Report on Gillies Bay Internet Society network, Texada Island BC.
November, 2016

Introduction.

The central part of Texada Island where GBIS has all it's clients is 22km long by about 6km wide. To provide decent connections over such a wide area the network has been expanded the number of access antennas to 12 and it now serves just over 200 clients from 8 access point locations. The type of wireless technology used is subject to very tight restrictions on the power output of the individual distribution radios at the access points and of the client radios. These are set by government at lower levels than those that govern the operation of cell phone networks, both for voice and data [internet] communications. This increases the problems faced in reaching clients whose properties have such obstacles as hills and forests between them and our towers.

Besides serving residential clients, the network provides service for several public organizations including: BC Ambulance Service, Environment Canada Weather Radio Service, Provincial Emergency Radio Communications Service, Gillies Bay Improvement District and the Texada Island Library which includes

Key

● Gillies Bay Internet Society - Network access point locations

free public wifi. Businesses served include a motel, some rental cottages, a village store, a restaurant, a summer only food concession and a number of home based businesses offering a wide range of products and services including B & B's.

Technical aspects of the network.

In the early years of operation when the network had fewer than 50 users it shared a Telus internet feed with a capacity of 30 Mbps that originated from a point of entry located at Errington near Parksville on Vancouver Island. This had been established a year earlier in 2007 by Lasquiti Internet Access Society just to serve the small community on Lasqueti Island. However, as the number of users

GBIS - The Mount Pocahontas shed at the base of the new tower.

on both Lasqueti and Texada steadily increased GBIS decided to become an independent ISP.

In the early years funding was received from various government sources,

over $125,000 in total, and these grants made possible the startup of the network and the construction in 2010 of a new 100ft (32.5m) tower on Mount Pocahontas on Texada. Once that was operational it was possible to greatly extend the coverage area and to set up a new point of entry from a Telus fibre optic cable feed at the Sunshine Coast Health Centre south of Powell River.

At present the capacity of the bulk service from Telus at 100 Mbps is more than enough for the 200 users as most clients do not exceed the 30.0 GB per month that is included in the standard basic package. Peak demand seldom exceeds 50 percent of the bandwidth available, but there is no doubt many clients will increase their use of broadband to view more TV and video content. Currently the network is able to deliver to most of users download speeds up to about 12.0Mbps and upload speeds up to 8.0Mbps.

Finances.

With the number of customers now fairly stable at about 200 and gross revenue for 2016 expected to be over $100,000 the society is in good shape financially. Funds are being held in reserve to cover the anticipated cost of equipment replacement and upgrading. While many volunteers helped to establish the network in the early years and some continue to help in various ways there are three individuals, a network technical manager, a book keeper and a technician that are paid for their part time services. All three live within the Powell River Regional District which benefits directly or indirectly from the extra local employment created by the society.

	limit	base	tax	annual
Standard	30GiB	$ 321	$ 39	$ 360
Medium	45GiB	$ 482	$ 58	$ 540
High	75GiB	$ 804	$ 96	$ 900
Extreme	95GiB	$ 964	$ 116	$ 1,080

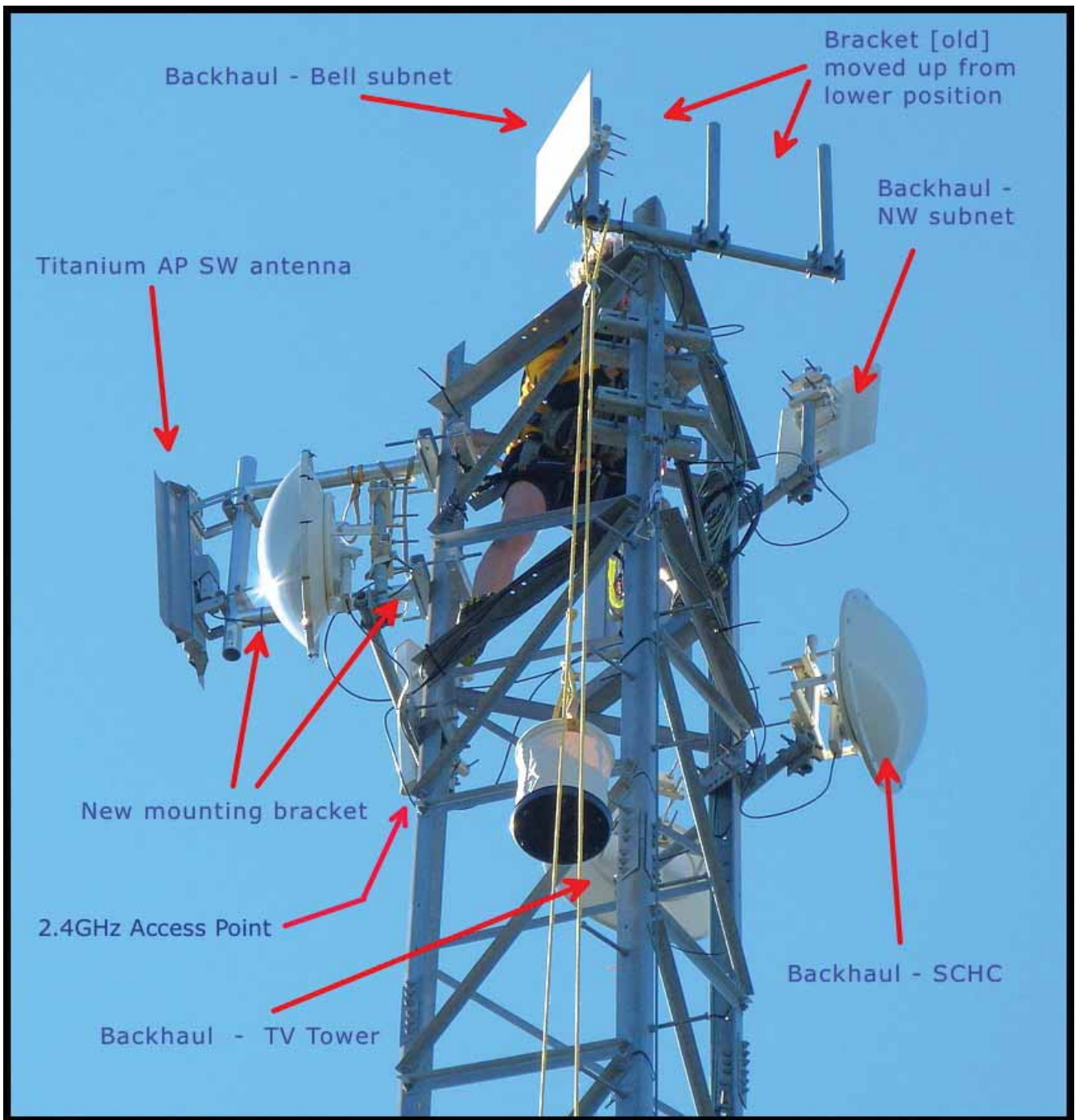Chart showing charges for each of the four user packages

From 1st December 2016 the charges for the four service plans are reduced by 10 percent and at the same time the above the limit cost will remain unchanged at $2.00 per excess GiB. These charges do compare quite favourably with other internet service providers offering connections on Texada Island and help to consolidate one of the original objectives of the society, to provide a less expensive internet service. The charge for a standard hookup is held at $150.00 including tax although the cost to the society is somewhat higher. Currently the network is able to deliver to most of the users download speeds up to about 12.0Mbps and upload speeds to 8.0Mbps.
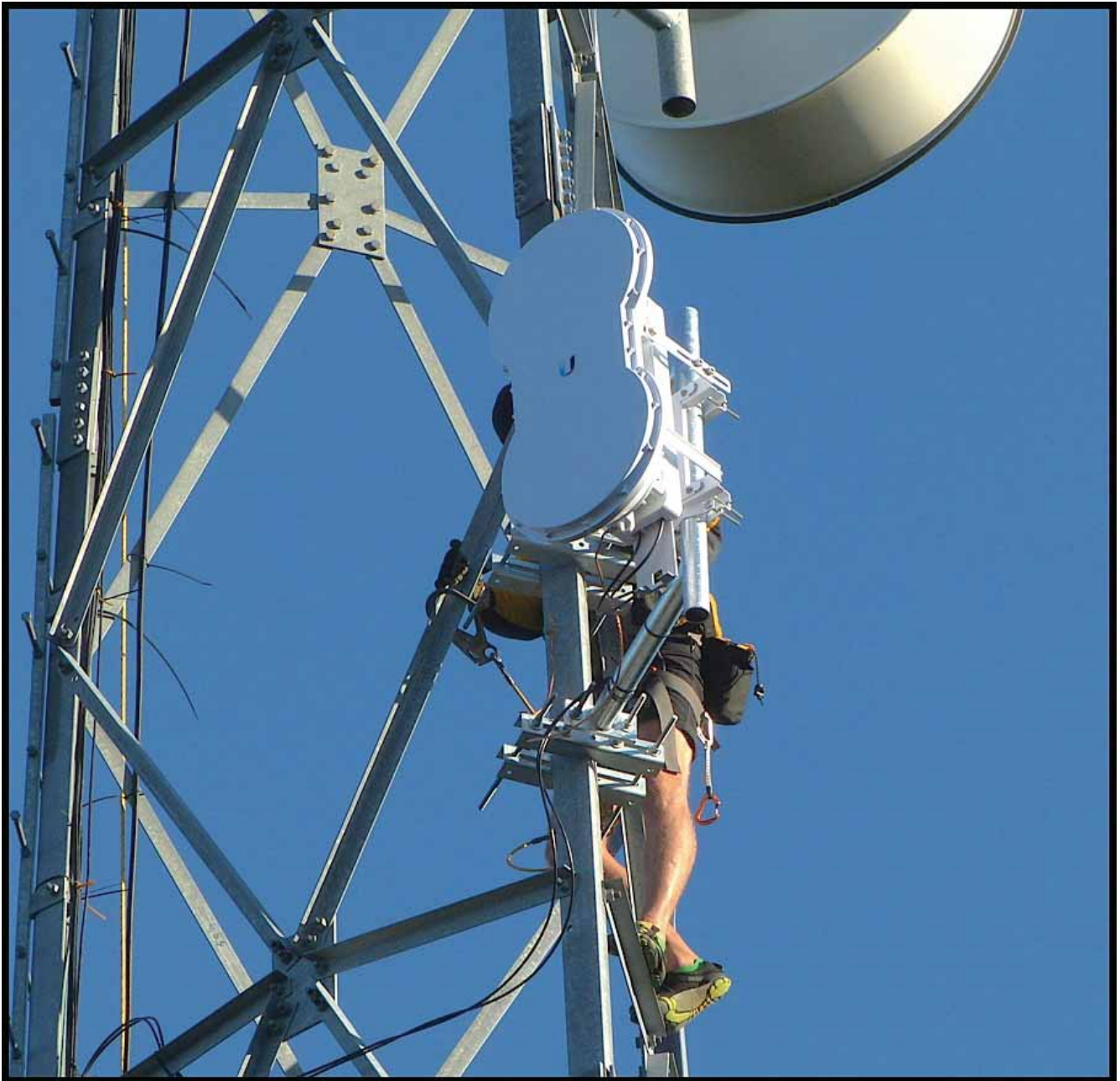
http://www.gilliesbay.ca/wireless/

http://www.gilliesbay.ca/wireless/faq.asp

http://www.gilliesbay.ca/wireless/system.asp

Additional photos on the next two pages are closeup views of some of the equipment mounted on the Mount Pocahontas tower.

Labels on image:
- Backhaul - Bell subnet
- Bracket [old] moved up from lower position
- Titanium AP SW antenna
- Backhaul - NW subnet
- New mounting bracket
- 2.4GHz Access Point
- Backhaul - TV Tower
- Backhaul - SCHC

GBIS — View of the top of the Mount Pocahontas Tower showing some network hardware.

Backhaul antennas are mainly used to link together different parts of the network including the various subnets.
Subnets serve small clusters of clients that cannot be reached in any other way.
An Access Point [AP] antenna links directly to large numbers of client internet radios.

GBIS — The Tower on Mount Pocahontas with a technician adjusting a high speed and wide bandwidth Ubiquiti AirFiber unit linking with a similar device on the mainland south of Powell River. The much larger device above it is a BC Ambulance communications link to Vancouver Island. Also mounted on the tower but not visible in these photos is an antenna used for emergency communications and maintained and operated by volunteers in a local Ham Radio group.

John Dove — Director, GBIS