

## June 2, 2020 - So, How do We Use Fiber Anyway?

Marrowstone Wireless uses Fiberoptic cabling for two main purposes:

First, we use our mainline fibers to direct drive full bandwidth to all our on Island HeadEnd locations.

Second, we use single fibers to connect between our HeadEnd locations and our Fiber To The Home (FTTH) clients via Passive Optical Networks (PON).

At this time we have 9 active PON fiber zones on Island. A PON is fed by a 'Fiber PON controller' that divides the bandwidth among all the homes served by the PON.



Each PON signal can be passively optically split to serve up to 256 homes. Actually, it is possible to serve the whole island from one PON but, each home gets less signal and it is possible to have the signal “peter out” at the end of the line.

To prevent that, we can use up to 16 separate PONs (9 at this time) with smaller coverage areas and no more than 32 FTTH homes served by each PON. Everybody gets plenty of bandwidth.

We accomplish this by creating several “Central Office on a pole” HeadEnd locations with PON controllers on island. Not the cheapest way to do things but, a better way in the long run...

We also, are using those direct fibers to increase bandwidth to our on-island Microwave radio Access points for Nordland, Meade Road and Smith Road now. More to come.

BTW: Kevin is making a fiber “Fusion Splice” at a FTTH distribution box in the photo...

Peace, David

David G. Brader, President, MACaid, Inc. dba Marrowstone Wireless