City of Madison
Information Technology

Digital Divide Pilot Program
Lessons Learned

September 26, 2018

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1 Executive Summary

The ~~report~~ document is being presented to the City of Madison Digital Technology Committee in September 2018. It was prepared by staff in the Information Technology Department.

The Digital Technology Committee (DTC) was formed and began meeting in February of ~~2104~~ 2014 to address an approach to provide internet service to under-served residents in challenged neighborhoods. The committee discussed multiple facets of this issue, invited input from the public, UW Madison, Madison Metropolitan School District, city staff and other parties. A pilot program, named "Connecting Madison", was developed to assess various aspects of bridging the digital divide. In ~~In~~ October of 2015 Restech Services, LLC of Madison was awarded a 2-year contract to provide low cost services to four areas of the City: Allied, Brentwood, Darbo, and Kennedy Heights. Partnerships were also formed with Cascade Asset Management and DaneNet to provide devices, educational services and assistance.

There were many challenges that led to a low adoption rate including outreach, gaining access, suitability of facilities, and the entry of service providers. While there was disappointment about the number of residents served, the pilot program provided valuable lessons.

2 Project History

The Digital Technology Committee (DTC) was formed and began meeting in February of 2104 to address an approach to provide internet service to under-served residents in challenged neighborhoods. The committee discussed multiple facets of this issue, invited input from the public, UW Madison, Madison Metropolitan School District, city staff and other parties. Based on available funds, the committee looked to provide service in four areas of the City using the following criteria:

- Multiple dwelling unit buildings for increased housing density.
- Areas supported by existing Neighborhood Resource Teams.
- Proximity to existing fiber optic cable managed by the Metropolitan Unified Fiber Network (MUFN) consortium, of which the City participates.
- Geographic diversity – not being concentrated in one area of the City.

After several meetings with public input and using the criteria outlined, the four pilot areas chosen were:

- Allied Drive
- Brentwood
- Darbo-Worthington
- Kennedy Height

The pilot program, named "Connecting Madison", was developed to assess various aspects of bridging the digital divide. The committee solicited industry input during the summer of 2015 by issuing a Request for Information (RFI) to potential vendors in order to obtain information on potential approaches and technologies. As a result of the RFI, a full Request for Proposal (RFP) # 8416-0-2015-BP was issued, soliciting proposals for a vendor to build a network to be owned by the City and operate the network, resulting in low-cost internet services to the pilot sites identified in the RFP.

While wireless solutions were expected, the RFP was written to allow both wireless and fiber-based solutions. The City received 3 proposals (2 wireless and one fiber to the premises) and an evaluation panel including City IT staff, UW IT staff, and a member of DANEnet staff evaluated and scored each proposal based on scoring and rating procedures designed in consultation with City Purchasing.

In October of 2015 Restech Services, LLC of Madison was awarded a 2-year contract to provide their proposed a fiber-to-the premises model with the following details:

- $9.99 / month fee for internet for residential subscribers with unlimited data.
- Fully duplexed connectivity (10 Mbps upload and 10 Mbps download) for a total of 20 Mbps total bandwidth.
- The ability to provide a low-cost IP-based television solution and IP-based telephone services over the same wire
- A call center providing 24-hour support and network monitoring.
- Infrastructure maintenance.

$511,929.00 was allocated to build a fiber network for all four pilot neighborhood areas identified in the RFP, using Gigabit-capable Passive Optical Network (GPON) technology on fiber optic cable for each multi-dwelling unit buildings and Optical Network Terminal (ONT) devices to connect to single-family residences and some duplexes.

Further partnerships were established with Cascade Asset Management of Madison to provide low-cost computers to residents in the pilot areas, and with DaneNet to provide Digital Literacy Workshops, Device Fix-it Clinics, establish functional computer labs, and help with refurbishing computing devices.

3 Project results.

The partnership with Cascade Asset Management was very successful. Through their efforts the project provided 410 refurbished devices complete with Windows 10 and ~~the Microsoft Office~~an office suite to residents that otherwise might not have been able to obtain them. Devices were also donated to the initiative by CUNA Mutual Insurance, American Family Insurance, and Old National Bank.

DaneNet's partnership was likewise successful, providing services as follows:

- 12 Digital Literacy workshops to approximately 96 people. Three workshops were taught in Hmong.
- Three Device Fix-it clinics. 43 people brought 56 devices, of those 8 devices were recycled, 32 fixed or improved, and the remaining needed additional hardware or software to be made operable.
- 20 hours spent cleaning, reimaging, and fixing the Kennedy Heights and the Boys and Girls Club computer labs.

Rights-of-Entry (ROE) agreements were a challenge. In order to provide the service to residents, rights-of-entry needed to be granted by building owners to allow ResTech to connect them to the City's fiber network. Once a building was connected, then ResTech could begin providing services to subscribers within a building. The results by program area were:

Area	# Buildings	# Dwelling Units	# ROE	# Subscribers
Allied	77	517	38	6
Brentwood	55	328	27	0
Darbo	21	134	21	11
Kennedy Heights	8	104	0	0
Totals	*161*	*1,083*	*86*	*17*

Initially there were 19 subscribers, but two were removed for non-payment.

It is worth noting that at the time of cancellation of the ResTech contract, about 60 more people had pre-ordered services across Allied, Brentwood, and Darbo and were ready to join.

4 Challenges

Gaining rights-of-entry was the major challenge and proved to be an obstacle. It is possible that property owners may not have understood what agreeing to the service would provide their residents, and themselves as property owners. This was further exacerbated because some property owners had perceived legal concerns over exclusivity agreements they had with other service providers such as Charter. Although Charter Communications tried to indicate to property owners they could proceed with working with ResTech, some property owners' legal counsel disagreed, or so we were told.

ResTech also discovered some buildings did not have suitable internal wiring to support broadband communications. This caused further delays while we worked with building owners to upgrade the infrastructure of their individual units.

In spite of outreach and marketing efforts, it was felt that potential subscribers were not well informed of the opportunities that Connecting Madison would provide to them. We also found potential subscribers were not positioned to take advantage of the offering due to a lack of equipment and/or training, although we attempted to mitigate this through our partnerships with Cascade Asset Management and DaneNet.

Not providing wireless services within a residence was another challenge. Without that, devices would have to physically connect. This limited the number of devices in a residence that could connect, and limited mobility which probably impacted subscription numbers.

Delays in obtaining needed infrastructure hardware (switches, routers, etc.) for Restech to install and configure were also encountered. As the project moved forward, we found there were insufficient controls in contract language that could have addressed some of these issues.

DTC's RFP was released in June of 2015. It is interesting to note that major service providers such as ~~Spectrum and AT&T~~AT&T and Spectrum started providing low cost services of their own in ~~July of 2015~~2016 and 2017 respectively. Although the private providers had constraints on their services, it created competition where none had previously existed.

The last challenge occurred in January 2018 when the City was forced to cancel the contract with ResTech. Following that a new RFP was released to procure a new vendor to continue providing services for the existing and potential subscribers. The City received no responses.

5 Lessons learned

There are several areas of improvement that were readily identified, should the City decided to attempt another project to bridge the Digital Divide.

1. Establish a communications and marketing budget and plan at the outset of the project.
   As part of this:
   - Identify a responsible party to oversee it.
   - Hold community meetings with property owners and residents to explain the program in person, answer questions directly, and dispel rumors and misstatement.
   - Provide clearly understood materials and website references for people to learn and review the program. This should be available to coincide with community meetings.
   - Use the City's Neighborhood Resource Teams (NRT) to assist with outreach efforts and make those connections in the community.
   - Partner with the City's Community Development division to assist with outreach and support.
   - Require the ISP partner to have a marketing plan and budget that will be able to penetrate targeted neighborhoods.

2. Perform a neighborhood analysis.
   Determine if a neighborhood is prepared to take advantage of broadband offerings, and identify any challenges a particular area might present. Use connections available through the NRT's and Community Development division to facilitate gathering data.
   - Survey property owners on their willingness to allow right-of-entry.
   - Inspect buildings for suitability to support broadband.
   - Survey residents' interest, and abilities to utilize broadband.
   - Consider what WiFi options are available, including providing wireless equipment.

   After the data is gathered, a determination needs to be made about the feasibility of moving forward in a particular area.

3. Develop a plan for implementation.
   Once a neighborhood has been identified as a candidate for services, using data gathered in the analysis, determine costs and timelines. At a minimum, consider:
   - Cost, if needed, of wiring buildings.
   - Cost of any wifi equipment required.
   - Infrastructure costs for the provider in connecting to fiber.
   - Allow time for working with property owners on securing rights-of-entry.
   - Allow for time for the building to be wired, if necessary.
   - Allow for time needed to procure required equipment and devices.
   - Plan with Cascade for timely delivery of end user devices.
   - Plan with DaneNet for timely training on use of devices.
   - Do risk analysis with the City's Neighborhood Resource Teams (NRT) and the City's Community Development division and other partners.
   - Plan with the service provider on their availability to connect and provide services.

The implementation plan timeline must be developed with input from all stakeholders to minimize delays and ensure project momentum is sustained.

4. Develop tighter controls in contracts with service providers.
   This includes developing clearly understood milestones and timelines. Well-defined deliverables must be identified within each milestone, and the payment schedule must be tied to the deliverables. A defined change process needs to be determined, as well as clear language on terminating the contract should that become a necessity. Expectations of the service providers need to be established which includes, but is not limited to:
   - A communications and outreach plan.
   - Provisioning the equipment.
   - Installing and connecting the equipment.
   - Connecting buildings and residents.
   - Providing 24/7 support to customers.
   - Customer billing and collections.

   The City Attorney and Risk Management will be consulted to address liability, intellectual property, indemnification, change orders, payments, and termination amongst other legal terms and conditions.

5. Lastly, regular check-ins should be established with the major stakeholders to assess the progress of any new initiative, and take appropriate measures to modify processes based on continuous learning, as conditions will undoubtedly change over time.

6 Closing

While the project faced many challenges, it is important to note the purpose of doing this as a pilot project was to discover what those may be, and what could be learned from undertaking something of this nature. There was also not a model from other cities to follow for a project of this nature.

While our partnerships with Cascade Asset Management and DaneNet were successful, there was disappointment about the number of residents served. In the end, the pilot program provided valuable lessons.