

# Narrowband Proposal

Last year<sup>1)</sup>, we discussed how the BCARCC was considering following the [Western Washington Amateur Relay Association](#)'s proposal to move the 2m repeater spacing from 20 kHz to 12.5 kHz and the 70cm repeater spacing from 25 kHz to 12.5 kHz.

The 70cm move is pretty straight forward since 12.5 kHz fits exactly twice in 25 kHz so no-one would have to actually change frequency other than changing to narrowband. However, the 2m move is more involved since 12.5 kHz doesn't fit nicely into 20 kHz. In fact, it takes 8 channels of 12.5 kHz to overlap with with 5 channels of 20 kHz.

## 2m Repeater Proposal

The [latest proposal](#) doesn't explicitly state how the mapping from the current to the proposed frequencies would be, but looking at the list, the following scheme seems to minimize the frequency shift to a maximum of  $\pm 5.0$  kHz.

This plan would:

- Increase the number of 2m repeater channels from 59 to 94
- With 11 channels keeping the same frequency,
- 24 channels moving up or down by 2.5 kHz, and
- 24 channels moving up or down by 5.0 kHz

Our repeater, for example, would probably have to move to 147.225 MHz. One technical question we'd have to figure out is whether a 5 kHz change would require the duplexer to be retuned. The answer isn't immediately obvious: 5 kHz represents 0.8% of the 600 kHz spread between the input and the output; it may or may not be significant.

## What About 2m Simplex?

There's no mention of simplex in the WWARA proposal, which makes sense since 2m simplex channels aren't congested the way 2m repeater channels are. However, changing the bandwidth for repeaters does present a bit of an issue for simplex.

In Canada, [FM simplex frequencies](#) are channelized in 15 kHz spread for 2m and 25 kHz spread for 70 cm.<sup>2)</sup> Again, 70 cm isn't an issue because 12.5 kHz fits nicely in 25 kHz. 2m is again more challenging. Doing the same analysis as above, one possible plan would add 5 new channels, keep 4 on the same frequencies, and change 21 by at most  $\pm 5.0$  kHz.

In itself, there's probably no real benefit in changing to narrowband for simplex, but as I was looking at the menus on my radio, I realized that switching to narrowband for repeaters would mean that I would probably change two settings:

1. Change FM to FM-N

## 2. Change my VFO control from 5 kHz to 6.25 kHz (or from 5 kHz to 12.5 kHz)

It would be a bit annoying to keep two different sets of settings (narrowband with 6.25 kHz VFO spacing for repeaters, and narrowband with 5 kHz VFO spacing for simplex).

The big issue for simplex is that, the national calling frequency would move to 146.525. On a spreadsheet, it's possible to fix the calling frequency to 146.520 and move 12.5 kHz away from there in both directions, however on my radio, when I set my VFO spacing to 6.25 kHz or 12.5 kHz, I hit 146.525 instead. Many radios are also pre-programmed with a calling frequency button set to 145.520 so that would be a much bigger change. Maybe this is one of the reasons that WWARA doesn't address simplex frequencies.

<sup>1)</sup>

See [meeting minutes for April 4, 2020, New Business, Point 2](#)

<sup>2)</sup>

Also note that above 147.420 MHz, half of the channels are for analogue and half are for digital.