

IGS 5G Access Project: Proposal to the Town of Hawkesbury

IGS Hawkesbury is currently working on a project to deploy mmWave technology in the Town of Hawkesbury. This technology is capable of ultra high-speed internet services and can also serve as a 5G platform. The cost to deploy this technology is much lower than a fibre to the home deployment and as such, pricing to the end user can be significantly lower.

Who we are:

IGS Hawkesbury has been providing internet services to Hawkesbury and the surrounding areas since 1995. As a family owned company, IGS has developed a reputation for excellence in customer service and reliability while at the same time as being on the forefront of technological advances. We are a high technology company developing new and cutting-edge internet products. Our head office is located in Hawkesbury, and we employ 14 people, mostly in technical positions. Besides Bell Canada, we own and operate the only other internet point of presence in Hawkesbury and the surrounding area. We also own and operate the fastest and most reliable rural wireless network in Prescott and Russell.

Our management group has more than 75 years of combined experience in the telecom sector. Always forward thinking, we have brought many new technologies to the area, including building the first high-speed wireless to the home network in the region. We are focused on bringing the next wave of technological advances to our region.

Our Project:

We at IGS believe that there is high demand for low cost, ultra high-speed services in Hawkesbury. We have submitted a grant application to the NRC-IRAP to help fund the project, but we also need the co-operation of the Town of Hawkesbury for this project to be successful. This project would be one of the first mmWave deployments in Canada and we are very excited to bring this technology to Hawkesbury.

This technology not only has the potential to provide low cost internet service, it also has the potential to be used as a platform for Smart City Technologies. Deploying smart city technologies is essential for municipalities to remain relevant and financially stable in the coming digital age. Some of the benefits of this technology include:

- Reduced OPEX for municipal infrastructure
- Smart City Wi-Fi
- Low-cost high-speed internet services for citizens
- Underground infrastructure mapping using IoT. Can be offered as a service to developers. Will be attractive to developers due to cost and quick turnaround time.
- Municipal infrastructure monitoring. Can be applied to sewage systems, traffic systems etc.
- Smart citizen services. Provides easy access to citizens of City and Municipal services. Improves citizen engagement and can collect information from citizens to help in the decision-making process.
- Smart Waste management. Can reduce fleet and fuel costs.
- Smart winter maintenance management. Can also reduce fleet and fuel costs.
- Real time asset management using predictive operations management.
- Smart Street Lighting

- Fleet monitoring. Can track municipal vehicles as well as develop efficient routes
- Security camera deployment. Can monitor high risk areas
- Traffic density monitoring. Can measure foot and vehicle traffic.

This project is split up into the follow phases:

Phase 1	Phase 2	Phase 3
<ul style="list-style-type: none"> • Install initial test bed of 3 sites • Network back haul construction connecting first 3 sites • Wi-Fi deployment in key area's • Testing of deployment model • Analyze benefits of 5G IoT to municipality 	<ul style="list-style-type: none"> • Use test data to design architecture of remaining 17 nodes • Deploy remaining 17 nodes • Complete network back haul construction • In conjunction with municipality, decide which 5G IoT technologies to deploy first, based on cost savings to municipality 	<ul style="list-style-type: none"> • Deploy 5G IoT (Smart City) technologies • Continue to analyze upcoming Smart City technologies and work with municipality to decide which to deploy for maximum cost savings and functionality for municipality

Phase 1: Initial Test Bed

Duration: June 2019-May 2020

Key actions:

- Build fibre backbone between Hawkesbury Town Hall and IGS office
- Construct small tower at Parc Old Mill
- Evaluate condition of tower at Hawkesbury Town Hall
 - If needed, construct new tower at Town Hall
- Install wireless backhaul between Town Hall site and Parc Old Mill site
- Install Wi-Fi hotspots at Town Hall and Parc Old Mill
- Analyze 5G IoT options that would be most beneficial to Town of Hawkesbury

Key asks from Town of Hawkesbury:

- Permission to build a small tower at Parc Old Mill
- Permission to use existing tower at Town Hall to mount mmWave node equipment
- Split cost of new tower with IGS if needed at Town Hall (Total cost for new tower is \$5000)

Key Benefits to Town of Hawkesbury provided by IGS:

- No charge 100M fibre connection to Town Hall
- No charge 25M connection to Parc Old Mill
- Free event Wi-Fi for outdoor events at Town Hall and Parc Old Mill

Phase 2: Buildout

Duration: June 2020 – May 2021

Key actions:

- Complete design of mmWave network
- Deploy remaining mmWave nodes
- Complete fibre backbone
- Decide on 5G IoT technologies to be deployed

Key asks from Town of Hawkesbury:

- Use of municipal buildings and infrastructure to mount our mmWave nodes and Smart City Technology
- Permission on a case by case basis to erect utility poles or small towers where needed
- Easements for any utility poles built.

Key Benefits to Town of Hawkesbury provided by IGS:

- No Charge 25M connection to any municipal buildings where we mount our equipment
- Free event Wi-Fi anywhere in Hawkesbury

Phase 3: Deployment of 5G IoT

Duration: June 2021 +

Key actions:

- Deploy selected 5G IoT tech
- Monitor performance level of 5G IoT
- Measure 5G IoT results against expectations
- Decide next steps (which IoT technologies to deploy next)

We are proposing a made in Hawkesbury solution to leverage 5G IoT technology for the benefit of all. The Town of Hawkesbury will benefit from cost savings, the citizens of Hawkesbury will benefit from improved services and local businesses will benefit from access to the newest technologies. We are seeking a memorandum of understanding (MOU) in regards to our implementation of phase one of this project. If the Town of Hawkesbury is satisfied with the results of phase one, we would like to put together a formal contract covering phase 2 and phase 3.

We believe that if we work together, that together we can modernize the town of Hawkesbury. We have chosen Hawkesbury as the first town to implement this new technology as our roots are in Hawkesbury. We think that with this plan, the Town of Hawkesbury has the flexibility to choose which technologies it will deploy, how it will deploy them and how it will manage them.