


Waupaca Online
 FIXED-WIRELESS INTERNET BY THE CITY OF WAUPACA



About Waupaca Online

- Publicly Operated Internet Utility – City of Waupaca Telecommunications Utility
- 20th Anniversary
- Currently Serve 460 Customers (In City of Waupaca and in rural Waupaca and Outagamie counties)
- Started to fill voids of high-speed internet service in the City of Waupaca
- Not profit driven – all money reinvested into operations – No tax dollars utilized – Self sufficient (separate enterprise fund)

What is Fixed Wireless Internet

- Comes to your house wirelessly instead of via a cable
- Always on connection
- Not Satellite or cellular
- No data limits – overages – throttling
- Meets “broadband” standards up-to 25Mbps download / 5Mbps upload
- Low Latency
- Line of Site Important!
- “Neighbors helping Neighbors”

Fixed Wireless Internet

- Residential
- Standard Business
- Business Broadband Plus
- Essentials

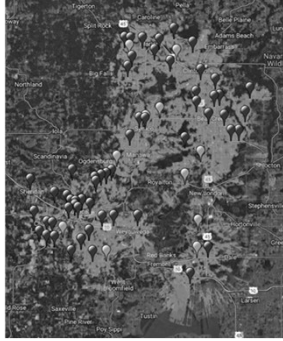
Example Customer
 5 Links to Get Total
 Total Distance of Links – 31 miles (wireless links)
 - 21 miles direct
 Max Consistent Speed: 53Mbps download
 21Mbps upload
 Latency – Average Ping Time 25ms

Unlimited Data

- 3.6tb 50Mbps plan (Apartment Complex)
- 1.9tb 25Mbps plan
- 1.8tb 25Mbps plan
- 1.3tb 15Mbps plan
- 1.2tb 15Mbps plan
- 1.2tb 25Mbps plan
- 1.1tb 10Mbps plan
- 1tb 5Mbps plan
- 960gb 10Mbps plan
- 900gb 10Mbps plan

- Average Data "limit"
 - Cellular/Satellite/Some Wireless
 - Range from 22gb-150gb/month

Coverage Area



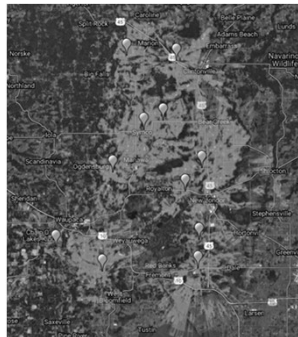
WI PSC Broadband Expansion Grants

- 2015 – Upgrade Backhaul & AP Infrastructure
- 2018 – Northern Waupaca County Expansion (Marion, Manawa, Bear Creek, Clintonville, DuPont)
- 2022 – Upgrade key backhuls to licensed 11ghz



Partnership with Waupaca County & WCEDC

- WCEDC Utilized CDBG funding to build 11 towers
- Towers are on municipally owned land in places where fixed-wireless will have the best success
- WOL has lease with Waupaca County to utilize towers
- County looking at other internet expansion efforts in near future including other tenants on these towers, utilization of county fiber network and ARPA funding toward internet expansion projects.
- CDBG has low-income requirement. We created a low-income pricing tier.



The Future

- Newer Technologies – eg. WiFi6 (802.11ax) and WiFi7 (802.11be)
 - More efficient use of spectrum
 - Higher Throughput
 - MU-MIMO – reduces bottlenecks
 - Lower Latency
- 6Ghz Band
- More licensed backhaul links
 - Higher capacity
 - Less chance of interference

What can you do as an elected/municipal official?

- Make internet a priority
- Become Informed – RDOF, Grant Awards and other projects
- Be supportive of your residents/businesses. Attempt to relay needs to ISP's that serve your area. Start a dialog with all ISP's.
- Talk to neighboring municipalities regarding internet coverage holes. ISP's do not follow municipal boundaries.
- Start a dialogue with elected officials at higher levels (county/state)
- Support ISP's to make their job as easy as possible to expand/upgrade coverage.
 - Help form key relationships
 - Letters of Support for Grant funding / Coordination of grant efforts
 - Waiving of any permit fees (or consolidation of permits), if required

Thank You

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