

Addendum

Connecting Vulnerable Populations

As part of this report, we supplied Bucksport with a 4-part Digital Inclusion report recommending Waterfront HotSpots and employer Digital Literacy training for the tourism industry. However, it was pointed out that focusing Digital Inclusion efforts on older adults coping with chronic illness and adults living with a disability were important to meeting the Broadband Connectivity goals of the BB Committee and the town and to ensure that a real Digital Divide was not exasperated, leaving these communities of people farther and farther behind.

Two goals emerged:

- Better connectivity to help support emerging telemedicine/telehealth technology
- Strategies that allow seniors/disabled populations to age in place

Part of the overall planning process was to articulate how better connectivity might work, the cost of these types of investments and if that better connectivity could create a better quality of life for the individuals who lived in this type of housing. Two supporting documents for this work point out the need for better internet connectivity:

Maine State Ageing Plan- Page 24

*In 2013 Maine was awarded the Balancing Incentive Payment Program (BIPP) grant. BIPP provided financial incentives to States to increase access to non-institutional Long-Term Services and Supports (LTSS). BIPP funds were used to support Maine to enhance its No Wrong Door System. In 2015, OADS collaborated with Maine 211 to launch its LTSS prescreening tool. This tool guides a user through service questions, ultimately providing a directory of resources based on their responses. In addition, Maine 211, ADRCs and OADS all revised their websites for easier navigation. This empowers aging and disabled Mainers to make informed choices. **A challenge when relying on web-based services and information is that Maine lacks complete broadband coverage statewide, particularly in rural communities. This impacts the ability of citizens to access services in some locations. Many services are web based and without broadband coverage individuals in rural or isolated areas are unable to access services.***

Maine Broadband Report- pages 24-25

Use in-home technologies to reduce the proportion of elderly on MaineCare receiving long-term care in institutions from 65% to 40% by 2015, and to 20% by 2020. This will allow seniors to stay home longer – which is what they want – and at the same time save Maine taxpayers over \$100 million in 2015, and over \$250 million annually in 2020.

The average cost of a nursing home bed is about \$90,000 each year. And few seniors prefer living in an institution.

Telemedicine has been adopted by many providers here in Maine and around the country to improve care and save money. Dr. Chip Teel of Damariscotta developed an approach that takes telemedicine a step further, using simple broadband communication technologies to help elderly stay in their homes for about \$5,000 a year by allowing them (and their children) to use simple off-the-shelf technology like cameras and Skype for 24-hour communication. But it's not all technology. Home visits, volunteering, transportation help, and neighbor check-ins are also essential to creating a high quality of life to participants in the program.

In addition, the Center for Ageing at the University of Maine Orono (UMO) is coordinating programs across its campus that are addressing the needs of the disabled and elderly. The Center is an important resource that might support the work of the Committee as it addresses these needs.

A community effort of helping seniors and the disabled access on-line services and support has already begun through RSU 25's Adult Education Program. The focus here is to support four apartment complexes; Bucksport Square, Webelle, Knoxview and Garden Commons that have been identified as having a high concentration of seniors coping with chronic illness and adults with disabilities. The RSU Superintendent has directed the adult education program to develop and implement Digital Literacy classes and programming that can assist these populations in learning to better access and better understand how to leverage technology to improve their quality of life.

So, the building blocks of a successful project are being put in place and what is needed is equipment and cost recommendations for Wi-Fi HotSpots in each of these apartment complexes, focused on the senior and disabled apartments.

Project Recommendations:

A low-cost solution might be found if any of these apartment complexes have two things. An existing Broadband provider that might partner with you to provide a low cost or reduced rate monthly internet connection and a common area or location where individuals might be able to access the internet on site, but at a dedicated space. Having a connection in a common room, that would allow a wireless router to be installed would provide an area of "free" coverage to tenants of the apartment complex. This is a similar solution to how most homeowners handle the internet connection in their home or business. Buying a good router for approximately \$200 should be able to broadcast a strong wireless signal in a particular area, if the internet connection can be brought to that area.

The owner of the apartment complexes might support the new connection as a way of being responsive to the needs of its occupants.

Estimated cost of installing one interior HotSpot:

Router:	\$200-\$250
Ethernet cable installation/ electrician	\$1000
Cost of monthly internet fee	\$59.99-\$99.99

If this is a preferred approach, it likely would require some additional research with complying with HIPPA regulations around privacy and secure networks to allow users to access on-line medical resources. If the Committee is interested in installing a more comprehensive, apartment solution to each renter, then the costs of that system is described below. Interior HotSpots are built differently than the outdoor HotSpots we have suggested. These HotSpots broadcast in multiple frequencies and can penetrate interior walls (depending on the density of a wall), they also come in mountable solutions that look similar to a smoke detector or in-wall mounts that are designed to replace an electrical outlet.

The Ubiquiti Unifi line of products includes several models with various capabilities and price points in both the Access Points themselves, and the switches that interconnect them. Above is a model comparison of the UAP-AC Line (non-HD).

As you think about a project for any or all of these locations there are several choices that would need to be made.

Model Comparison Chart



	UAP-AC-IW	UAP-AC-IW-PRO	UAP-AC-LITE	UAP-AC-LR	UAP-AC-PRO	UAP-AC-EDU
Environment	Indoor	Indoor	Indoor	Indoor	Indoor/Outdoor	Indoor
Simultaneous Dual-Band	✓	✓	✓	✓	✓	✓
2.4 GHz Radio Rate	300 Mbps	450 Mbps	300 Mbps	450 Mbps	450 Mbps	450 Mbps
2.4 GHz MIMO	2x2	3x3	2x2	3x3	3x3	3x3
5 GHz Radio Rate	867 Mbps	1300 Mbps	867 Mbps	867 Mbps	1300 Mbps	1300 Mbps
5 GHz MIMO	2x2	3x3	2x2	2x2	3x3	3x3
Secondary Ethernet Port	✓ (2 Additional Ports)	✓ (2 Additional Ports)			✓	✓
Loudspeaker						✓
PoE Mode	802.3at PoE+	802.3at PoE+	802.3af/A PoE 24V Passive PoE	802.3af/A PoE 24V Passive PoE	802.3af PoE 802.3at PoE+	802.3at PoE+
Ceiling Mount			✓	✓	✓	✓
Wall Mount	✓	✓	✓	✓	✓	✓
Wireless Uplink	✓	✓	✓	✓	✓	✓
DFS Certification	✓	✓	✓	✓	✓	✓

This proposal would be to wire the whole complex of apartments with wireless internet access through a system of broadcast units throughout. This solution requires more comprehensive engineering and planning and is similar to something you would find in a hotel or residential living situation. This system would allow tenants the ability to access the internet in their apartment and in any/all common areas. Axiom is working with a partner right now to install a wireless system in a retirement and assisted living facility in Camden (one large building, 3 floors). In this case, we have provided three cost scenarios to them ranging in price for three floors of coverage for:

Low Cost Entry Units:	\$16,000
Middle Solution:	\$25,000
High End:	\$55,000

Each of these has a step up in features and operability, but essentially bringing wireless connectivity into each apartment in the complex. These round numbers include a central control unit and 60-70 individual units that would be placed strategically to support Wi-Fi connectivity in tenant apartments.

To these costs you can add labor (estimated at \$3000-\$5000) to install the system and the cost of an electrician to run electrical and Ethernet to each HotSpot location (estimated at \$3000-\$5000).

All of these costs are based on our experience, but each facility is different and the number of apartments you would need to serve is an important cost factor as well as complications in a multi-story building. This pricing just gives you a general idea of what a project like this would cost, with a number of factors at each location that would only be resolved with on-site visits.

The recurring costs would also be a consideration, increasing the bandwidth to feed the system, might cost \$100s of dollars a month, depending on the demand on the system, once it is in place and a maintenance agreement would also be something to consider to keep the operation of the system in top shape, although apartment complexes typically have a property manager that can help with maintenance and break/fix scenarios.

Sponsorship

You have a willing key partner with adult education, through the leadership of your Superintendent, and you should consider creating partnerships with Eastern Maine Medical and UMO to potentially create a pilot project that could attract funding. Axiom has found success with exterior HotSpot installations being sponsored in a number of ways, and perhaps sponsorships would be a way to defer some or all of the costs of interior HotSpots, or the costs of a more comprehensive solution. Below are the ways a few towns have paid for the HotSpots in their community:

- Directly from town budget- (South Portland)
- Sponsorship from local business or bank (Machias, Eastport, Biddeford)
- Local economic development entity (Greenville)
- Individual donor (Millinocket)

And we assume that sponsors might be found if this project was pitched correctly to describe the lack of internet affordability and access that would be addressed through such a project. This type of project would require the support of the private owner of each of the apartment complexes, and it's unclear if private sponsorships could be secured for such a project. Axiom would be happy to discuss all options to help move a project forward.

Other issues

There are several other barriers to internet access that are especially acute in low-income, vulnerable populations, including cost of internet service itself and access to computers. These issues are described in the Digital Inclusion portion of this report for your review.