Wireless Technologies as Accelerants of Digital Equity

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Community Wi-Fi

• Extend the Internet quickly
• Shared resources
• Cost competitive
• Alternative and/or supplement to many of 17,000 education cell hotspots
• Get the benefits now rather than waiting for the “perfect”
• Great need in Hawaii
• Small projects exist and more are in work
A Proposed Example
A good use of Federal Broadband Funds

Broadband – at least $160 million for Hawai‘i

- At least $100 million in funding will be used to help the state deploy and expand broadband access to more Hawai‘i families
- The Department of Hawaiian Homelands is set to receive at least $60 million to provide high-speed internet access to more Native Hawaiian families
- At least 280,000 Hawai‘i residents will be eligible for a new benefit [ACP] aimed at helping low-income families afford high-speed internet access
- Funding will also support the construction of new broadband infrastructure, including undersea cables (Schatz, 2021)
Resources can be shared

**Mesh**

**Linear**

Sources: [www.vtrural.org](http://www.vtrural.org) and [https://www.cablelabs.com/community-wi-fi-a-primer](https://www.cablelabs.com/community-wi-fi-a-primer)
Projected Hardware Costs Per Site -- $20,000: $10 million for 500 sites

- Access points, Wi-Fi, remotely manageable, enterprise grade $5,500 = $11,000
- Antenna, directional $500 = $1,000
- Mast/tower 30-foot, hurricane resistant $1,500
- Cabling and installation $3,000
- Contingency $2,000

The total is $18,500 but use $20,000 as a prudent site cost.
Operational Costs

- 1 each per site 1 Gb/1 Gb fiber or cable connections $180/month.
- $180 \times 500 = $90,000 per month or $1,080,000 per year.
- Take annual power, management, and maintenance to be $1,000,000

- Community Wi-Fi systems would band together

- Estimated monthly operating cost: $10.20/household
  -- Speed depends on loading
Community Wi-Fi Support Organization Highly Beneficial – Share expertise and costs

Primary roles

- **Administration**, Planning, Liaison and Funding
- **Community Organizing and Teaching**
- **Operations** – monitoring of in-service systems and coordinating repairs.
- Billing and administering access to the USAC Verifier to qualify new subscribers
- Construction of new sites and Maintenance of existing. Strong role in helping communities invest sweat equity.
Sources of Funding

• Potentially, and hopefully, the Affordable Connectivity Program (ACP)
• Existing path is by already approved carriers that make bulk sales
• Donations of resources by organizations in the community
• Household payments $30/month is reasonable
• If $20 of the $30 goes to capital costs, they would be recovered in three years
• Other government grants
A form of Community Wi-Fi Exists
Conclusion

• Underserved communities have a credible case to get Federal and/or State funding for community Wi-Fi systems. (Proposed as a comment on the ACP)

• Complement to the existing providers

• Plenty of work to be done: Big majority of census blocks in Hawaii are eligible for NTIA grant projects because of being unserved or underserved.

• Get social benefits quickly, not wait years

• Community activism with elected and administrative officials and local organizations are the keys to success