Providing Middle and Last Km Access Over Open Farmland in Dawn-Euphemia Township
Project Problem Statement

A Middle-km Broadband Problem Statement

A technology solution required to provide a cost-effective, self-configuring, high-resilience, high-performance solution extending internet access service distances of 10 - 15 km from the broadband POP in a host community. This high performance residential broadband solution across flat expanses of farmland with a limited number of trees.
Selected Service Provider

Headquartered in 
Thamesville, Ontario

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<tr>
<th>Key Strengths of MPV Wifi for Residents</th>
<th>Rural Ontario Community Experience</th>
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<tr>
<td>• Extensive Experience - installing wireless networks in Rural Ontario</td>
<td>• Already Serving Dawn-Euphemia Township</td>
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<td>• Local Internet Service Provider</td>
<td>• Currently also offers internet access services in Chatham-Kent, Middlesex County, and Elgin County</td>
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<td>• Strong Understanding of Rural and Farming Clients needs</td>
<td>• Over 40 towers in MPV Wifi Network</td>
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<td>• Wide Coverage of high-quality wireless internet access for the township</td>
<td>• 600 Residential Customers in Southwestern Ontario</td>
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<td>• Multiple Types of Wireless Services to deal with open spaces or dense tree cover</td>
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Extending Broadband Throughout Dawn-Euphemia Township

- **FTTH - Future-Proof Last km Solution**
  - Cost-limited 4 km buried optical fibre ring

- **Hybrid FWA Middle km Solution**
  - 5GHz for high-speed internet services
  - 3.65 GHz for better tree penetration

- **Use Existing Grain Elevators as Towers**
  - Reduced tower build costs by 80%

- **Mesh Network and Redundant Backhaul**
  - High network reliability and resiliency

CENGN Providing Middle and Last Km Access Over Open Farmland in Dawn-Euphemia Township
Broadband Project Overview

✅ **New Fibre-Optic Internet Connectivity Throughout the Village of Florence**
- High-speed Fibre-To-The Home (FTTH) will be available to all homes and businesses in the village

✅ **New Fibre-Speed Fixed Wireless Internet Connectivity in the Hamlet of Shetland**
- High-speed internet access services will be available to all homes and businesses in the hamlet

✅ **New High Speed Fixed Wireless Services for a Wide Area of the Township**
- Mix of wireless technologies, throughout the township, and FTTH only where it makes sense

✅ **New High Speed Fixed Wireless Internet Connectivity for those with Dense Tree Cover**
- Will reduce the need for some residents who currently would require a tower on their property to receive service

✅ **New 200 Foot Backhaul Telecommunications Tower**
- Will support more network meshing options in the township due to high height

✅ **New Wide Selection of Different Internet Access Plans with NO DATA CAP**
- Can select from selection of throughputs and lower cost options

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Overview of New Internet Access for Dawn-Euphemia Township

- 5 distribution “tower” sites utilized

- Two different wireless options for wide coverage:
  - Higher capacity 5 GHz radio technology
    - 5-7 km out from tower
  - Lower capacity 3.65 GHz technology
    - 7–15 km from tower
    - Better tree foliage penetration

- Fibre & Wireless for Florence

- High-Speed Wireless for Shetland

- Dual Fibre Backhaul Connections to the internet for redundancy

- Multiple Links between towers and grain elevators for high reliability

Over 1000 Residences can be reached in the Township.

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Cost & Technology Innovation

Fixed Wireless POP Extension, with FTTH loop in Village of Florence

**Significant Middle Km Cost Reduction**

- **No New Distribution Tower Builds** - 80% Cost Savings using 4 existing Grain Elevators

**Hybrid Backhaul and Distribution Fixed Wireless Technology Innovation**

- **Unlicensed 5GHz and 24GHz Backhaul Links** — high bandwidth backhaul with no annual license fees
- **Unlicensed 60 GHz Last Km Distribution** — 100/100 symmetrical, equivalent to fibre, much lower cost
- **Unlicensed 5 GHz Middle km Distribution** — 50/10 high bandwidth service, no annual license fees
- **Licensed 3.65 GHz Middle km Distribution** — Better tree penetration, longer distance, no annual license fees

Up to $600,000 Cost Saving
Multiple Installation Projects Completed in Dawn-Euphemia Township

**New Backhaul Tower**
- New 250' Tower Build - Completed Dec 2020

**Village of Florence**
- Installation of 4 km Optical Fibre Ring - Completed Mid-January 2020
- In-service End-November 2020

**Hamlet of Shetland**
- Hamlet of Shetland Access
  - Shetland Access
  - 1283 Shetland Rd, Florence, ON N0H 1R0
  - Installation of 5 GHz Network Installed
  - In-Service Aug. 15, 2020

**Rest of the Township**
- Cairo Access
  - 2705 Bempth Line, Belfield, ON N0R 1CO
  - Installation of 3.65 GHz Network Complete
  - In-Service End-November 2020

- Rutherford Access
  - 129 Dawn Mills Rd, Drumler, ON N0H 1M6
  - Innovative Use of Grain Elevators

- Newbury Station Access
  - 8647 Bempth Line, Newbury, ON N0L 1Z0
  - Installation of 60 GHz Network Installed
  - In-Service Sept. 21, 2020

- Florence Access
  - 6300 Fanister Rd, Florence, ON N0P 1R0
  - Installation of 5 GHz Network Installed
  - In-Service Aug. 15, 2020

**Innovative Use of Grain Elevators**

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Community Benefits of Project

High-speed Reliable Broadband Internet Services to Underserved Residents
- Fibre to the home access by up to 250 residents
- Fibre-like FWA service to up to 40 residents
- High-speed FWA services to additional 700 residents throughout the township

Future-proof Fibre Access for Florence Residents
- Use of fibre to the home ensures even higher speed services could be offered in the future

Range of High Bandwidth Internet Access Services
- Range of price options, and performance options

Improved Fixed Wireless Options without need for Tower on Customer Premises
- New 3.65GHz service will penetrate tree foliage much better and have longer range

No DATA CAPS!
- No monthly overage charges
- Also supports the higher bandwidth needs of agribusinesses in the township

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Overall Impact of the Project

☐ High-speed Reliable Broadband FTTH Internet Services to Underserved Residents
  ▪ Fibre to the home access by up to 300 residents

☐ High-speed Reliable Broadband FWA Internet Services to Underserved Residents
  ▪ Wireless access for up to 700 additional residents

☐ Potential Spin-Off Projects for Dawn-Euphemia Area
  ▪ Many other nearby rural areas could benefit from the design approach used for this township.

☐ 300% Business Growth for MPV wifi in the Dawn-Euphemia Area
  ▪ Vastly expanded the MPV Wifi coverage area, new backhaul opens up other nearby townships
Contacts for More Information

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THANK YOU!