



***Expression of Interest in the FCC Rural Broadband Experiment
Submitted by Michwave Technologies, Inc.***

Grand Rapids, MI – March 2014

Nature of Michwave Technologies, Inc.:

Michwave Technologies, Inc. started as a family owned start-up company in 2000 with Steve, Jon and Fran Langelier as the principle owners. After 14 years, Michwave is still operated by Steve, Fran, Jon and Kelli (Jon's wife), three full-time employees, and a few part-time employees. The initial start-up was with personal money scraped together, and then with an SBA loan from Choice One Bank in Sparta, Michigan. This got us to covering many areas in Kent and Ottawa County. Over the years, the network has grown organically and also with the acquisition of four other companies, expanding coverage to even more rural areas in Greenville, Howard City, and the Ludington area.

Through hard work and conservative management, our coverage has grown to about 100 tower sites. The current network of Michwave Technologies, Inc. is a purely wireless network currently fed with two fiber providers. The tower sites are fed with wireless backhauls and rebroadcasting using license exempt frequencies. The goal of Michwave Technologies, Inc. is to continue to provide fast and reliable Internet service in under-served areas. The company strives to deliver an option for Internet that keeps customers happy and at an affordable price, and still be profitable. In all the years we have been delivering service to these counties, we are forecasting that we will have an issue keeping up with the speeds these areas are demanding and the cost of technology for this area. This is why we are seeking outside assistance to take us into the future.

Project Goal

Currently the 900MHz system is our broadly deployed system that goes through trees. The limitation with this system is that our typical customer can only get 1-2Mbps download, and 500Kbps upload base station or sector capacity totalling ~4Mbps. Even at those speeds, we are also limited in reliability due to the nature of the 900MHz frequency band. Michwave already gets many calls from existing customers asking for more speed with no affordable way to upgrade the customer. The goal of this project is to deliver truly fast speeds of up to 10-15Mbps to residents that have no better option and with reasonable prices.

Proposed Service Area:

The target market for this proposed project is residents, anchor institutions, and businesses within Kent, Ottawa, and Mason Counties that cannot get any unlimited use Internet options and/or speeds faster than 1-2Mbps download. The funding would allow Michwave to reach the rest of the potential customers in Kent, Ottawa, and Mason County. Michwave currently reaches communities that lie just outside heavily populated areas all the way out to rural areas. It also covers some areas that cable or DSL can mostly reach, but in instances, are covered by neither.

Broadband Technology to be Deployed:

The project aims to deploy new and proven wireless technology to the targeted areas using frequencies more suited to delivering 10-15Mbps and still reaching the majority of the residents. The project also aims to deploy licensed high capacity microwave links to feed each site. Newer technology is capable of delivering 100+Mbps per base station and 10-15Mbps to each subscriber, which can give the residents a more respectable Internet connection into the future. The project also aims to have fiber connections run to some of the existing tower sites from nearby sources. Michwave believes there are many factors that will require homeowners to have a fast broadband connection in the future including requirements to work-from-home for employers.

Funding Request:

Michwave is projecting the one time investment would be \$20,000,000 or less. Michwave is proposing funding to cover the infrastructure and initial labor installation expense.

Michwave Technologies Inc. appreciates the opportunity to provide this expression of interest. We truly hope this leads to further discussion with our company.

Sincerely,
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