

NARROWBANDING

What is it?

Across the nation the radio frequency bands used for public safety and industry have become more congested. Indeed, even in rural areas of Wisconsin, it can be hard to get a wide-area frequency for public safety in the VHF radio band (also called high-band). For over a decade the FCC has looked to convert the VHF and UHF radio bands to narrowband channels. Simply speaking, this would have each frequency licensed to use half the amount of bandwidth. In doing so, the number of available channels can be doubled (the frequency of your channel stays the same).

Radio manufacturers have seen this coming, and for the most part, all radios sold today are narrowband capable. This means that the radio will work with both wideband and narrowband channels. To convert a narrowband capable radio to a narrowband channel, the radio is reprogrammed on a per channel basis. However, older radios may not have narrowband capability. You can check if a specific 2-way radio is narrowband capable at:

https://ntc.cap.af.mil/comm/equipment/wb_summary.cfm

At the end of 2003, the FCC issued a mandate for the conversion of the VHF (high-band) and UHF bands to narrowband channels. Note this ruling *does not* affect 800 MHz systems (most trunking systems) nor the few remaining systems on low-band. The initial narrowband mandate was awkward in that it all but forced a migration to narrowband in 2008, but did not convert licenses to narrowband until 2018. The FCC recently modified the narrowband mandate as follows:

January 1, 2011: No manufacture of radio equipment with WIDEBAND channels will be allowed. No new licenses for WIDEBAND channels will be allowed.

January 1, 2013: All systems will be licensed as NARROWBAND only.

The implications for public safety in Wisconsin using the VHF (high-band) and UHF radio bands are as follows:

* Most public safety radio systems will need to be modified for narrowband operation by mid-2011, as no new wideband radios will be available after January 1, 2011.

* Radios will need to be reprogrammed for narrowband channels in 2011.

* As law enforcement, fire, and EMS tend to have multiple agency and mutual aid frequencies, a

coordinated reprogramming across multi-county areas will be needed in 2011 to maintain functional interoperability.

* Voice paging systems used for Fire and EMS can be effectively run until January 1, 2013 as the narrowband regulations affect transmitters (pagers are receivers and do not transmit like a portable radio). However, as of January 1, 2013 paging systems must also convert to narrowband. Almost all pagers in use today are capable only of wideband and will need to be replaced by 2013.

To allow a smooth transition to narrowband, it is important that all radios in a system be narrowband capable, so that only reprogramming is necessary to take a system to narrowband in 2011. Users of public safety 2-way radios in Wisconsin in the VHF (high-band) and UHF bands are recommended to consider the following:

* Plan to replace any radios without narrowband capability by 2010.

* Plan to replace pagers with narrowband capable pagers by 2012.

* Plan to replace Base Stations and other radio system components that do not have narrowband capability by 2010.

* Plan for radio reprogramming of your entire fleet in 2011.

It is just over four years until these changes will take place. Planning now and distributing the acquisition of narrowband capable equipment over time eases the impact to budgets. The impact on individual departments can vary. If you recently purchased radios to replace your fleet, it is likely you will only need reprogramming in 2011. On the other hand, if you have had reliable radios for many years and moved the radios from vehicle to vehicle (common in law enforcement squads), you may find your entire fleet needs replacement. Each radio user will be a different case.

As you upgrade your fleet, take into consideration that your radios will need to be reprogrammed in 2011. It is important your radio supplier is around in 2011 to reprogram the radios, and that the radio supplier retains all the software and hardware to reprogram radios of the vintages required. This is an important question to ask your radio supplier as you consider the migration to narrowband.