

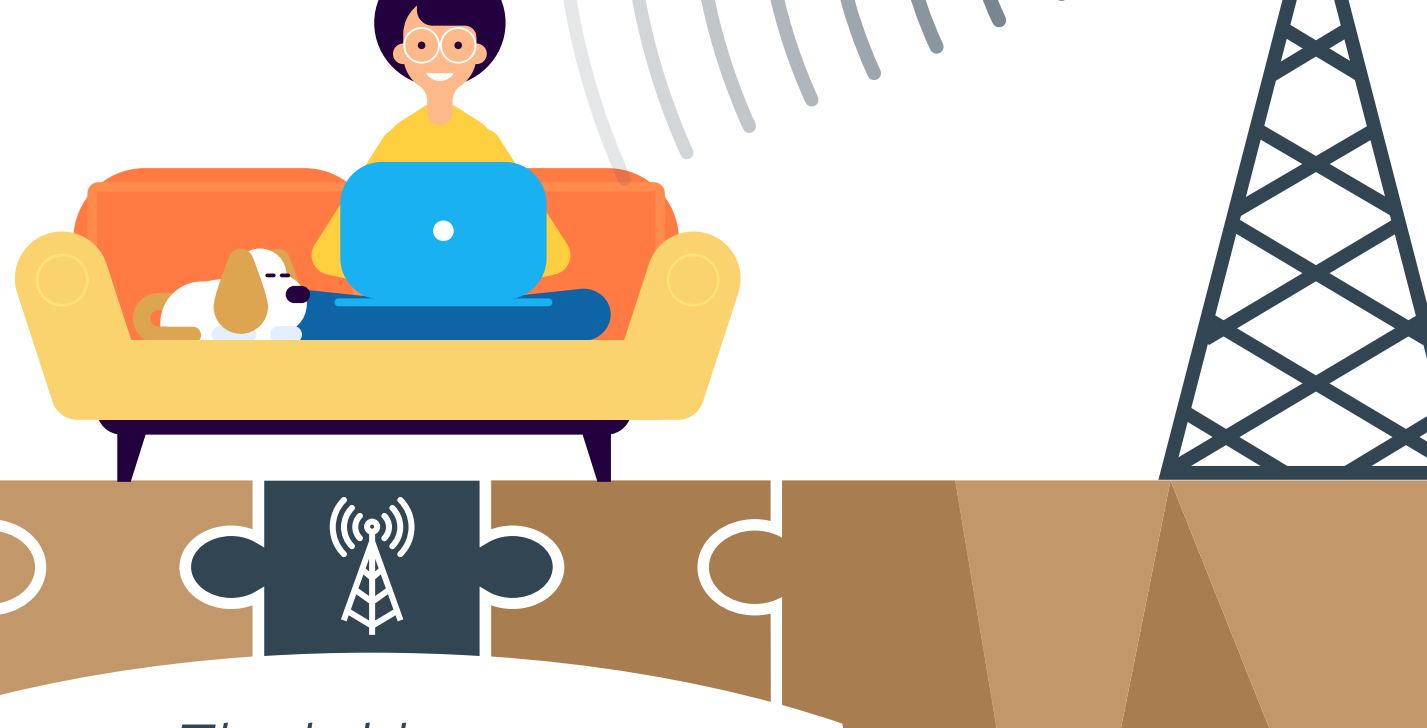
# Fixed Wireless

## A Bridge to Better Rural Broadband

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ENGINEERING

Fixed wireless has a long and rich history both in the US and abroad as a bridge to rural markets. With favorable network economics, especially compared to more expensive wireline options, fixed wireless access (FWA) continues to draw interest and attention in the broadband world. So much so that it's no longer just for consumers in rural areas. Improvements in FWA technology are leading to a host of new applications, opening opportunities for broadband providers in unique and powerful ways.



The bridge to better rural broadband

### THE FWA BRIDGE TODAY

#### CURRENT U.S. COVERAGE

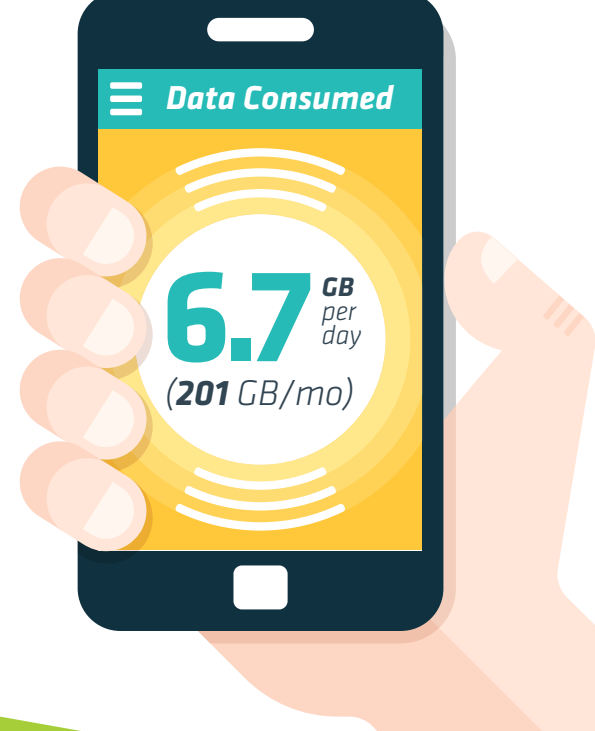


2,000 WISPs

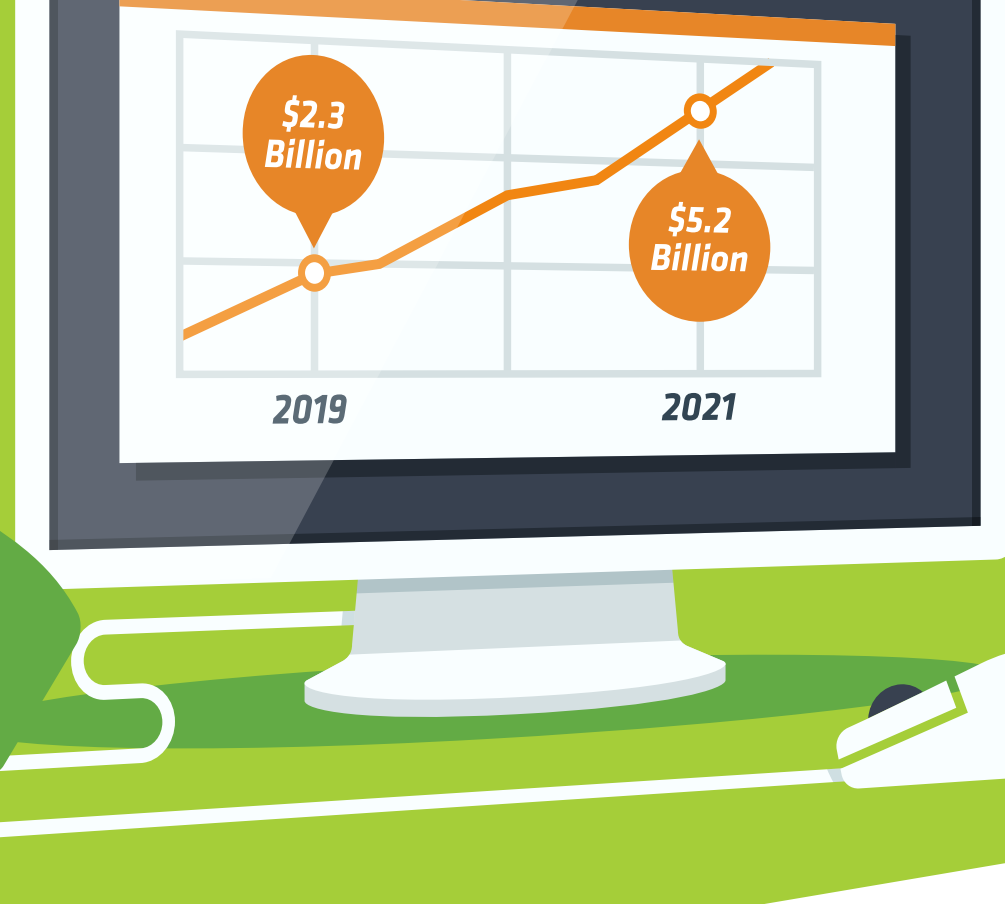


serving over 4,000,000 customers

#### WISP DATA USAGE



#### ANNUAL WISP SUBSCRIBER REVENUE



#### 5.8 GHz SPECTRUM

largest and most widely deployed Fixed Wireless spectrum in the US

### SERVING THE MARKETS OF TOMORROW WITH FWA

FWA technology is dramatically improving. Emerging fixed wireless tech is enabling higher speeds through LTE, 5G, the citizens band radio service (CBRS) band, TV White Space, and more.

#### TV WHITE SPACE SPECTRUM

Uses vacant TV broadcast spectrum, which is good at penetrating walls and foliage. Can operate in non-line-of-site applications.

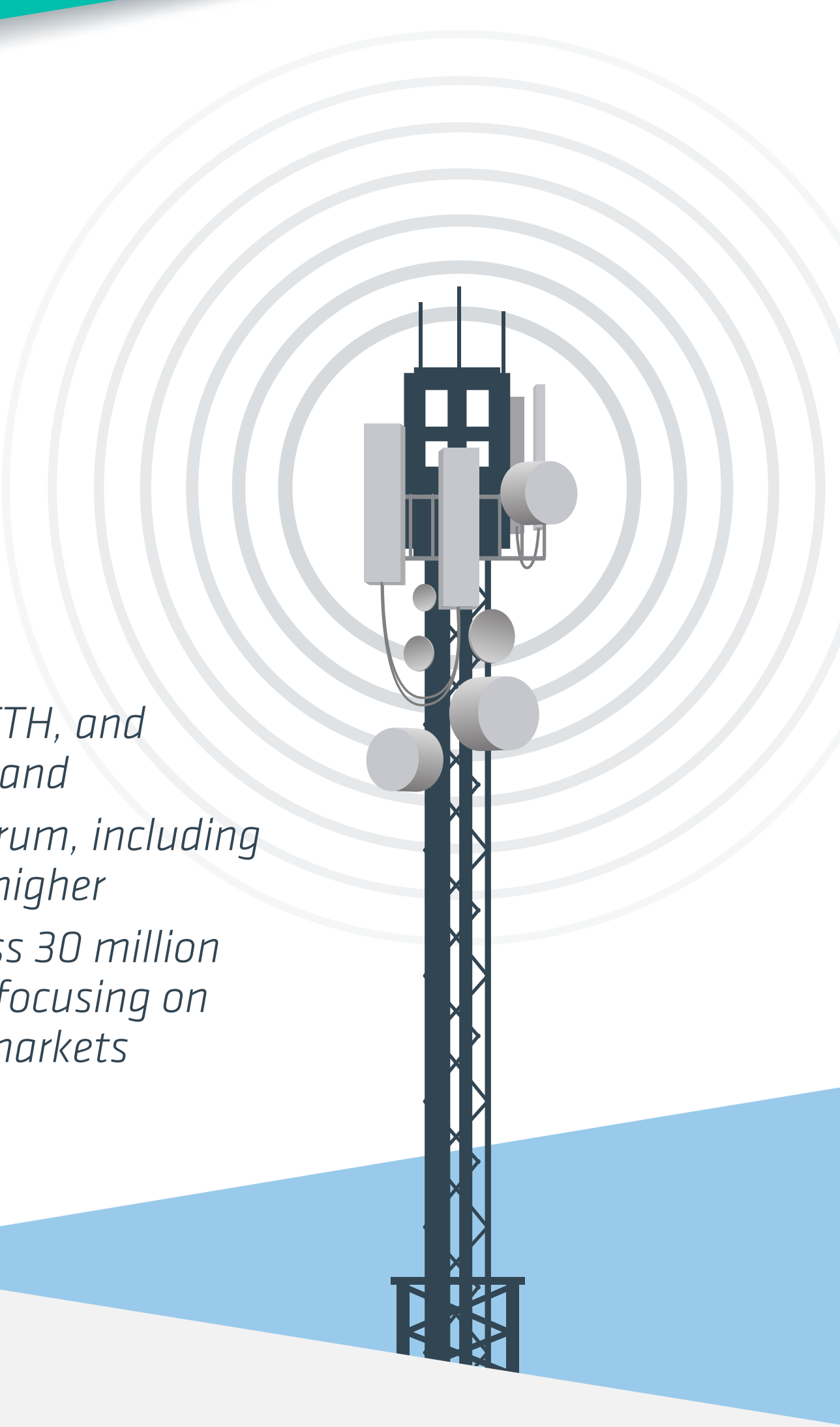
#### CBRS

(Now branded as OnGo)

- 3.5-3.7 GHz
- LTE today, 5G tomorrow

#### 5G FWA

- Alternative to DSL, FTTH, and DOCSIS-based broadband
- Millimeter wave spectrum, including bands of 24 GHz and higher
- Verizon intends to pass 30 million homes with 5G FWA, focusing on urban and suburban markets



The future looks bright for FWA, as both businesses and policymakers increasingly see this technology as part of the answer to address the digital divide.

Turn to Finley Engineering for network assessment, planning, and engineering services that ensure you are ready for the future of fixed wireless.

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Sources:  
2017 BWA Industry Report, Preseem Fixed Wireless Network Report - 1Q19, wispa.org, Microsoft Airband, Windstream CEO Eyes Gigabit Fixed Wireless- Sees Copper Becoming "Irrelevant", Midea Completes Successful CBRS Spectrum Access System Trial Testing, Connecting the Unconnected: Closing the Fixed Wireless Access Gap, Verizon CFO Reiterates Plans to Pass 30 Million Homes With 5G