

Colorado Relocates 700 MHz Narrowband Licenses

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Photo by Eric Rubin

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By [Sandra Wendelken](#), Editor

While many public-safety agencies are waiting for the FCC to provide more direction on rebanding for the 700 MHz narrowband channels, Colorado has nearly completed 700 MHz narrowband relocation across the state.

Colorado was an early adopter of 700 MHz voice channels for the statewide Digital Trunked Radio System (DTRS) because the state was running out of 800 MHz channels. "To bring on additional agencies and add new sites such as the one in downtown Denver, we needed to find different spectrum," said Matthew Engelbrecht, electronic specialist and system technician in the Colorado Governor's Office of Information Technology.

The main catalyst for the relocation was the federal Public Safety Communications Research (PSCR) broadband demonstration network under way in Boulder, Colo. "The PSCR staff saw all these narrowband voice channels sitting in the broadband spectrum," Engelbrecht said. "We got together and looked at how to do the relocation. It has a huge benefit to all public safety."

State officials held a meeting to educate the local agencies on DTRS about the benefit of relocating the 700 MHz voice channels. Local agencies from Boulder to Pueblo to

Elbert County all applied for new frequencies, along with the state of Colorado. “The local agencies were more than willing to get the application process going,” Engelbrecht said. “There was a monetary investment because some agencies had to pay a third-party provider to do the frequency change at their sites. There was some minor investment in capital.”

Most of the applications then were approved through the regional planning committee (RPC) and FCC all in a short timeline. State officials undertook changing the frequencies at the sites. “With the Project 25 (P25) technology we have, P25 sends the frequencies used over the air,” Engelbrecht said. “We didn’t need to touch the radio equipment in the field; we just changed the frequencies at the site.”

The bulk of the work of retuning sites took place last summer with one site left to do in Elbert County. The license for that site is pending at the FCC, but all retuning is planned for completion by mid-March. Engelbrecht said the process was similar to 800 MHz rebanding except officials didn’t have to touch the state’s more than 55,000 subscriber units. “As people reprogram radios, we’ll add the new frequencies, but there’s not a huge rush,” he said.

“The state was very helpful by re-prioritizing the sites for retuning near our demonstration project area,” said Jeff Bratcher, a division chief at the Institute for Telecommunication Sciences (ITS) and technical manager for the PSCR. “Putting our demonstration network over the air was contingent on their retuning, and we didn’t want to impact their mission-critical voice system.”

Dereck Orr, project manager for the PSCR, said the Colorado officials presented information about the state’s 700 MHz relocation to the Safecom executive committee, offering helpful information for other jurisdictions that will have to relocate their 700 MHz narrowband operations. There are about 45 public-safety entities using 700 MHz narrowband spectrum that need to relocate.

In 2008, the FCC redesignated 10 megahertz of public-safety 700 MHz spectrum for establishing a nationwide, interoperable broadband public-safety network and consolidated the public-safety 700 MHz narrowband channels (769 – 775/799 – 805 MHz). The upper 700 MHz D block licensee was expected to pay the costs of relocating narrowband radios to the new consolidated segments.

Fortunately, in 2009, the FCC stayed its original deadline for relocating 700 MHz narrowband users until other details surrounding the D block are decided. The FCC is asking for input on what to do about the 700 MHz narrowband relocation in its further notice of proposed rulemaking (FNPRM) on interoperability released Tuesday.

The Public Safety Spectrum Trust (PSST), which holds the nationwide public-safety 700 MHz broadband license, is directed to relocate current public-safety narrowband operations in channels 63 and 68 and the upper 1 megahertz of channels 64 and 69, according to FCC guidelines. The PSST recommended local/regional public-safety operators should be responsible for relocating incumbent narrowband users in their proposed network service areas before they begin deploying broadband systems. According to PSST and Motorola estimates, the cost for nationwide 700 MHz narrowband relocation is about \$76 million.

Harlin McEwen, PSST chairman, said paying for the relocation is the biggest factor for the 45 agencies that are affected. “Those 45 entities should be making it clear to the FCC that they need financial help to do this,” McEwen said. “We believe the only way it will happen is through some federal funding program.”

Interference between 700 MHz broadband and narrowband users is an unknown for most areas of the country because users in both spectrum bands aren't yet operating in most areas. However, in Colorado, users are occupying both segments of spectrum.

“We have 700 MHz narrowband users close to the PSCR’s broadband network, so we partnered with them and have given them radios to test on their system to determine if there’s interference,” Engelbrecht said. “With the Sprint Nextel interference we have at 800 MHz, we wanted to be aware of any potential 700 MHz interference.”

Bratcher said the interference tests haven’t begun yet, but details are being discussed to begin the effort.

Engelbrecht said that Colorado doesn’t have a huge number of 700 MHz radio users in the Boulder area, so he’s hopeful interference won’t be a problem. The Boulder County (Colo.) Sheriff’s Office operates an analog conventional VHF radio system, for example.

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