress.gov/bill/103rd-congress/senate-joint-resolution/90/text

the minimum practicable regulation to accomplish the state or local authority's legitimate purpose.[9] Some amateur antenna configurations require more substantial installations than others if they are to provide the amateur operator with the communications that he/she desires to engage in.[10] (See PRB-1, 101 FCC 2d 952 (1985) for details.)

2. DEFINITIONS. An "amateur radio station" means a radio station operated by a duly authorized person[11] interested in radio technique solely with a personal aim and without pecuniary interest, as defined in 47 USC § 153 (3). An amateur radio station antenna structure and associated antennas are not part of a "commercial mobile service" regulated by 47 USC § 332, or wireless communication facility, such as cellular telephone facilities, and no municipality or county may regulate as such.

3. USES. An amateur radio station antenna structure is an accessory use of a lot[12], but may also be a principal use of a lot[13].

4. HEIGHT AND DIMENSIONS. Any code, ordinance or by-law must allow for heights and dimensions of such antenna structures sufficient to effectively accommodate amateur radio communications desired by the radio amateur.[14]

5. ENCROACHMENTS. Amateur radio station antenna structures shall be located such that guy wires and other accessories shall not cross or encroach upon any street or other public space, or over above-ground electric utility lines, or encroach upon any property not owned or controlled by the applicant, without the written consent of the owner of the encroached-upon property, space or above-ground electric utility lines.[15]

6. NUMBER OF ALLOWED STRUCTURES. Nothing in this section shall preclude the installation of more than one amateur radio antenna support structure on any lot in the rural zoning districts, provided the standards of this section are met and there is

---

[9] A direct quotation of federal law found at 47 CFR § 97.15(b).

[10] A direct quotation of federal law found at ¶ 25, PRB-1, 101 FCC 2d 952 (1985), most readily found at http://wireless.fcc.gov/services/amateur/prb/index.html.

[11] Do not use the word licensee, as you may have a radio amateur who is authorized to operate in Arizona under, for example, the CEPT treaty, but is licensed by a different authority (his or her home country).

[12] In Arizona, an amateur radio antenna system has long been considered an ordinary accessory use. *Town of Paradise Valley v. Lindberg,* 551 P.2d 60, 61-62 (Ariz. Ct. App. 1976) (holding that the erection of a ninety-foot amateur radio tower in conjunction with a homeowner's hobby as a ham radio operator is a permissible accessory or incidental use).

[13] An amateur radio antenna system can be a principal use of a lot (i.e., could be located on an otherwise vacant lot) because "State and local regulation of a station antenna structure must not preclude amateur service communications." 47 CFR § 971.15(b)

[14] The "heights and dimensions sufficient" language is a direct reflection and quotation from 47 CFR § 97.15(b).

[15] This sub-section is intended to deal with the situation where a radio amateur owns two adjacent lots, or has permission from a friendly neighbor.

at least 10,000 square feet of lot area for each newly-constructed[16] antenna support structure. [OR: A local unit of government may not restrict the number of support structures for an amateur radio antenna.[17] OR: A local unit of government may not restrict the number of amateur radio station antenna structures.[18]] There is no limit to the number of amateur radio antennas mounted to a building and such structures shall be considered a building appurtenance.

7. BALANCING NOT PERMITTED. In accordance with 47 CFR § 97.15(b) requirements of reasonable accommodation and minimum practicable regulation, a balancing of interests approach is not appropriate when considering any building or use permit.[19]

8. REGULATION OF RADIO FREQUENCY INTERFERENCE NOT PERMITTED. No antenna restriction, nor local zoning authority, may condition construction and use permits on any requirement to eliminate or remedy radio frequency interference. [20]

9. MINIMUM PRACTICABLE REGULATION; FEES. In accordance with 47 CFR § 97.15(b) requirements of reasonable accommodation and minimum practicable regulation, unreasonable fees or onerous conditions are not permitted. A permit fee or required payment, including consultant fees,[21] must not be too high, and therefore unreasonable, and a condition must not be more than minimum regulation, and, therefore, impracticable to comply with.[22]

10. EFFECT; BURDEN. Any ordinance, resolution, regulation, plan or other action adopted or taken by local unit of government in violation of the provisions of this section is void. Any local unit of government that denies an application for approval of an amateur station antenna structure shall state the reasons for the denial and shall, on appeal, bear the burden of proving that the authority's actions are consistent with this section.[23]

---

[16] The insertion is intended to make it clear that a wire hanging going to an existing garage, house, flag-pole or tree is permitted, in addition to antennas, usually Yagi-style, mounted on a station antenna structure.

[17] Source: ALASKA STAT. § 29.35

[18] This wording avoids an ambiguity in the Alaska law. The "number of support structures for an amateur radio antenna" could imply that you may have two poles supporting a singular dipole, but not two towers, each with its own Yagi antenna(s).

[19] A direct reflection and quotation from ¶ 7, PRB-1 (1999), found at http://www.fcc.gov/Bureaus/Wireless/Orders/1999/da992569.txt

[20] This represent no change in law, as it merely quotes *Freeman v. Burlington Broadcasters, Inc.*, 204 F. 3d 311 (2d Cir. 2000), cert. denied, 531 U.S. 917 (2000)

[21] This reference to consultant fees reflects the court decision in *Landstein v. Town of LaGrange,* 86 N.Y.S.3d, 166 A.D.3d 100 (2018).

[22] A direct reflection and quotation from ¶ 6, PRB-1 (2000), found at http://wireless.fcc.gov/services/index.htm?job=prb-1&id=amateur&page=3

[23] A direct reflection and quotation from OHIO REV. CODE § 5502.031(C)

11. GRANDFATHER CLAUSE; REPAIRS. Station antenna structures constructed prior to the effective date of this section are exempted from subsequent changes in zoning regulations by any local unit of government and may be repaired as required.[24]

Elements of a Statute

Title

AN ACT
CONCERNING A REQUIREMENT THAT LOCAL GOVERNMENTS REGULATE AMATEUR RADIO COMMUNICATIONS IN ACCORDANCE WITH AN EXISTING FEDERAL PREEMPTION ESTABLISHED BY THE FEDERAL COMMUNICATIONS COMMISSION.

Short title: Local Government Regulation of Amateur Radio Antennas

Colorado: SENATE BILL 15-041 (which became law)

AN ACT TO RECOGNIZE THE VALUE OF AMATEUR RADIO COMMUNICATIONS BY REQUIRING CITY AND COUNTY ORDINANCES REGULATING ANTENNAS TO REASONABLY ACCOMMODATE AMATEUR RADIO COMMUNICATIONS.

North Carolina: HOUSE BILL 1340 (which became law)

Intent or Purpose

It is the intent of the Legislature in adding this section to the Government Code, to codify in state law the provisions of Section 97.15 of Title 47 of the Code of Federal Regulations, which expresses the Federal Communications Commission s limited preemption of local regulations governing amateur radio station facilities.

California: CAL. GOV'T CODE § 65850.3

Definitions

55-2903. DEFINITIONS. When used in this act:

(1) "Antenna" means any array of wires, tubing or similar materials used for the transmission and reception of radio waves.

(2) "Antenna support structure" or "tower" means a structure or framework that is designed to elevate an antenna above the ground for the purpose of increasing the effective communications range and reliability of an amateur radio station.

[24] A direct reflection and quotation from KAN. STAT. ANN. § 12-16,126 (g)

(3) "Amateur Radio" means the use of amateur and amateur-satellite radio frequencies and services used by licensed, qualified persons of any age who are interested in radio technique without pecuniary remuneration. These services present an opportunity for public service, emergency communications, self-training, intercommunication and technical investigations.

(4) "Amateur radio operator" means any person who has been duly examined and licensed by the Federal Communications Commission, or its designee, or is authorized by international treaty, for the operation of transmitting and receiving apparatus on radio frequencies internationally agreed upon for the use of the amateur radio service.

(5) "Local unit of government" means a county, city or town.

Idaho: IDAHO CODE § 55-2901, except that the concept of "authorized" operators is added.

Burden

(C) Any local unit of government legislative authority that denies an application for approval of an amateur station antenna structure shall state the reasons for the denial and shall, on appeal, bear the burden of proving that the authority's actions are consistent with this section.

Ohio: OHIO REV. CODE § 5502.031(C)

Effective Communications

(1) The legislative authority shall not restrict the height or location of amateur station antenna structures in such a way as to prevent effective amateur radio service communications and shall comply with 47 C.F.R. § 97.15.

Ohio: OHIO REV. CODE § 5502.031 (B)(1)

The very least regulation necessary for the welfare of the community must be the aim of antenna restrictions so that such restrictions will not impinge on the needs of amateur operators to engage in amateur communications.

FCC DA 99-2569 (1999)

Effective Date

This act shall take effect upon becoming a law, the public welfare requiring it.

Tennessee: TENN. CODE ANN. § 6-54-130 (2)

"This act is necessary for the immediate preservation of the public peace, health, or safety, or support of the state government and its existing public institutions, and shall take effect immediately [March 23, 1994]."

Washington: RCW 35.21.315

Grandfather Clause; Repairs

12-16,126. (g) Station antenna structures constructed prior to the effective date of this section are exempted from subsequent changes in zoning regulations by the city or county and may be repaired as required.

Kansas: KAN. STAT. ANN. § 12-16,126 (g)

Height

Based on the most recently published United States census, a municipal restriction on amateur radio antenna height may not be lower than

(1) 200 feet above ground level as permitted by the Federal Communications Commission in an area with a population density of 120 or less per square mile;

(2) 75 feet above ground level in an area with a population density of more than 120 per square mile for an antenna on a lot that is smaller than one acre; or

(3) 140 feet above ground level in an area with a population density of more than 120 per square mile for an antenna on a lot that is one acre or larger.

Source: ALASKA STAT. § 29.35

(2) establish a maximum height limit for an amateur radio antenna of less than 100 feet above the ground.

Source: MONT. CODE ANN. § 76-2-240 (2)

A city [county] may not restrict antennas or antenna support structures of amateur radio operators to heights of 90 feet or lower unless the restriction is necessary to achieve a clearly defined health, safety, or aesthetic objective of the city [county].

Source: N.C. GEN. STAT. § 160A-383.3 (city) § 153A-341.2 (county)

[A] city or county may not restrict antennas or antenna support structures of amateur radio operators to heights of 70 feet or lower unless the restriction is necessary to achieve a clearly defined health, safety or aesthetic objective of the city or county.

Oregon: OR. REV. STAT. § 221.295

No ordinance, regulation, plan or any other action shall restrict amateur radio antenna height to less than 65 feet above ground level.

Pennsylvania: 53 PA. CONS. STAT. § 302 (2008)

In localities having a population density of 120 persons or less per square mile according to the 1990 United States census, no local ordinance shall (i) restrict amateur radio antenna height to less than 200 feet above ground level as permitted by the Federal Communications Commission or (ii) restrict the number of support structures. In localities having a population density of more than 120 persons per square mile according to the 1990 United States census, no local ordinance shall (i) restrict amateur radio antenna height to less than 75 feet above ground level or (ii) restrict the number of support structures.

Virginia: VA. CODE ANN. § 15.2-2293.1

No ordinance or regulation adopted by a city or town under this section shall establish a maximum height for an amateur radio antenna of less than seventy (70) feet above ground.

Wyoming: WYO. STAT. ANN. § 15-1-130

Also: 18-2-114. Prohibitions; amateur radio antenna regulation. [Counties]

Numerosity

A municipality may not restrict the number of support structures for an amateur radio antenna.

Alaska: ALASKA STAT. § 29.35.141 (b)

Repairs

12-16,126. (g) Station antenna structures constructed prior to the effective date of this section are exempted from subsequent changes in zoning regulations by the city or county and may be repaired as required.

Kansas: KAN. STAT. ANN. 12-16,126. (g)

Setbacks

Non-rigid items such as wire, cable, transmission lines, lightning rods, guy wires, or guy wire anchors, or guy wire anchor posts less than six feet in height, shall not be included in any determination of set-back or required yard.

Void

12-16,126. (f) Any ordinance, resolution, regulation, plan or other action adopted or taken by a governing body in violation of the provisions of this section is void.

Kansas: KAN. STAT. ANN. 12-16,126 (f)

Any ordinance, regulation or plan adopted by or other action taken by a governing body in violation of the provisions of this section is void.

Nevada: NEV. REV. STAT. § 278.02085

Grandfather Clause; Repairs

12-16,126. (g) Station antenna structures constructed prior to the effective date of this section are exempted from subsequent changes in zoning regulations by the city or county and may be repaired as required.

Kansas: KAN. STAT. ANN. 12-16,126 (g)

A. Amateur radio antenna towers constructed prior to the effective date of this section are exempted from subsequent changes in zoning regulations by the municipality or county and may be repaired as required.

New Mexico: N.M. STAT. ANN. § 5-12-1

§ 18.6.7.2 Letters to Legislators [a new section]

Grass roots lobbying for a proposed state statute requires letters to state legislators. Here are examples of letters created in Michigan.

Sample Senate Letter

The Honorable [First Name, Last Name]
[Address]
[City, State, Zip]

Re: Senate Bill 0493

Dear Senator [Last name]:

As your constituent, I urge your support for SB 0493.

The proliferation of cell phone towers has motivated county and municipal governments to become increasingly aggressive in restricting the erection of communication structures. Recognizing this issue, the Federal Communications Commission (FCC) issued a ruling in 1985 entitled PRB-1, which states that local authorities must "reasonably accommodate" residential amateur radio station installations. Unfortunately, local planners and zoning officials do not typically consider federal rulings and generally focus on state laws. Currently, thirty other states, including Wisconsin, Illinois, Indiana and Ohio have addressed this issue by codifying the provisions of PRB-1, (Amateur Radio Preemption, 101 FCC 2d 952, and later 47 CFR §97.15(b)), into state statutes. At this time PRB-1 has not been codified into Michigan state statute.

Your support for SB 0493 will address this issue in the State of Michigan, ensuring that in times of need amateur radio operators will be able to communicate effectively. For over 100 years, Amateur Radio has provided emergency communications to the public in times of natural and other disasters. All of our time, equipment, and effort during such times are gladly donated by Amateur Radio volunteers. It is completely free. In 2013, amateur radio operators provided volunteer hours to the citizens of the State of Michigan worth $2,700,000. Help us to ensure that this critical method of communications is available when it is most needed.

I ask you seriously to consider the following in your decision to support SB 0493:

This is not an attempt to set new legal precedent or give Michigan hams privileges not already supported by FCC regulations. This bill simply assures that Michigan state law reflects the federal rules regarding Amateur Radio Stations. Consequently, any local county, city or other municipal government creating ordinances regarding antenna restrictions, radio frequency power limits or regulating amateur radio stations will be made aware that a federal rule exists. These entities can then use this rule as a guide without specific or additional restrictions being placed upon them. The financial impact of SB 0493 has been determined to be neutral to both state and local governments.

Your leadership is imperative and is respectfully requested on this important issue. Please support this commonsense legislation and let me know your opinion on this important issue. Thank you for your time and consideration of this request.

With sincere appreciation,

[Written Signature]
[First, Last Name], [Callsign]
[Address]
[City, State, Zip]
[Telephone Number, if desired]
[email address, if desired]

Sample House Letter

The Honorable [First Name, Last Name]
[Address]
[City, State, Zip]

Re: SB 0493

Dear Representative [Last name]:

As your constituent, I urge your support for SB 0493. This bill has recently arrived in the Michigan House and will be soon assigned to a Committee for further study.

Here are some of the details of the reasons for this bill:

The proliferation of cell phone towers has motivated county and municipal governments to become increasingly aggressive in restricting the erection of communication structures. Recognizing this issue, the Federal Communications Commission (FCC) issued a ruling in 1985 entitled PRB-1, which states that local authorities must "reasonably accommodate" residential amateur radio station installations. Unfortunately, local planners and zoning officials do not typically consider federal rulings and generally focus on state laws. Currently, thirty other states, including Wisconsin, Illinois, Indiana and Ohio have addressed this issue by codifying the provisions of PRB-1, (Amateur Radio Preemption, 101 FCC 2d 952, and later 47 CFR §97.15(b)), into state statutes. At this time PRB-1 has not been codified into Michigan state statute.

Your support for SB 0493 will address this issue in the State of Michigan, ensuring that in times of need amateur radio operators will be able to communicate effectively. For over 100 years, Amateur Radio has provided emergency communications to the public in times of natural and other disasters. All of our time, equipment, and effort during such times are gladly donated by Amateur Radio volunteers. It is completely free. In 2013, amateur radio operators provided volunteer hours to the citizens of the State of Michigan worth $2,700,000. Help us to ensure that this critical method of communications is available when it is most needed.

I ask you seriously to consider the following in your decision to support SB 0493:

This is not an attempt to set new legal precedent or give Michigan hams privileges not already supported by FCC regulations. This bill simply assures that Michigan state law reflects the federal rules regarding Amateur Radio Stations. Consequently, any local county, city or other municipal government creating ordinances regarding antenna restrictions, radio frequency power limits or regulating amateur radio stations will be made aware that a federal rule exists. These entities can then use this rule as a guide without specific or additional restrictions being placed upon them. The financial impact of SB 0493 has been determined to be neutral to both state and local governments.

Your leadership is imperative and is respectfully requested on this important issue. Please support this commonsense legislation and let me know your opinion on this important issue. Thank you for your time and consideration of this request.

With sincere appreciation,

[Written Signature]

[First, Last Name], [Callsign]
[Address]
[City, State, Zip]
[Telephone Number, if desired]
[email address, if desired]

§ 21.2.1.3

Date at end of W9WU letter. This should be 20__, not 2000.

§ 21.5 The Special Case of Flag Poles

The radio ham who finds her/himself living in a Common Interest Development (CID) or Home Owner Association (HOA)-controlled development, may be interested to learn about special laws restricting the condominium association's power with respect to flag poles. The federal law involved is found at 4 U.S.C. § 5, known as the 'Freedom to Display the American Flag Act of 2005.' It passed the Congress as Public Law 109-243. Section 3 reads:

> SEC. 3. RIGHT TO DISPLAY THE FLAG OF THE UNITED STATES.
>
> A condominium association, cooperative association, or residential real estate management association may not adopt or enforce any policy, or enter into any agreement, that would restrict or prevent a member of the association from displaying the flag of the United States on residential property within the association with respect to which such member has a separate ownership interest or a right to exclusive possession or use.

While this sounds great, an HOA has defenses if you should make a claim under the statute.

> SEC. 4. LIMITATIONS. "Nothing in this Act shall be considered to permit any display or use that is inconsistent with - "(1) any provision of chapter 1 of title 4, United States Code, or any rule or custom pertaining to the **proper display** or use of the flag of the United States (as established pursuant to such chapter or any otherwise applicable provision of law); or "(2) any **reasonable restriction** pertaining to the time, place, or manner of displaying the flag of the United States **necessary to protect a**

> **substantial interest of the condominium association**, cooperative association, or residential real estate management association." *(Emphasis added.)*

Property values? To prevent the installation of a flag pole, could the Association argue that it has a "substantial interest" in protecting property values? In the debate on the bill, on January 4, 2005, Rep. Roscoe Bartlett [MD-6] commented on the issue:

> Mr. Speaker, it is hard for me to understand how a flag outside my condo could depreciate the value of my condo. I would just think that Americans flying flags should increase the value of whatever it flies on.
>
> Statement of Rep. Bartlett 152 Cong. Rec. H4574-02, 2006 WL 1749721. See http://thomas.loc.gov/cgi-bin/bdquery/z?d109:HR00042:@@@R (last visited Nov. 24, 2010).

Is a ban reasonable? Look around. If banning free-standing flagpoles is a reasonable restriction, why does the Association itself have them? Be sure to note the locations of all flagpoles the association erected for itself (there is usually at least one, by the clubhouse, or in front of the golf course).

Does the ban represent a *substantial interest of the condominium association*? What is the interest that the association seeks to protect when there already exists flagpoles within the property? Note that some or all of the association's own flagpoles may be taller than the one proposed by the radio amateur.

State Law. At least AZ, CA, FL, GA, MN, NC and VA have comparable state statutes. Furthermore, a state law may have an additional wrinkle. For example, CAL. CIV. PROC. CODE § 1353.5, as well as Minn Stat 500.215, include attorney fees for the homeowner/tenant who prevails in litigation. A full explanation of the California statute may be found in Elizabeth F. Grussenmeyer, *The Right to Display the American Flag in Common Interest Developments: Restrictions by Homeowners' Associations Not Tolerated*, 34 McGeorge L. Rev. 516 (2003). The North Carolina statute protects the display of the state flag, as well as the American flag. The Virginia statute puts the burden of proof on the condominium association.

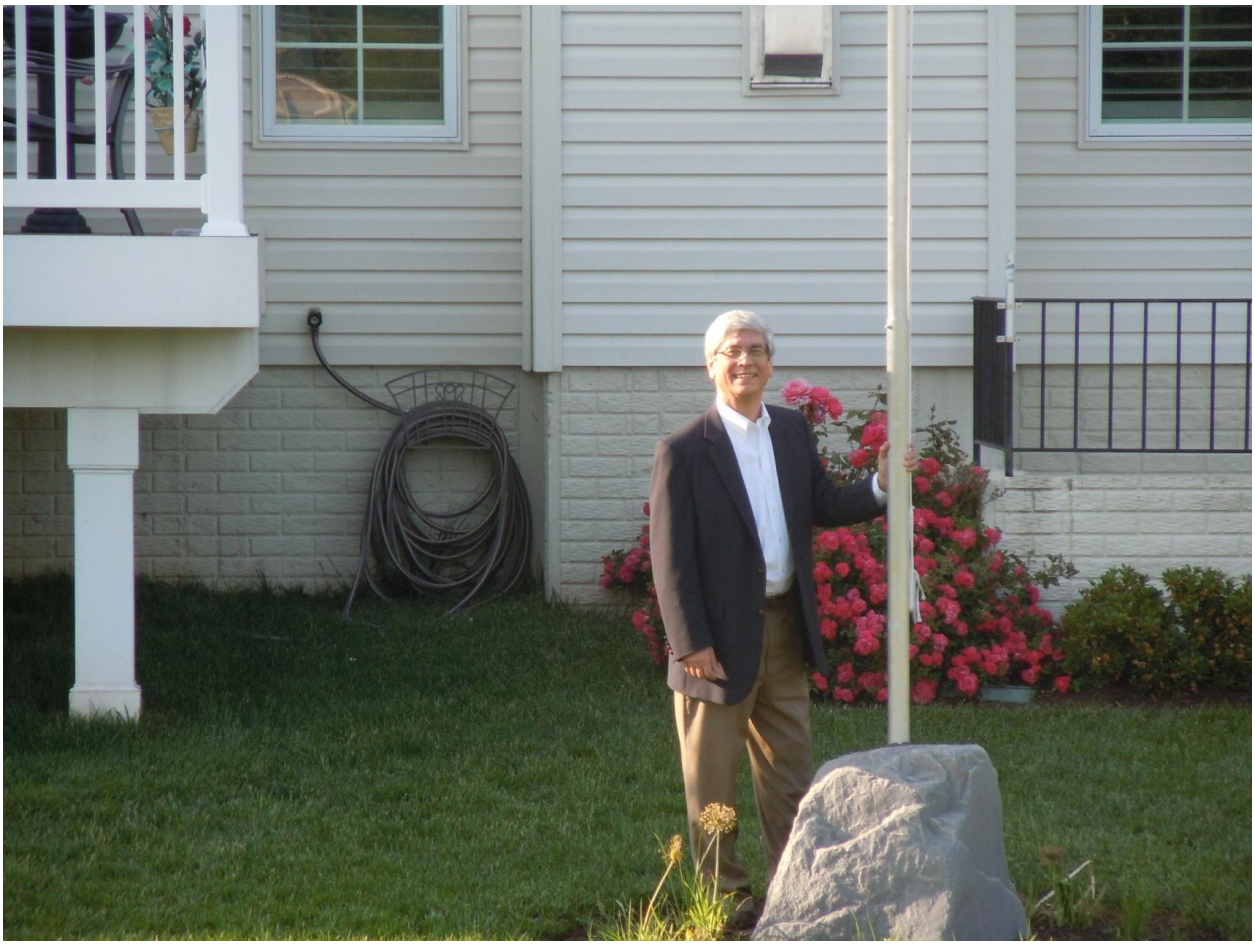
"OK, you can have your flag, but not your pole." In *Bridgemill Community Association v. Tripodo* (Superior Court of Cherokee County, GA, 2010), the association emphasized that the fines and the request for injunction were based on the pole. However, the court wrote: "**the flag and the instrument necessary for flying it are intertwined in the display of the flag**, and the Covenants require association pre-approval for both. Thus, Plaintiff attempts to enforce restrictions that prevent the display of the American flag." (*Emphasis added.)*

Use a 3' x 5' flag. To color the optics of the situation, try to obtain a flag with some significance, such as a flag that flew over the Capitol. You may buy one through the office of your local congressional representative. Such a size can prove handy if the association has a rule that permits personal flagpoles, but only "(f)lagpole staffs which do not exceed six feet in length and are attached at an incline to the

wall or pillar of the dwelling unit." Why would a 3'x5' flag prove handy in such a situation? Because it is impossible to avoid violating the Flag Code when, in accordance with 4 U.S.C. § 7, a flag is flown at half-staff. At half-staff (do the math!), the flag would be draped against the wall or post to which the staff is attached, and, according to 4 U.S.C. § 8 – Respect for flag "(b) The flag should never touch anything beneath it, . . ."

A building permit? Will a flag pole require a building permit? Sometimes yes, and sometimes no. For example, in Loudon County, VA no building permit is required for a flag pole.

A flag pole which may also be used as an antenna, manufactured by Zero-Five.



K1VR modeling. The fake rock at the base keeps curious hands away.

Do they work? For a good explanation of flag pole antennas, see "*The 43 Foot Vertical Monopole – What's the Magic?* By Joel Hallas, W1ZR, QST, June 2012, page 30. For further detail on performance, see "*Making the 43 Foot Monopole Play Nicely on Higher Frequency Bands*," Hallas, QST, July 2012, page 42.

§ 21.6 A Proposed Covenant or Regulation

Suppose you are elected president of your homeowner's association, or you are elected to the board, or you have friends in high places. You might want to consider trying to get a favorable regulation for antennas. To give you a place to start, here's a sample covenant or regulation:

ANTENNAS

A. In accordance with federal law, 47 CFR § 1.4000, a regulation of the Federal Communications Commission commonly known as the "Over-the-Air-Reception- Devices (OTARD)" rule, there

are antenna structures that may be erected without prior approval of the Association. Such antenna structures are:

(1) An antenna that is designed to receive direct broadcast satellite service, including direct-to-home satellite services, that is one meter or less in diameter;

(2) An antenna that is designed to receive video programming services via multipoint distribution services, including multichannel multipoint distribution services, instructional television fixed services, and local multipoint distribution services, and that is one meter or less in diameter or diagonal measurement;

(3) An antenna that is designed to receive television broadcast signals; or

(4) A mast supporting an antenna described in (1), (2), or (3) above.

B. An antenna structure which is, in all material respects, comparable to an antenna permitted by 47 CFR § 1.4000, may also be erected and maintained without prior approval of the Association.

C. Pursuant to the Flag Act, 4 USC § 7, the Association may not restrict or prevent the erection of a flag pole to display the flag of the United States on residential property within the association. See "Freedom to Display the American Flag Act of 2005." Further, pursuant to 4 USC § 8, no disrespect should be shown to the flag, the flag should be aloft and free, and the flag should never touch anything beneath it, such as the ground. Accordingly, residents may erect flag poles not to exceed 35 feet in height without prior approval of the Association. Dual use of the flag pole, as both a flag pole and as an antenna, is permitted so long as there is no material visible change to the flag pole, no disrespect is shown to the flag, and the flag may continue to fly aloft and free with nothing above it.

D. Wire antennas, not to exceed two, may be erected without prior approval of the Association, so long as the antenna system is inconspicuous when viewed from the street on which the resident's unit is located, or from any other unit.

E. Conditions:

(1) Any antenna structure shall be installed with no penetration of the roof. Cables shall be of a color compatible with the exterior finish of the building, installed so as to give the least visibility from the exterior of the building.

(2) The antenna structure shall be operated and maintained by the resident in accordance with Federal Communications Commission Rules and Regulations governing radio operations.

(3) The resident agrees to take all responsibility for roof protection during installation, repair, and maintenance of an antenna structure.

(4) The resident agrees to indemnify the Association for any and all liability, including but not limited to personal injury and roof repair, relating to the installation, repair, and maintenance of the antenna structure.

(5) Any antenna to be erected in accordance with this section must be in an area within the exclusive use or control of the resident, or within a limited common element. A limited common element is an area assigned to a specific resident, but still considered to be property of the association, but where the resident has the right to exclude others. Examples include, but are not limited to, balconies, porches, passageways, windows, parking places, backyards, and boat slips, as well as the roof immediately above a unit where there is no other unit above the resident.

Index