Lawrence Township Cable and Telecommunication Advisory Committee FAQ

Q: Please explain what is going to happen when conversion of over-the-air television broadcasts to the digital format takes place?

A: Congress mandated that all TV broadcasting be transitioned from analog to digital transmission by February 17, 2009. The deadline has been extended to June 12, 2009. However, many TV stations will make the switch before then, including many who transitioned on February 17th as was originally planned.

With the digital television (DTV) transition, the United States is moving from analog to digital service for full power over-the-air TV broadcasts. After June 12, 2009, analog-only TVs will require a converter box to receive full-power over-the-air TV broadcasts with an antenna. Analog-only TVs should also continue to work as before to receive low power, Class A or translator television stations and with cable and satellite TV services, gaming consoles, VCRs, DVD players, and similar products.

Most TV sets made before 1998 do not have a digital tuner. Analog TV sets made since March, 2007 should all be clearly labeled as analog. If you're unsure whether your TV has a digital tuner, refer to the user manual that came with your TV set. If you've lost or misplaced your TV user manual, most TV manufacturers provide their user manuals online. Go to your TV manufacturer's web site and look for the user manual for your TV model.

Information about obtaining subsidized coupons for the government's converter box program is available:

www.dtv2009.gov

1-888-DTV-2009

1-877-530-2634 (TTY)

The following links can be helpful in explaining in additional detail what you can expect to happen by June 2009, and what you will need to prepare in order to continue receiving over-the-air television broadcasts:

http://www.comcast.com/Customers/Faq/FaqCategory.ashx?CatId=119

www.DTVanswers.com

Q: If I am a Comcast subscriber, do I need a digital converter box to continue receiving television programs?

A: While broadcasters are preparing to change the way they transmit their over-the-air broadcast TV signals in 2009, companies like Comcast also are migrating certain cable channels in some areas to all-digital delivery that will require a digital cable box. The vast majority of Comcast customers already have digital service and there are inexpensive options for analog customers that want to enjoy the benefits of digital cable without having to change their level of service. Customers can visit Comcast's office at 940 Prospect Street in Trenton to pick up a digital box or call 1-800-COMCAST to have a self installation kit mailed to their homes. Pricing information is available in person or by phone for customers to decide the best fit for their viewing needs.

Q: If I am a Verizon subscriber, do I need a digital converter box to continue receiving television programs?

A: As a FiOS TV subscriber, any TV connected to FiOS will not be affected by the national transition to digital TV. If you have TV sets that are not connected to FiOS (in other words, TVs that use an antenna to receive over-the-air broadcasts) then the digital transition will affect your ability to get a signal only if your TV set does not have a digital tuner.

Q: What do I need to do to receive High Definition television programs from Comcast?

A: Customers must own a high-definition television set and rent a high-definition (HD) converter box to receive channels in high-definition format. Once again, discussion by phone or in person at Comcast's service center will address any questions customers may have about HD signal delivery.

Q: What do I need to do to receive High Definition television programs from Verizon?

A: Customers receiving FiOS TV service need to have a HD DVR, HD set-top box or Cablecard on each HD-compatible television so that they can enjoy the HD programming offered over FiOS TV. Contacting Verizon directly will provide more information about the equipment that best suits your specific needs.

Q: If I subscribe to Verizon's FiOS for television and/or internet service, will I be able to keep my existing copper telephone service?

A: Verizon's FiOS network is a state-of-the-art fiber optic network that is less susceptible to inclement weather and easier to maintain than copper. And, you are able to receive the same service that you had received over the copper network. While almost none of our FiOS customers choose to stay on the copper network, if you really want to keep your existing copper telephone service, this can usually be done unless there are special circumstances present.

Q: If my Verizon FiOS subscription includes digital telephone service, what will happen to the telephone copper wiring? Will I be able to go back to it if I change my mind about FiOS in the future?

A: Verizon: As explained above, the FiOS network is extremely reliable and opens up many exciting services that are not available on a copper network. In the rare situation where a customer requests to go back to the copper network, this can usually be done unless there are special circumstances present.

Q: If I have multiple telephone lines coming in to my residence (e.g. voice line, and a FAX line), can I maintain the non-FiOS line as a copper line?

A: In virtually every instance, FiOS customers receive all their services, including additional lines, over the FiOS network. For customers that have unique circumstances and need maintain a copper line, this can usually be done unless special circumstances are present.

Q: The digital telephone interface box for Verizon FiOS or Comcast cable has a backup battery in it, in case of a power failure. When the batteries are new and in good condition, for how many hours will they provide backup power for my telephone service? For how many hours will they backup my phone service, say after 3 or 4 years?

A: Comcast:
The lithium batteries in Comcast's eMTAs (voice capable cable modems) will provide up to 8 hours of back up power, depending on talk time. They are designed by the manufacturers to last up to 5 to 7 years, but the exact time frame really depends on a battery's individual use.

It is important to note that cordless phone bases that do not also have their own backup battery will not work during an interruption of electrical power to the home.

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A: Verizon
In the event that Verizon's Optical Network Terminal power supply is accidentally unplugged or in the event of a commercial power failure, the battery backup unit provides backup power for FiOS voice service for up to eight hours. As with all batteries, numerous conditions can impact the battery life. Verizon also provides a one year warranty on the battery and the battery life typically exceeds the warranty.

We provide extensive instructions in our FiOS home welcome kits that help the customer understand warning alerts when the battery backup units are low so that the customer has advance notice when batteries need to be replaced.

These batteries can be purchased at most major electronics outlets and home improvement stores.

Note: For both Comcast and Verizon, the internal backup battery only provides power to the digital telephone service to which the customer may have subscribed. It does not provide backup power to the Internet modem which may be located in your home. Backup power for Internet modem (and your PC) can be provided by plugging them into a UPS (Uninterruptable Power Supply) which has to be separately purchased by the home owner.

Q: How can I tell that the backup battery inside my digital telephone interface box has deteriorated to the point where it cannot provide adequate service of at least one hour during a power failure or other emergency? Who is responsible for replacing the battery?

A: Comcast:
Comcast proactively and routinely checks the health of the batteries that are supplied to their customers, and will continue to do so on an ongoing basis. Customers can also check the health of their battery by looking at the battery indicator on the front of their eMTA (voice capable cable modem).

- Light On = Good battery
- Light Flashing = Low battery
- Light Off = Bad or Missing battery

If Comcast identifies that a customer's battery is missing, is not responding properly to our network monitoring tests or is defective, they will contact the customer to ask them to check their battery's condition. If these customers request a new battery, Comcast will provide a new battery by mail with easy to use instructions on how to replace it.

A: Verizon:
The battery backup unit has audible and visual indicators that alert customers of problems with the backup unit, including when it has only limited charge remaining. The audible and visual indicators vary by backup unit type and are explained in your FiOS welcome kit or on-line at verizon.net/fiosequipment. It is very important for customers to familiarize themselves with the indicator lights and audible alarms. The customer is responsible for periodically replacing the battery.

Q: What is the difference between "interlaced" and "progressive" displays?

A: Conventional television in the United States has used a format called interlaced display. With interlaced displays, the full picture is displayed 30 times per second but it is divided into odd and even lines. In the first 60th of a second, the odd numbered lines (i.e., 1, 3, 5, 7, etc.) are displayed and in the next 60th of a second the even numbered lines are displayed (2, 4, 6, 8, etc.). It therefore takes two cycles for all lines to be shown, or one 30th of a second.

With progressive displays, all lines are shown in order. If the refresh rate is still one 60th of a second, the full picture is shown twice in the same time that an interlaced display would have shown it once.

Q: Are there any guidelines for the selection of a 16:9 HDTV screen size by viewing distance so as to get the maximum benefit of the screen's resolution? Will I notice a difference between an interlaced display vs. a progressively scanned display?

A: Taking into account the limitations of the human visual system's ability to resolve detail from a distance. So, for example, for a 50" 720-line display you have to be closer to the screen than about 10 feet for the display to become the limiting factor and for a 50" 1080-line display you can sit as close as about 6 1/2 feet before the display's resolution becomes a limiting factor. An alternative way to look at it is in terms of the display size for a given viewing distance. At 12 feet a 720-line display has to be about 60" diagonal to match the capability of the eye and a 1080-line display has to have a 90" diagonal. The chart below (Source: FirstGlimpseMag.com; June 2007) is a general guideline for selecting a 16:9 HDTV screen size based on viewing distance.

In general, progressive displays will make better pictures than interlaced displays especially when there is fast motion in the scenes, e.g., sports like basketball, and fewer artifacts, e.g., flickering and/or serrated edges on sideline and yard-line markers in football or foul-lines in baseball, especially with motion due to camera panning and zooming. However, the source of the signal, (i.e., how it was captured by the camera) and the format that was used to transmit it play a very important role. There are three issues to consider: 1) the frame rate; 2) whether the scanning is progressive or interlaced; and 3) the number of horizontal scan lines. There are three frame rates used for image capture: 24 frames per second (fps); 30 fps; and 60 fps. The 24 fps and 60 fps capture rates employ progressive scanning. The 30 fps frame rate generally employs interlaced scanning capturing 60 fields per second each having half of the total number of scan lines. There are two frame rates used for transmission: 30 fps (generally using interlace, i.e., 60 fields per second and 60 fps (always using progressive). The choice of transmission format is independent of the capture format. However the image was captured it can be converted to the chosen transmission format. The television can do no better than the input provided to it.

Almost all current HDTV consumer displays are progressively scanned at resolutions of either 720 or 1080 horizontal lines. For over-the-air, or cable programs, however, the improvement may not be significant unless the image is captured with a progressively scanned camera and transmitted using the ATSC 720p format. Also, the improvement may be less evident for older liquid crystal based displays, including Liquid Crystal on Silicon (LCOS) rear-projection HDTV sets, because of their slower response time. The latest generation of LCD displays, however, has faster pixel response times and display refresh rates of 120Hz.

Currently ABC, ESPN and Fox capture live programming in 720p and transmit all programming in 720p. NBC, CBS and PBS capture and transmit in 1080i. For all of the networks, much of the pre-recorded programming (prime-time series) is captured either on 35 mm film or with 1080p cameras running at 24 frames/second. These programs are converted to either 720p or 1080i (depending on the network) for transmission.

All digital television signals are compressed for transmission. The compression process inherently introduces degradation of image quality. The amount of degradation depends on many factors including how the image was captured, e.g., progressively or interlaced, the specific content of the image, e.g., talking heads or fast motion as in sports, the fraction of the broadcast channel allocated to the program, i.e., how many programs are being squeezed into a single channel, the sophistication of the algorithms used by the compression system, etc. In general, images captured with progressive scan are easier to compress and suffer less degradation, especially when there is fast motion in the scene. Material originated on film or scripted for television, e.g., most prime time drama and comedy shows are easier to compress than live sports or news programs. Talking heads are about the easiest of all material to compress. In the case of over-the-air broadcast the degree of degradation from compression varies from broadcaster to broadcaster for two primary reasons: 1) progressive vs. interlaced source material and 2) the number of different programs being transmitted in a single channel.

HDTV Sizes By Viewing Distance

From the breakfast table TV to the home theater widescreen, the size of an LCD or plasma matters. Start your search with the screen sizes in boldface.

Screen To Seat (feet)	16:9 Diagonal Screen Sizes Recommended* (in)
3	**15, 19, 20, 23**
4	**20, 23, 26, 30, 32**
6	**30, 32, 37, 42**
8	**42, 46, 50,** 56
10	**56, 60, 65,** 70
12	**60, 65, 70+**
16	**70+**

Source: FirstGlimpseMag.com; June 2007