

Community SecondNets: Preliminary Final Report

Schlow Centre Region Library, State College, PA

We had little anticipation that our goal of being better suited for emergency response in our community would be tested so quickly, and so thoroughly with the arrival of the Covid-19 pandemic. Upon its arrival, we had to refocus our efforts exclusively on simultaneously meeting emerging needs within our community, and breakdown of the sense behind the original idea of citizens congregating in predefined shelters for access. What follows is a report on activities before covid, and a summary of our response to the pandemic, and the outcomes that we can glean from it 9 months into the emergency.

Early Successes

The Office of Commonwealth Libraries were essential to the project, providing 3 Adaptrum base stations and 9 TVWS clients for the project. They also supported us in navigating the pitfalls surrounding federal Erate rules and extending library connectivity beyond our walls.



Through partnership with Penn State University, we hired an Information Science and Technology intern Phil Collins early in the project. Phil work was to develop our equipment list for the prototype, keeping up with firmware and network management software, and surveying topography for quality site candidates. Phill even helped us establish our prototype of *Bibliothèques Sans Frontières's* OLIP offline internet platform, which we intend to continue improving and preparing for use in our community. Penn

State also provided essential expertise in solar and antenna design, which was cut short with the pandemic.

Our network of community partners were instrumental in supporting the efforts the project. The Centre Region Parks Authority provided locations and expertise on park usage, the Centre Region Emergency Management office provided advice and support to identify good locations for emergency deployment, and a renewed commitment to the concept of increased public access in light of the emerging pandemic. The State College Boro provided frequent high-point access, free fiber backhaul from our base location to the library, and occasional access to bucket trucks, and operators for testing.



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A lasting result of the project is the strength of partnership between these key agencies. The library is now both seen as a leader in the state on new network initiatives, and placed at the center of community conversations surrounding access and connectivity, and without this project, that would not have been possible. Covid has only increased the need for these efforts to continue, and the library is well positioned to advocate for equal access for all our citizens.

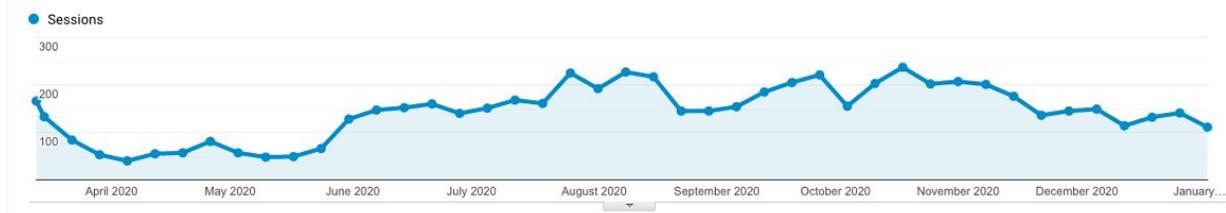
Redefining Success during Crisis



By the time the pandemic emerged, we largely only had our prototype of the kit to purchase and build. Some equipment had already been purchased, but none of the solar hardware. Plans were in the early stage to test new PSU antenna designs to improve range of the now aging TVWS equipment. Library IT staff suddenly had a great deal of change to manage, and less time for non-emergency projects.

Priorities immediately shifted to safe, isolated internet access. The library responded quickly by providing basic access in our parking lot--we were among the first to do so, and our sign had a brief moment of virality in the library world. But access was still quite limited and weak. Parks at the time were closed to the public, hindering access to existing TVWS infrastructure.

Gigabit Libraries gave permission for the library to invest remaining funds in strengthening WiFi signal at our downtown location. 5 high-availability, high-bandwidth Ubiquiti access points were procured and installed around the building. Examining our statistics, use is down considerably from pre-covid times, but the vital infrastructure the grant provided has enabled us to server over 200 sessions per week since getting the equipment installed.



A silver lining of this new infrastructure is that the library is now working with downtown partners to expand the signal further (and bring more institutions into the fold of our “mission.”). We’ve added 3Dots, a local innovation hub and community arts space, and are talking with leaders hoping to resurrect plans to turn one of our busiest business corridors into a pedestrian mall with WiFi throughout the summers.

Success?

A lot of good has come from the project, but few of the initially desired outcomes. More people are using library internet than would have. Community partnerships and will for connectivity is stronger than ever. The need for flexible internet solutions for a community/nation in crisis has never been clearer. We have a new offline internet application suite in OLIP as a new resource against future outages, we have the attention of our state library in supporting community connectivity. Sadly, we do not have a working off-grid prototype of a TVWS network that can easily be deployed to emergency shelters in our area--but I remain confident the desire for that is stronger than ever, and we will eventually see our efforts bear fruit in the Centre Region.