

# **Hawaii's Information & Communications Lifeline: Trans-Pacific Submarine Fiber**

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# Hawaii's Proud Networking History

- The Aloha protocols, which underlie Ethernet technologies and packet networking, were developed at UH
- PACCOM at UH was the original Asia-Pacific Internet project that provisioned the first international IP connections with Japan, Australia, New Zealand, Korea...
- Oahu was once the physical hub of all trans-pacific fiber optic submarine cable systems

# Hawaii Broadband Task Force: Background & Charge

- Established by Hawaii Legislature – through Act 2 of the First Special Session of 2007
- Primary aims
  - Removing barriers to broadband access, including gaining wider access to public rights-of-way
  - Identifying opportunities for increased broadband development and adoption, including very high speed broadband services
  - Enabling the creation and development of new advanced communication technologies in Hawaii

*<http://www.hbtf.org>*

# Task Force Members

Senator Will Espero

Senator Carol Fukunaga

Senator David Ige

Representative Marcus Oshiro

Representative Gene Ward

Representative Kyle Yamashita

Gordon Bruce, Honolulu CIO

Gary Caulfield, FHB Vice Chair

David Lassner, UH CIO

Joel Matsunaga / Ken Hiraki

Hawaiian Telcom

Henk Rogers, BluePlanet Wireless

Jennifer Sabas,

Office of U.S. Senator Inouye

Nate Smith / Kiman Wong

Oceanic Time Warner

Clyde Sonobe, DCCA

Nam Vu, ShakaNet (resigned)

# Task Force Vision

Hawaii understands that advanced broadband services are an essential infrastructure for an innovation economy and a knowledge society in the 21<sup>st</sup> century. As a result of proactive policy initiatives, Hawaii residents and businesses throughout the State have access to advanced broadband services of the caliber and at the pricing available in the leading developed nations of the world.

# **HBTF Initial Finding: U.S. Lagging Other Nations**

Three main measures of a country's broadband capability are:

- Broadband penetration,
- Speed of generally available technology, and
- Price per megabit per second.

The data paints a grim picture for the United States in all areas.

*- HBTF Final Report*

# What would we do with more?

- Imagine high-definition videoconferencing enabling you to participate in office meetings so you can avoid traffic and reduce your carbon footprint.
- Imagine your mother consulting with her physician about early-onset Alzheimers, with the physician able to see confusion on her face.
- Imagine your son uploading the high-definition video he just finished editing to complete his high school capstone assignment.
- Imagine your daughter remotely operating a telescope located at the top of a mountain, while using a supercomputer to visualize the massive amounts of data being collected in real time.

*Now, imagine all this going on in your home – at once!*

# Estimated Economic Impact

A seven percentage point increase in broadband adoption could result in:

- \$92 billion through 2.4 million jobs created or saved
- \$662 million saved per year in healthcare costs
- \$6.4 billion per year in mileage savings
- \$18 million in carbon credits associated with 3.2 billion fewer lbs of CO2 emissions per year
- \$35.2 billion in value for 3.8 billion more hours saved per yr from accessing broadband at home

\$134 billion per year in total direct economic impact across the United States

**Estimate for Hawaii: \$578m per year**

*- Connected Nation, 2008*



# Task Force Recommendations

1. Establish a forwarding-looking vision that recognizes the importance of broadband as critical infrastructure for the 21<sup>st</sup> century
2. Merge disparate regulatory functions to create a single, statewide, proactive advocate for broadband in Hawaii
- 3. Become welcoming of Trans-Pacific submarine fiber projects**
4. Stimulate demand for broadband in Hawaii

# Hawaii Broadband Initiative (August 2011)



# Hawaii Broadband Initiative Goals (August 2011)

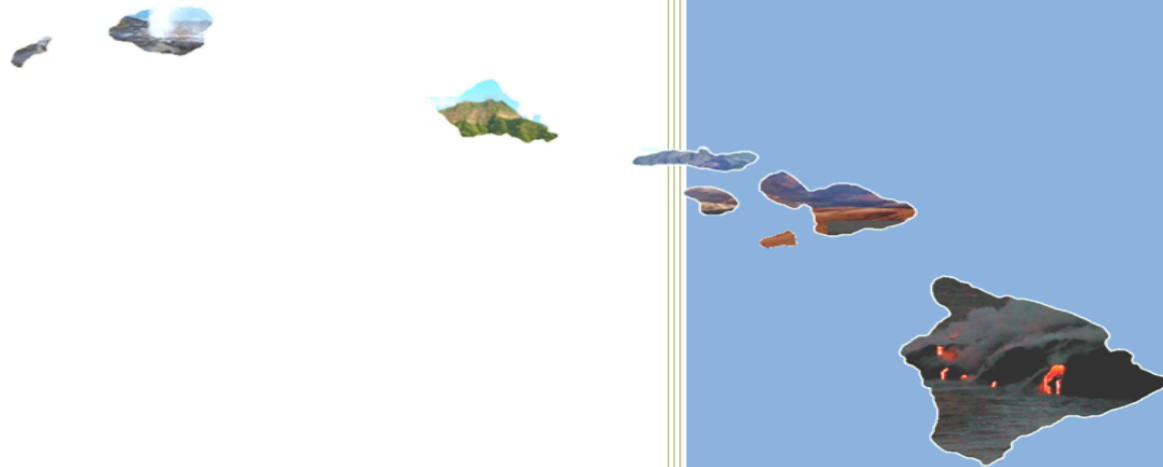
The Hawai'i Broadband Initiative has four goals:

1. Ensure ubiquitous access to world-class gigabit-per-second broadband service at affordable prices throughout Hawai'i.
2. Increase the use of ultra high-speed broadband services and applications for economic development, healthcare, education, public safety, governmental efficiency and civic engagement.
- 3. Reduce Hawai'i's barriers to global participation and ensure equitable access for all our islands, including the most remote areas of the state.**
4. Develop and implement a modern regulatory and permitting environment that supports and advances investment in broadband infrastructure and public services.

# Hawaii Broadband Strategic Plan (December 2012)



## Hawaii Broadband Strategic Plan



Department of Commerce and  
Consumer Affairs

State of Hawaii

December 2012

# **Hawaii Broadband Strategic Plan Goals (December 2012)**

## **AVAILABILITY**

Goal 1: Ensure Availability of Broadband to All Hawaii Residents at Affordable Prices

## **ADOPTION:**

## **DIGITAL LITERACY AND INTERNET USE**

Goal 2: Eliminate the Digital Divide and Promote Broadband Adoption

## **APPLICATION:**

## **BROADBAND APPLIED FOR ECONOMIC GROWTH**

Goal 3: Promote Broadband Industries and Applications for Economic Development

*[http://hawaii.gov/dcca/broadband/arra-1/  
Hawaii\\_Broadband\\_Strategic\\_Plan\\_Dec\\_2012.pdf](http://hawaii.gov/dcca/broadband/arra-1/Hawaii_Broadband_Strategic_Plan_Dec_2012.pdf)*

# Excerpts from HBTF Final Report (December 2008)

- Hawaii's "lifeline" for broadband to the rest of the world is expensive submarine fiber. While Hawaii was once the crossroads for trans-Pacific telecommunications, all of the new fiber systems built across the Pacific since 2001 have bypassed Hawaii [NOTE: True as of Dec 2008]. **The task force recommends that Hawaii aggressively promote the landing of new trans-Pacific submarine fiber in Hawaii, including a shared access cable station that reduces barriers to fiber landing in Hawaii.**

*"Hawaii has developed a reputation as a difficult place to land a new submarine fiber. With the advances in technology that permit longer fiber spans, the small size of the local Hawaii market, and many other geographic options for interconnection in Guam, Asia and the U.S., most new fiber systems will continue to bypass Hawaii unless they have a specific reason to land there."*

*John Hibbard*

*Leading Fiber Optic Project Consultant in the Asia-Pacific Region*

# ***Can We Run Out of Capacity? From October 2000!***

## **CLOGGED: Info highway jam**

### **Isle Internet traffic has hit a bottleneck**

By Rob Perez  
Star-Bulletin

If you think Hawaii's traffic jams are bad, try venturing into cyberspace. The fiber freeways between here and the mainland are filling up fast.

So many people are using the high-tech highways -- surfing the Internet, transmitting data, downloading movies, music and games -- that telecom carriers are running out of space on the undersea fiber-optic cables to route the traffic.

The crunch for high-speed bandwidth has become so pronounced that some Internet service providers cannot get any additional space now, which has prompted them to temporarily stop signing up new customers wanting the fastest Web hookups.

LavaNet Inc., for instance, recently started a wait list for customers seeking digital subscriber line service, which is used for high-speed Internet access.

LavaNet does not want to add more customers without adding more bandwidth; otherwise it fears service to existing customers could suffer.

Likewise, the online arm of Verizon Hawaii, the state's dominant phone company, is not offering DSL service to new customers until more bandwidth hits the market.

*<http://archives.starbulletin.com/2000/10/19/news/story4.html>*

# ...Closing with

"You just don't go out and lay a new cable. It takes years of planning," said Sprint's Toledo.

Ironically, Hawaii's bandwidth crunch surfaced as the state was aggressively pitching itself as an attractive place for high-tech businesses.

But a company needing big chunks of high-speed bandwidth would be hard pressed to find it today.

"This (shortage) is a big black eye" for Hawaii's high-tech image, LavaNet's Nagashima said.

Joe Blanco, Gov. Ben Cayetano's technology adviser, said the bandwidth crunch is only temporary and has not affected companies' interest in Hawaii.

**Cayetano, however, recognizes that the state needs more fiber links to the rest of the world, and has been streamlining the permitting process to lure projects, Blanco said.**

**"One can never have enough bandwidth," he said. "It's like horsepower under your hood."**

*<http://archives.starbulletin.com/2000/10/19/news/story4.html>*