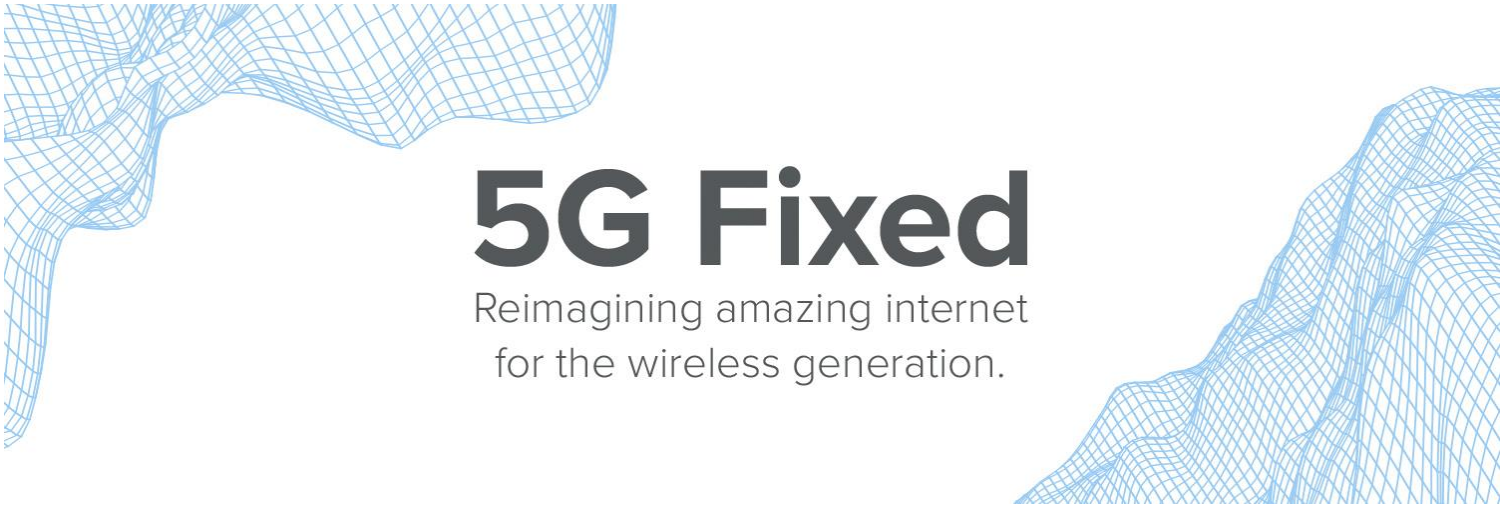
BoiseWiFi 5G Fixed Wireless



As **BoiseWiFi** celebrates our 5th year anniversary this year we are planning our next generation 5G Fixed Wireless solutions.

For many years, fixed wireless has been the only broadband solution in rural areas where small independent Wireless ISPs or WISPs play a vital role and are often the only option serving local communities. We are excited for the thousands of WISPs who have worked hard over the years to help prove out a need for better technology. Starting soon, they can enjoy a huge jump in consumer speeds up to hundreds of Megabits per second or over 8 times faster than what the FCC now calls broadband. This represents a huge upgrade for rural and metro areas.

We are excited about new opportunities within city areas where the bulk of the population resides and where connectivity and speeds have also languished. To scale fixed wireless in city areas there were only two options 1. get more spectrum, or 2. get far more spectrally efficient in existing crowded spectrum.

BoiseWiFi 5G Fixed Wireless will use new Spectrum Reuse Synchronization (SRS) technologies that can easily reduce spectrum utilization by 400% across neighborhoods. This will drive a new category of ISPs, Municipalities and Cooperatives, that can leverage 5G Fixed Wireless solutions as a fiber-fast alternative, covering high density areas now at up to 1/10th the cost.

To simplify ISP network design and deployment, BoiseWiFi uses two reference architectures, the rural 5G Giga-PoP for deploying high-capacity tower sites & the urban 5G Micro-PoP for scaling BoiseWiFi 5G Fixed Wireless broadly across dense neighborhoods.

Let's talk a bit about the economics of delivering scalable internet access. When we founded BoiseWiFi, the broadband industry had just begun to stagnate - the costs and ROI to push fiber into neighborhoods and homes far exceeded the healthy investment levels where DSL had originally prospered. No one really needed a Gigabit of speed nor wanted to pay more for it.

Don't believe me? A state rural "vanity project" recently began digging, netting out to $37k spent per home connected. Even at a more practical $1,200-$3,000 per home, it's not a healthy investment opportunity if the ROI is anticipated at 3-6 years.

2016 brought the topic of fixed wireless to the mainstream press, as nearly every major LTE cellular carrier waxed eloquently about 10 Gbps fixed broadband speeds with new 5G technology by 2020. What incredible magic was being conjured to reach these speeds? Pick your favorite new buzzwords, Massive MIMO, phased array beamforming, millimeter wave spectrum – but most importantly, they simply are proposing to eat up gobs of very limited use spectrum at 28 GHz and above.

Real-world deployments, as well as physics, have clearly demonstrated exactly why the mmWave spectrum isn't suitable for last-mile consumer access – physical propagation characteristics and extremely common foliage and obstructions that can change constantly, and cannot be overcome. In typical suburban neighborhoods, line of sight is virtually required for that spectrum to operate. Don't get me wrong, mmWave spectrum is fantastic for critically needed backhaul infrastructure between base stations where fiber may not be available and line of sight can be planned. The one thing in common, however, is that 5G Fixed Wireless requires new unique base station and client technology at each home – so the past legacy, and future interoperability with mobile 5G smart phones is simply not important.

BoiseWiFi is taking another path to scaling; getting much more spectrally efficient, so that we could better reuse lower sub-6 GHz spectrum, providing significantly improved signal propagation to reach enough homes to be economically deployable. Synchronizing network transmission is a well-proven technique to reuse channels in cellular and fixed networks. BoiseWiFi 5G Fixed Wireless cost-effectively brings SRS technology together with the fastest commercially available radio speeds, high-order MIMO and beamforming which make it easier than ever to deploy fiber-fast speeds as a high quality consumer service.

With the original vision we laid out 5 years ago now coming to fruition, it's an incredibly exciting time for the hard working BoiseWiFi team as we witness businesses starting to broadly accept broadband using 5th generation wireless technology. Looking to the future of new technology and talent that will join BoiseWiFi, along with game changing innovation, we will deliver and paint an incredible picture of a 5G fixed wireless connected future.