

Fixed Wireless Access / Wireless Internet Service Providers

In rural or remote regions of Alberta where wired cable, DSL, or fibre infrastructure is unavailable, fixed wireless broadband has become a common solution for internet connectivity. Companies operating fixed wireless networks are known as Wireless Internet Service Providers (WISPs) and there are a number of WISP options throughout Alberta (see Appendix A4).

While wireless solutions are cost effective and cover a larger geographic area, there are concerns about the scalability and robustness of the technology. For example, it is not clear how the technology will be able to accommodate ever growing symmetric bandwidth needs as more devices and services come online.

Wireless Internet Service Providers in Alberta purchase backhaul internet bandwidth via a major ISP that connects to a location in the WISP's service territory — usually Axia, TELUS, Bell, or Shaw. From there, the WISP builds additional backhaul connections — either fibre or microwave links — between the public internet connection point and the WISP's towers (See Figure 16).

A small dish or antenna that is mounted to the roof of the subscriber's premise is directed at the WISP's nearest access point. This means remote customers can be added to the network without trenching or hanging physical cables, or modifying existing infrastructure. Subscribers to a fixed wireless service usually pay an installation fee to cover the cost of installing antenna equipment on their premises.

A WISP may also construct its own towers for signal transmission or co-locate equipment on existing radio towers or other points of high elevation, such as water towers or grain silos (see Town of Viking in Municipal/County – Other Initiatives). Co-locating transmission equipment on existing radio towers, however, has proven difficult for WISPs in Alberta. In 2008, during the Advanced Wireless Services (AWS) auction, Industry Canada [mandated antenna tower and site sharing](#)⁹⁵. But despite the mandated tower sharing policy, the WISPs that Cybera spoke to reported difficulty and delays with co-locating equipment on incumbents' towers.

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Figure 17. High-level overview of the network architecture for delivery of internet services by WISPs.

References

⁹⁵Industry Canada. [CPC-2-0-17 — Conditions of Licence for Mandatory Roaming and Antenna Tower and Site Sharing and to Prohibit Exclusive Site Arrangements](#). Accessed 17 May, 2016.