

GREEN CHARTER TOWNSHIP

BROADBAND INTERNET OPTIONS

January 10, 2011 7:00 PM

Summary of Internet Options Available to Township Residents (Provided by Multiple Companies)

1. **Dial Up** - 56K phone modem connection with limit capacity.
2. **DSL** - Stands for "Digital Subscriber Line." It is medium for transferring data over regular phone lines and can be used to connect to the Internet. However, like a cable modem, a DSL circuit is much faster than a regular phone connection, even though the wires it uses are copper like a typical phone line. DSL has a functional limit of 18,000 feet from the telecom main switching station (Downtown Big Rapids)
3. **Cable** - Cable Internet access, is a form of broadband Internet access that uses the cable television infrastructure. Like digital subscriber line and fiber to the premises services, cable internet access provides network edge connectivity (last mile access) from the internet service provider (ISP) to an end user. It is integrated into the cable television infrastructure analogously to DSL which uses the existing telephone network. Cable TV networks and telecommunications networks are the two predominant forms of residential Internet access. Charter Communications is the local provided of Cable Television, High Speed Internet and Phone connection services.
4. **Satellite** - Satellite Internet access is Internet access provided through satellites. The service can be provided to users world-wide through Low Earth Orbit (LEO) satellites. Geostationary satellites can offer higher data speeds, but their signals can not reach some polar regions of the world. Different types of satellite systems have a wide range of different features and technical limitations, which can greatly affect their usefulness and performance in specific applications.
5. **Cell Phone** - Cell phones companies are building networks to provide various internet services through their various phone service packages. 3G and 4G are typically advertised to the consumers with various data packages and internet speeds. Signal quality vary across their national networks but allow a subscriber to be mobile.
6. **Fixed Point Wireless** - Fixed wireless refers to wireless devices or systems that are situated in fixed locations, such as an office or home, as opposed to devices that are mobile, such as cell phones and PDAs. Fixed wireless devices normally derive their electrical power from utility mains, as opposed to portable wireless devices that normally derive their power from batteries. The point-to-point signal transmissions occur through the air over a terrestrial microwave platform rather than through copper or fiber cables; therefore, fixed wireless does not require satellite feeds or local phone service. The advantages of fixed wireless include the ability to connect with users in remote areas without the need for laying new cables and the capacity for broad bandwidth that is not impeded by fiber or cable capacities.
7. **Fiber Optic** - Fiber-optic communication is a method of transmitting information from one place to another by sending pulses of light through an optical fiber. The light forms an electromagnetic carrier wave that is modulated to carry information. First developed in the 1970s, fiber-optic communication systems have revolutionized the telecommunications industry and have played a major role in the advent of the Information Age. Because of its advantages over electrical transmission, optical fibers have largely replaced copper wire communications in core networks in the developed world.

Options:

1. Township working with a local ISP (Tucker Communication) operating a TWP owned Wireless Tower system
- Operational by around June 2011.
2. CASAIR (Stanton, MI) built system over Mecosta County with Grant/Private Funding Sources
- Operational sometime over the next 24 to 36 months, if not sooner.
3. Hybrid of Tucker Communication/CASAIR operational agreement.

Tucker Communications, Inc

3.65 GHZ System *

1.5 Down/1.0 Up

Installation \$249 (1 Yr Agreement)

Monthly service 49.95

Other Service Packs Available

CASAIR:

3.65 GHZ System *

1.0 Down/256 Up

Installation \$149 (2 Yr Agreement, \$250 Early Termination Fee)

Monthly \$39.95

Other Service Packs Available

* Additional costs may be involved for individual household in connecting to the Wireless Service

What the Township Board would like to know from the potential households:

- A. Build a TWP system?
- B. Wait for CASAIR to deploy?
- C. Encourage a joint system between the two companies
- D. Don't build anything?
- E. Other suggestions

Township Residents:

When I first became your Supervisor, the question asked often was how could we get High-Speed Internet Service in parts of the Township that weren't being served very well?

That question started the quest to find out what could be done.

There are four primary venues available but each has their limitations. **First**, AT&T offered DSL service through their phone lines but with limitation of distance on them which gets service to 18 Mile Road and very few houses. **Second**, Charter Communications offers cable services along their right-of-way (Northland) foot print but Charter doesn't cover the whole township nor do they want to expand their current service area. **Third**, Cell Phone Companies not only offer carrier service for phones but also are offering Internet Services through their cell phones or air cards. The cell phone route allow mobility to the user but does have issues dependant upon geographical location that you are trying to use. **Fourth**, Satellite System allow for remote locations to connect the Internet at a faster connection speed but are on the pricey side and they too have issues of performance.

This brings us to tonight's meeting and what I have found in researching for a viable option for those of you requesting High Speed Internet Service. What I have found is Fixed Point Wireless Service as a reasonable option to connect the households lacking this service. The type of service being described tonight allows for reasonable install costs, fairly quick deployment and service costs comparable to other systems offered in the area. I know through the Spring Cleanup Card survey question, if you were interested - to call the hall. We had about 100 households respond to the that question in short order and we believe the actual number will be closer to 200 or more if surrounding households outside the township boundaries should utilize this service. 100 customers makes it feasible to construct and more makes it even more affordable and justifiable in the investment.

Is it that simple? Well, Yes and No. When you travel around the Township tomorrow, look at the hills and all the trees within our township. Depending on tower location, some of this won't be a problem, but some areas will have difficulty in reception of signal. Preliminary surveying and propagation studies indicate that at least 85% of the households should have a general line of site conditions but tree canopy may have to be addressed on a case by case basis. The remaining households may also have issues of hills, ridges and heavy forestation to overcome, but with the technology being utilized and some creative workaround methods, they too (with time) should be able to be connected to the system.

All and all there is a viable method for the Township. **Fixed Point Wireless**

Funding - There are several ways to take on this project:

- Participating household pay a share of investment cost through assessments
- Participating household pay a share of investment cost up front
- Participating household pay a share through the monthly service fees
- When investment is recaptured, these investment fees would stop being collected and monies made available to other township projects.
- Township treats this investment of the Base Tower and Radios as Utility Infrastructure, no additional cost to the residents
- Households outside the Township would be required to pay either up front infrastructure cost share or pay through the service contract arrangements.

Other issues in the background

- ▶ Why doesn't private enterprise develop this service?
 - The present economy makes this type of capital expenses difficult with banking community at present. Banks aren't loaning capital monies very easily these days.
- ▶ Local providers available limited.
- ▶ Private investors look at the project as a low return on investment.
- ▶ Local Government monies are limited in use of development.
- ▶ Federal grants are being awarded and used for the deployment of Broad Band Internet to the areas of the country being under served.

Locally, Tucker Communications has been working with the Township in the last year to develop such a system that would bring service to the under served households within our boundaries. Many hours of research has been invested and now it is time to determine the actual household participation that would use this service. The township has also determine a possible method of financing the project.

Federal Grant Award, August 4, 2010 it was announced that CASAIR of Stanton, Michigan had been awarded a 26.5 million dollar grant to expand their service area to include Mecosta County (and other surrounding counties) to their current network system. Unfortunately, the public relation portion was slow in passing the word and only recently has Green Township officials and many other County officials have been made aware of this project. This project has a time frame of up to 36 months to completion.

AT THE LAST MINUTE, I've had to bring two commercial providers together and see what can be done and what options are available to you.

We need your thoughts!
Your desires!
Your commitment!

Let's have a productive meeting!
Bob Baldwin, Supervisor