

A guide to HDTV viewing in Wilmington, North Carolina

By Dan Ullmer and Ray Heath

Revised 7/28/2016

Introduction

On September 8th, 2008, analog television signals were turned off in Wilmington, NC. Viewers now receive our HDTV (High Definition Television) signals from our tower site located near Winnabow in the center of Brunswick County. This white paper is to assist viewers with setting up the HDTVs and set top boxes

HDTV is not necessarily HD (high definition) all the time and depends on the program creator and the television station having the needed equipment to actually create and broadcast the HD feed. HD is always in 16x9 format (wide screen). SD may be in a 4x3 format (old narrower screen shape you are accustomed to seeing), but can be 16X9 wide screen as well. WECT and WSFX broadcast nearly all content in HD format on our main .1 channels.

Because HDTV signals are broadcast with data like computers, bad data results in blocking, bad audio, or usually no picture and sound. Most often, the picture is perfect or nothing at all, there is little in-between, and this is known as the cliff effect. This has enormous consequences when tuning in a station. You cannot optimize your antenna very well by looking at the picture because there won't be any picture until you have a good signal. We will talk in detail about this in section titled: Setting up your HDTV or converter box.

Cable and Satellite Viewers

If you subscribe to Cable or Satellite service, you will receive our signal from their distribution systems and you do not need an over the air antenna. However, if you are interested in HD television viewing, it is very important that you check carefully on the services they offer. You may need to subscribe to an HD service and HD set top box to receive local television stations in true HD quality.

HDTV channel assignments for Wilmington, NC

All Wilmington, North Carolina HDTV channels are in the UHF (Ultra High Frequency) band, but something happens when you select a HDTV channel that may not be obvious. Because our HDTV signal is digital, we can tell the TV or converter box to display a different channel number than the actual frequency channel. For example, WECT broadcasts on UHF frequency channel 44, but we tell your TV and converter box to display 6.1 so it is easy to associate our digital channel to our old analog channel. We also broadcast additional channels on 6.2, 6.3 and 26.2 and 26.3 for WSFX. These extra channels are not broadcast in HD because there is not sufficient room in the allowed spectrum and the older programs were not recorded in HD.

You must first receive a good signal from the station before the digital channel number will appear on the receiver. Most remotes have a key with a dash mark. Use dash for the dot to select 6.1, for example, by pressing 6-1 and enter.

A guide to HDTV viewing in Wilmington, North Carolina - continued

Major HDTV (High definition television) channels in Wilmington, NC

Call letters	Affiliation (Network)	HDTV Main Channel #	Actual HDTV UHF Channel#
WECT	NBC	6.1	44
WSFX	FOX	26.1	30
WWAY	ABC	3.1	46
WUNJ	PBS	39.1	29
WILM		10.1 (low power)	40

HD Televisions

Most HD televisions sold today have built-in HD tuners, if it does not; you must purchase an external HD tuner with component or HDMI outputs or use a set top box from your cable or satellite provider. To connect your HD television you must also purchase the special component or HDMI cable used to move high quality television signals from one device to another.

You will hear much about resolution, 720p, 1080i, 1080p but all of them produce great television pictures. You will also hear about progressive (picture scan lines are written on the screen from top to bottom) or interlace (half the picture scan lines are written on the screen and then the other half alternating). In general, the higher the resolution, the more expensive the set will be and the sharper the images will be. The larger the screen size, the more expensive it will be and the more you will benefit from higher resolution. Projection TVs (DLP) will generally be less expensive than flat screen models but require bulb replacements every few years negating the cost benefit over time. 1080p (the very highest quality signal) is not broadcast over the air, however, HD DVD players and many gaming boxes use 1080p for maximum quality.

In general, view the various models at your local electronics store and use your own eyes to evaluate and choose the set and price that works best for you. Be sure to learn from the sales person what the store is using for a signal because if they are showing a lower quality signal the higher quality sets will not be able to show the highest quality they can provide. A 1080p program played on an HD DVD player is the very best source but many stores will be using satellite service which generally has reduced quality signals so they can provide more channels. If you would like to know what the experts and users have to say, go to the internet and use a search engine like Google or Yahoo. Enter the company name and model number followed by "reviews" into the search box and you will get many valuable opinions and ratings.

Older Analog Televisions

Older analog televisions cannot receive DTV signals by themselves, although some units have DTV tuners built in. They do not provide full HD viewing, but do provide good standard definition pictures in 4x3 format (the old standard). All analog TVs can receive DTV signals with an external converter box. Prices generally range from about \$40 to \$100 depending on features. These are available at most electronic stores or on the internet.

A guide to HDTV viewing in Wilmington, North Carolina - continued

Antennas

Success in receiving over-the-air signals is very dependent on your location and the antenna you use. If your home has a metal roof, siding, or brick you may experience weaker television signals in your home unless the antenna can be placed near an outside wall or window facing the stations transmitting tower or outside. In general, the farther away you are from the television station's broadcasting antenna, the higher gain, larger, and more expensive antenna you will need. The higher the gain, the more directional the antenna will be and the more critical aiming it at the television station's tower becomes. All HDTV television broadcasts in the Wilmington, NC area are UHF (ultra high frequency) so you should not expect good reception with rabbit ears or your old attic/rooftop antenna if it is designed only for VHF (very high frequency) stations. A good feature of UHF antennas is they are smaller than VHF antennas. UHF is also more immune to electrical interference. This is an advantage near the coast due to our salt spray and resulting electrical arcing of power line insulators. In addition, HDTV broadcast, because it is data, will never show interference on the screen or in the audio. If interference should exist, and it is severe enough, there will be blocking or no picture and sound.

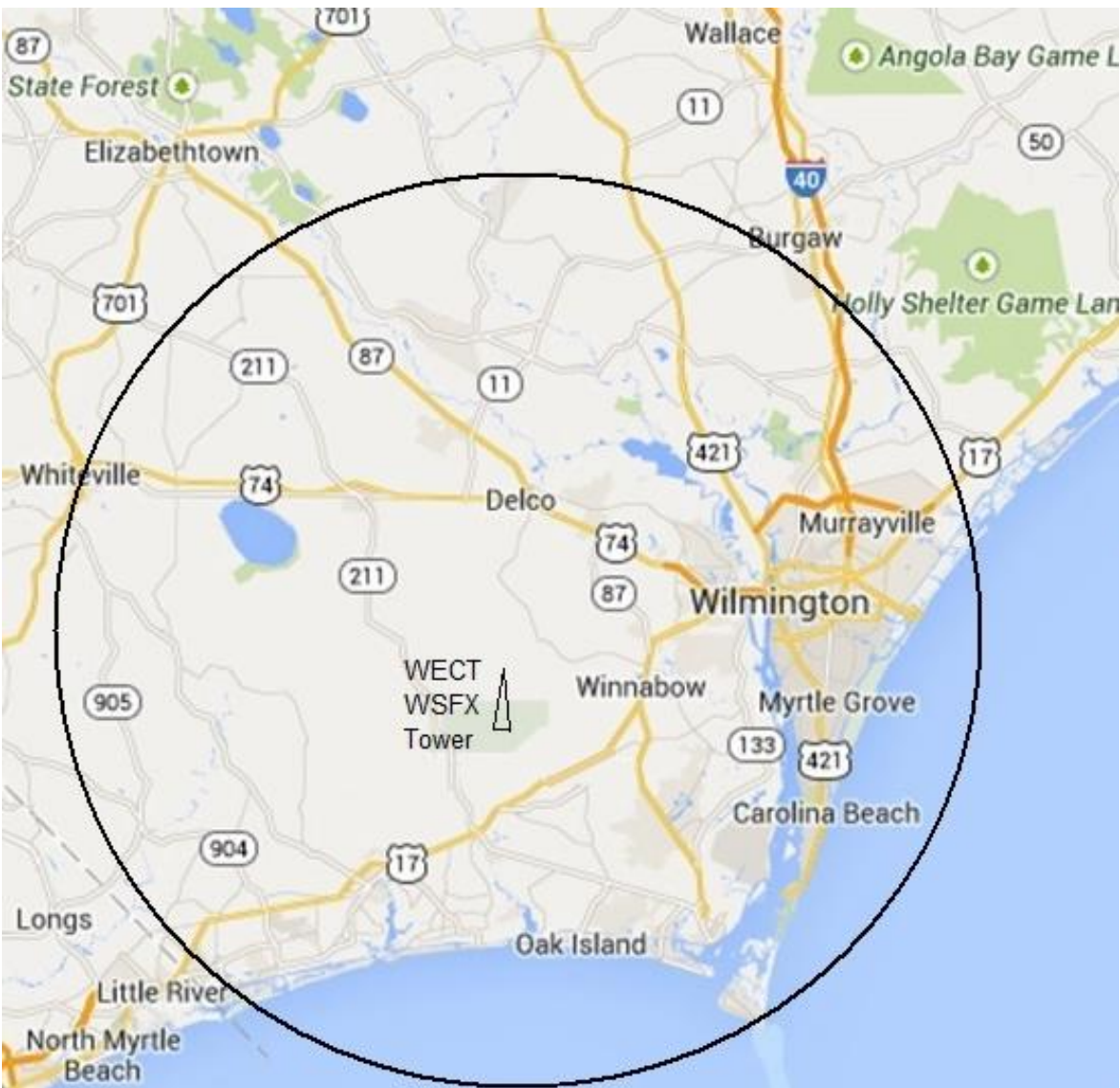
DTV (HD) Transmitter locations

All the major Wilmington HDTV transmitters are located on towers near two towns, Delco and Winnabow. As a very general guideline, dependent on many variables, you should be able to receive the local HDTV signals within 30 miles of these transmitter sites with good UHF indoor antennas. The farther you go outside this circle, the more probable it becomes that you will need a higher gain attic or roof top antenna but don't hesitate to experiment, you may be pleasantly surprised. Also, the farther you are from the tower, and more tall structures and trees there are in your area, the higher the antenna should be. Another general rule is; the higher the antenna gain, the more directional it will be, indoor or outdoor. Pointing the antenna towards the towers is very important. If you are near the towers or between them, a simpler, lower gain antenna, will likely work better than a more expensive high gain unit.

Something you should know about radio waves and indoor antennas

Your home is filled with radio waves of various frequencies for various services. These very weak signals bounce and reflect off the metal surfaces in your home and neighborhood. As these signals bounce around, they create hot spots and null spots which vary depending on frequency and physics. The trick in successfully setting up an antenna is finding the sweet spot where the signals are strongest. This may not be on top your television receiver and the sweet spots and null spots may be a little different for different channels. If you are having trouble getting a good signal for all the stations, don't hesitate to experiment by trying different locations. Outdoor antennas work much better because they are outside your home and not affected by wiring and building construction materials. It is also important to note that a stronger signal is not necessary a better signal. The goal is to minimize reflections and signal distortions that may cause your picture to breakup even with a strong signal. The antenna signal indicator on many televisions do not display signal strength, but indicate signal quality. Typically, aiming the antenna for the best signal from a transmitter from a single tower will allow good receptions from the other transmitters on the same tower but we find this may not necessary true. Experiment by checking all of the stations and choose a position that allow good reception on all channels.

A guide to DTV (HD) viewing in Wilmington, North Carolina - continued



Estimated indoor amplified antenna signal range for WECT and WSFX

Setting up your HDTV

Connect the antenna to the HDTV input terminals. Once your antenna is connected, be sure to plug in the power if it is an amplified unit. Also turn it on if there is an on/off switch. Amplified antennas will not work without power. Note: if the antenna is a UHF/VHF unit, you do not need to extend the rabbit ears for HDTV because they are used for VHF channels and all the HDTV stations in Wilmington are UHF. Next, point the antenna in the general direction of the tower sites (see above for guidance). Turn on your television and use the remote control to select auto setup (see device instructions as needed). The HDTV television will seek out each station with a good signal and map them with the HDTV channel number. Once the auto programming is complete, you will be ready to watch your favorite programs.

A guide to HDTV viewing in Wilmington, North Carolina - continued

What if some HDTV channels are missing?

I know from viewer calls that often some stations do not come in on the first attempt. This means that your antenna needs to be tuned or you may need a better antenna. Refer to your sets operating instructions for specifics but here are two general methods you can use that may help:

Setting up your antenna - Method 1

Select one of the over-the-air HDTV channels you are successfully receiving. Now go to the menu and under setup and turn on the signal strength indicator. Some sets and set top boxes have a button labeled signal or meter which you can press without using the menu. The display should show a bar representing signal strength from poor to good or weak to strong. Start rotating the antenna to increase the signal strength. You should also try changing the position and location to find the “sweet spot”. It may be higher, lower, or several feet one way or another. For indoor antennas a spot near a window typically is best, preferably facing the transmitter location in Winnabow. Once you achieve the strongest picture possible, go back and select auto setup. The digital television or converter box should now find all the stations and map them to the channel number associated with the old analog station. If you are using an attic or roof top antenna, someone will have to observe the signal strength and communicate this to the person turning the antenna until you have the best signal. If you still can’t receive all the local stations I have listed, try another station you can get and repeat this procedure. If it still does not work for all stations, you will likely need a better antenna or a better location for the antenna.

Setting up your antenna - Method 2

With the digital television or converter box remote, enter the over-the-air HDTV channel number I listed earlier in this article (page two). In the example of WECT-DT, enter channel 44. Now go to the menu and under setup, turn on the signal strength indicator. Some of the better converter boxes have a button labeled signal which you can press without using the menu. The display should show a bar representing signal strength from poor to good or weak to strong and indicate the channel number, in our case, 44. Now you start rotating the antenna to increase the signal strength. If you cannot increase it enough, start changing the position and location to find the “sweet spot”. It may be higher, lower, or several feet one way or another. It may need to be placed near a window. If you can’t quite get it, a better antenna may be needed. If the signal is very weak, you will need to consider purchasing an outdoor or attic antenna.

In general, the weaker the signal, the better the antenna you will need to buy. Once you achieve the strongest picture possible, go back and select auto setup. The digital television or converter box should now find all the stations and map them to the channel number associated with the old analog station, in our case, 6.1. If you are using an attic or roof top antenna, someone will have to observe the signal strength and shout to the person turning the antenna until you have the best signal.

If you have strange problems with your HDTV

I have heard about many strange problems from viewers concerning their HDTVs. These sets are sophisticated and have built in microprocessors (computers) inside. If you run into a strange problem with your HDTV that you can't figure out, we recommend that you turn it off and unplug from the wall for 10 minutes. Then plug the set back into the wall outlet, turn it on, and go to the menu and re-scan your channels just like you did when you first purchased the set. This will cause the set to reload the software and clear out any corrupt operating parameters frequently correcting many problems.

I hope you find these instructions helpful and that it allows you to enjoy all your favorite programming on your new digital television or set top box with the best ever pictures and sound. If you have the internet you can find a great deal of information available and a good place to start is www.WECT.com.

Below are links that we have found useful in setting up your antenna system.

Antenna Web. A useful website that allows you to type your address and provides distances, directions, and signal levels available.

<https://www.antennaweb.org/Address>

Rabbit Ears. Another website to provides a lot of interesting tools. More technical than Antenna Web.

<http://www.rabbitears.info/>

TV Fool Another locator tool that you can use to search by address to find distances and locations to the transmitters available in your area.

<http://tvfool.com/>

Consumer Electronics Association (CEA) Antenna Selection. Courtesy of Channel Master,

<http://support.channelmaster.com/hc/en-us/articles/200383725-Consumer-Electronics-Association-CEA-Antenna-Selection>

END