

# New Haven Mesh Network Initiative

Sam Krystal & Justin Cook's ILPF Hackathon Proposal

## Why Mesh Networks?

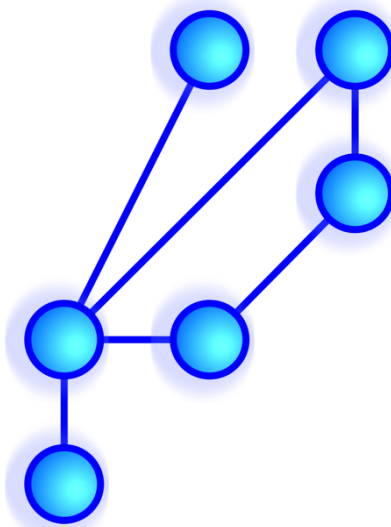
Mesh networks are secure, affordable, easy to deploy, and easy to scale. Based on the IEEE 802.11 standard known as WLAN technology (commonly known as WiFi), mesh networks function by piggybacking off of stakeholders' internet service, using small node, medium hub, and large super node routers to redistribute that service throughout other routers on the network.

## Bridging the Digital Info Gap

Stewardship programs are community-based education curriculums, designed to train citizens on best practices for network infrastructure development and maintenance. Communities with longstanding internet access issues often present with higher populations "behind the digital learning curve" requiring assistance through educational programs in order to reach a level of comfort with computers and the internet.

## The Need for Computers

According to the American Community Survey 5-Year Estimates, approximately 15 million American households, one out of eight, do not own home computers, tablets, or smartphones. So far, there are two standard approaches to facilitating access to these technologies; local refurbished used computer distribution systems, or mass purchase of new devices at bargain prices.



Eighteen Million U.S. Households do not have broadband internet of any kind.

This lack of access has a disparate impact on low income communities, and communities of color. Lack of access to internet affects household's employment opportunities, access to education, and contact with healthcare providers - particularly troubling during the Covid-19 pandemic. Municipal internet provision has proven to be more cost effective than private sector provisions, and we believe mesh networks are the optimal hardware to distribute municipal internet service.

**Our solution to bridging the digital divide can be broken down into three programs:**

1. The implementation of municipal wireless mesh networks, an affordable, community-based infrastructure for internet service provision
2. The development of municipal digital literacy and network stewardship educational programs
3. The engagement of local stakeholders to promote easy and affordable access to laptop computers

We propose a pilot program of our methodology in New Haven, Connecticut. 28% of New Haven residents are without Broadband access. We believe that through strategic partnerships with local stakeholders, and a revised approach to the Federal Communication Commission's E-Rate internet service program, the digital divide in this community will be bridged by establishing a mesh network within the city, using existing networks as a hub to expand to low-income communities.