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Appendix B – Best Practices for Pilot Deployment in Underserved Areas

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RE: Best Practices for Pilot Deployment in Underserved Areas Based on Experience in
Champaign-Urbana, Illinois

As fiber-to-the-premises (FTTP) deployment becomes increasingly popular among municipalities nationwide, some potential challenges and pitfalls are immediately evident, while others are less obvious. For those few communities that have deployed fiber optic networks in underserved areas, the complexities and challenges are even greater. Although many projects are still in stages too early to glean significant useful data, valuable information is beginning to emerge from communities that have been operating FTTP networks for a few years.

This memorandum summarizes some of the best practices that have emerged as a result of the Broadband Technology Opportunities Program (BTOP) funded Urbana-Champaign Big Broadband (UC2B) network, a consortium between the cities of Urbana and Champaign, and the University of Illinois.

Maintain a Clear Vision of the Project's Objectives

The City of Madison's Information Technology (IT) department has allocated funds to support construction of an FTTP pilot project to four underserved neighborhoods in the City. The City will take ownership of the network at the end of the pilot period, which is expected to be two years. For purposes of the pilot, "underserved" means neighborhoods lacking high-speed Internet connectivity options, or having a single provider with pricing beyond what most households can afford. The pilot areas have been defined based on criteria that coincide with what the City's Neighborhood Resource Teams consider as areas of need.

The project is in its infancy, and the vision and goals at this point are clear and agreed-upon. As a project like this evolves, the goals may organically shift and be slightly redefined, depending on what makes sense as the project unfolds in the real world. This is not unusual, and the City will want to remain as adaptable as possible, and be prepared to adjust stakeholder expectations accordingly. However, although the project's objectives should remain flexible to accommodate

unanticipated circumstances and scenarios, it is important to be careful not to allow competing agendas to derail progress. This is often a sensitive topic, and it can be particularly challenging to balance political desires with practical needs.

It is important to get public input on a project where public funds are being used to provide a service to the community, and we encourage the City to continue engaging the public throughout the life of the pilot. However, to the extent that it is possible, the City will want to avoid allowing the project to be micro-managed through public input processes, or by other stakeholders. It is a delicate balance to ensure that everyone with an interest in a project like this is heard, while also keeping the project on track to serve its overarching purpose.

Build a Robust Contract with ResTech

To help maintain the project's vision, we encourage the City to enact pragmatic management, including managerial staff who can quickly make real-time decisions to the greatest extent possible within the City's political framework. This can be one of the greatest challenge areas that differentiates the public sector from private industry—an inability to nimbly make time-sensitive operational decisions. Being unable to make decisions quickly can create a negative public perception for the project, and can have unfortunate consequences for a project that directly serves community members.

Through a request for proposal (RFP) process, the City has chosen local private provider ResTech to build and operate the network, and to deliver retail service for the duration of the project. This separation makes good business sense, and will likely strengthen the pilot by putting a business that is already accustomed to providing for-choice services at the helm of the project, with the City behind the scenes. While the City has too much at stake to take a “hands-off” approach, we believe it is wise to build mechanisms into the contract with ResTech to enable the private provider to make most operational decisions unilaterally, based on explicit expectations put in place by the City.¹

Home installation is an extremely important part of the customer experience and the City is wise to ensure that ResTech carries this out to industry standards. A negative interaction, damage to the home, shoddy work, or poorly-located equipment will all sour customers' feelings about the project. The City is likely to receive criticism for this, even though it will not be directly performing the work. Poor work and lax adherence to installation guidelines will also prove to be a major source of pain as the network becomes operational because it can cause performance problems for customers. Further, even perceived shortcomings can negatively impact the public's perception of the City and its contractor (e.g., if a wireless router is placed somewhere in the

¹ Although the guidance here can help inform the City's contract with ResTech, CTC cannot provide legal advice or counsel.

home that does not provide optimal signal strength throughout the home, the customer may believe that the service is “bad”).

Given that ResTech won the RFP process, it likely has the skill set, staff, and resources to capably execute the tasks involved with customer installation and ongoing customer service. Still, we encourage the City to be engaged to the fullest extent possible and to take as much ownership of the customer experience as it can, through appointing one or more City staff as key points of contact to foster continual communication with ResTech.

Further, the contract with ResTech may need to include robust provisions that outline in detail the City’s expectations for construction and customer service. For example, we encourage the City to build into its contract:²

- Requirements for right-of-way (ROW) restoration in accordance with the City’s standard for other projects, and potentially beyond—again, customer perception is powerful on a project of this nature
- Physical and customer service benchmarks for the installation process (e.g., a well-executed service installation that includes technicians cleaning up after themselves and providing exceptional face-to-face customer communication)
- Expectations for ongoing customer service interactions (e.g., agreeing on days and times a call center will be open, and the extent to which customer service agents will aid customers)
- Detailed criteria for ResTech’s reporting requirements to the City (e.g., customer acquisition information, customer churn, and billing status data)
- Agreements about fiber repair—completing repairs in a timely fashion is crucial to keeping the network functional and creating a positive customer experience³

In regard to policy decisions, an open line of communication between key City personnel and ResTech staff is crucial, and will help keep the pilot’s vision in focus while not hindering its progress. Some of the City’s policy requirements for pilot customers may differ from ResTech’s standard operations, and the City may want to review a standard ResTech customer agreement to determine whether it adheres to the City’s expectations for pilot customers. There may be

² This list is not exhaustive, and there is a balance between negotiating in good faith and including important contract provisions to protect the City’s interests.

³ The City may be performing this function, and it may be a nonissue because of the City’s sophisticated network. As City staff likely knows, regardless of how fiber was damaged or who may technically be responsible for paying for its repair, a network owner must fix damaged fiber quickly to ensure the least disruption for customers. This likely will require the City to maintain backup construction material and to keep a reserve fund on hand to cover labor costs, if there are any. In Champaign-Urbana, fiber repair was one of the more prominent areas of difficulty with the network, and disagreements over process and policy had an impact on the customer experience. This is one of many reasons we encourage the City to shield the pilot’s operations from policy-level discussion.

times when policies need to change based on direction from the Common Council and other City leadership. However, as we noted, it is important to appoint competent management personnel at the City level to work closely with ResTech to anticipate and balance customer needs and political desires.

Engage a Public Relations Specialist to Develop Clear Messaging

A project that delivers a service to a portion of the community should have clear messaging, starting early on. It is important for the community to understand exactly what this project entails, and what the service will *actually* provide. It is critical for the City to be crystal clear in its communications with the public and avoid making promises that it or its contractor cannot keep.

For example, broadband may enable community members to have greater access to online job applications that previously were unavailable to them because they had no Internet access in their homes. This is not, however, tantamount to “job creation,” and the City must exercise caution in touting broadband as being more powerful than it actually is. Certainly, access to broadband opens doors for citizens who were previously unable to take advantage of online education, job applications, training, and the endless information available on the Internet—but it is a *tool*, and how it is used is ultimately up to the consumer. We discuss below the training and education that may mitigate some of the challenges inherent in serving a previously underserved population with a new, ultra-high-speed service.

We encourage the City to engage a seasoned public relations specialist to craft messaging about the pilot. Talented public relations specialists can even take existing messaging and creatively adjust areas of ambiguity to dispel existing misinformation that may be floating around. Even though the City has experience communicating with the public (e.g., regarding typical municipal issues like road closures and yard waste pickup dates), hiring a public relations firm or an individual who specializes in creatively developing messaging will be money well spent.

The City is likely aware that even the best-executed projects receive criticism at one time or another, either directly from the public or from local media outlets—or from some combination. The very nature of a municipal body invites public scrutiny because it is ostensibly the role of the public to ensure that the municipality is carrying out its mission to serve the community. Unfortunately, there are often behind-the-scenes circumstances that may not be easily articulated for public consumption, and the City may be subject to criticism rooted in misunderstanding. Even the most experienced cities often lack the skill set and resources to adequately shape a message that successfully deflects criticism.

Likely, ResTech has its own mechanisms and staff in place to handle its marketing efforts, and these may be appropriate for its existing customer base. ResTech may also have a handle on the political nuances in Madison, and may need little input from the City (though this will depend

heavily on the degree of involvement City leadership expects to have in the pilot). The City could opt to require in its contract with ResTech additional marketing focused only on the pilot, and this may be sufficient to encourage signups and customer engagement with the new service.

Still, we believe it is prudent to engage a public relations specialist directly to manage the City's engagement with the public. Because the pilot is a well-known City project, community members will look to City staff and leadership regarding any issues that may arise within the pilot, and local media may blame the City for any perceived shortcomings (e.g., construction delays). We cannot stress enough the importance of an "early and often" approach to messaging about the pilot—the City may be able to get ahead of criticism by employing a polished, tailored marketing approach conceived by a competent, experienced public relations specialist.⁴

Create Demand and Consider Customer Education Options

Many potential customers in the pilot area may have never purchased broadband service before, and may have little desire to do so now, in part because access to the Internet may not seem relevant to their lives. It will be important to essentially create demand for the pilot service through a robust marketing effort, and customer training and education. Low monthly pricing is a great selling point, but may not be sufficient to entice customers to sign up if they have never previously subscribed to broadband service. Many potential customers in the pilot areas may not even currently own devices to connect to the Internet.

It may be necessary to not only to show customers how a broadband connection can support new applications, but also to demonstrate some basic uses for Internet service and how these might be meaningful for customers. The City's advertising efforts may need to include highly targeted marketing with a message designed to resonate with a particular customer base—those who may not understand or appreciate their own potential benefit.

Additionally, customers who do sign up for service may own older devices, which might be infected with viruses or malware, or have other factors that will impede the customers' ability to successfully access the network.⁵ This is important because, from the customer's standpoint, if

⁴ UC2B was a learning opportunity in Champaign-Urbana, as none of the agencies that comprise the consortium had prior experience operating a public utility of any kind—especially not a fiber optic network and broadband service. Top leadership at the lead agency for the UC2B project often favored remaining silent instead of crafting important messaging to the UC2B customers and the public, which was ultimately to the detriment of the public's perception of the project.

⁵ Torrent software, which illegally downloads and shares files in the background without a device owner's knowledge, was common on UC2B customers' devices. UC2B received a steady stream of complaints from attorneys that its customers had violated the Digital Millennium Copyright Act (DMCA) by sharing files. In many cases, customers wanted to simply cancel their service because they did not have the skill set or resources to remove the offending software from their devices, and were fearful of receiving ominous cease-and-desist letters from UC2B (which UC2B was required to send as part of its agreement with its upstream provider, Cogent). UC2B customer service staff went far beyond standard ISP support in an effort to help retain customers and educate

the *service* seems slow, novice users will likely lack the knowledge to differentiate between antiquated or compromised equipment, and slow service. Customers might know only that their experience is dissatisfying, and attribute their frustration to their broadband service. In these cases, some customers may follow appropriate channels and contact ResTech for support. However, since this is a City project, some customers may publicly criticize the City and even complain directly to their Alderpersons.

Due to the high political stakes for the City, we suggest working closely with ResTech and possibly other local firms, nonprofit organizations, and businesses to develop customer training and education to help customers successfully use the service. This may include handholding that goes beyond ResTech's usual customer service, marketing efforts that encourage customers to take advantage of community resources like free digital literacy courses, or even educational efforts that the City directly promotes. As we previously noted, the contract with ResTech may need to address issues like this directly to ensure there are reasonable mechanisms in place to best support the vulnerable customer base the pilot is intended to serve.

Supporting the Network Is Not the Same as Supporting the Customers

Given the City's work with its internal network and the Metropolitan United Fiber Network (MUFN), staff involved with the pilot likely understands the complexities of supporting the fiber network. As soon as you connect your first customer, the pilot network is a production network, and the nature of supporting residential customers is much different than the types of services the City is accustomed to delivering.

The network itself requires a lot of care, and staff must be available 24 hours a day, 7 days a week, 365 days a year to handle network issues like outages. Although ResTech will be managing this process, it would be prudent for the City to have staff available to work with its contractor in the event of outages. Routine maintenance is also necessary, and falls under the umbrella of supporting the network—but it is also crucial to communicate directly with customers in the event of outages and other network issues. For example, customers should be made aware of upcoming maintenance as soon as the City has confirmed the dates and times. This allows customers time to plan ahead and avoid unexpected implications to their service. While networking staff typically tries to schedule maintenance during low traffic times of day (e.g., 3:00 AM to 5:00 AM), you cannot assume that no customers will be using the network during these times. For example, a single parent may work a full-time job and take college courses online, and may wake early in the morning—what might be considered a “safe” time to schedule network maintenance—before the work day and before the kids get up so they can finish assignments.

them on how to remove malware and viruses. Most customers on the UC2B project did not have the desire or means to use expensive technical support services that often come with a high flat fee or hourly rate.

Supporting the customers and anticipating what their needs might look like is in the City's best interest because it helps frame the City as a competent network operator and service provider, should the City ultimately decide to go that route. As we noted, serving residential and small business customers is entirely different from serving public or commercial users. Though ResTech is providing retail service for the duration of the pilot, the public will likely hold the City accountable and blame the City for any perceived failures or shortcomings. Even if the City is not held directly responsible, it may be lambasted for its choice of contractor for the pilot project, and accused of not appropriately valuing the vulnerable population it is aiming to serve. Handling the pilot customers carefully is one of the most important elements of successfully carrying out the pilot, and can have major implications for the City's success on any project going forward.

Be Prepared to Field Community Members' Questions and Concerns

As we have mentioned, even if the City has no intention of managing customers directly, the pilot project is a City initiative and there will inevitably be inquiries, questions, and complaints from the public. It is prudent for the City to develop a streamlined method of managing these—including walk-ins, phone calls, emails, and other online communications. The City may want to assign a point person in certain key departments (the Mayor's office, the IT department, public works, and others) who is able to direct community members toward pertinent resources. This staff should be able to patiently listen to customer complaints, assure customers that the City hears their input, and gently guide customers toward the best avenue to solve their issues.

It is important for the City to work with the community members it is serving, and to try to meet their needs, but the City must also think carefully about what it is willing and able to support. "One-offs" quickly make things complicated and expensive. The City must be consistent in what it tells customers it is able to do as part of the pilot. (The same goes for ResTech.) Be prepared to explain that you are providing internet access, not acting as IT staff—or, work closely with ResTech or others to provide this type of support in some fashion.

Be Prepared to Manage Customers Beyond the End of the Pilot Program

At the end of the pilot program, ResTech will turn ownership of the network over to the City, at which point the City will be responsible for both the network and the customers. In a best-case scenario, the City will have determined by then that it is feasible to deploy citywide FTTP, and pilot customers can become part of that rollout. However, it is possible that there will be delays, and other issues that prevent the citywide network from being operational by the time the pilot ends, even if the City has opted to pursue a full municipal build. City staff and leadership should be on the same page internally about what this scenario will look like for customers, and how the City can move forward to support customers or to gracefully end the service.

The pilot project is only conceptual at this point, and considering what happens at the end of it may not seem like an important priority as staff members work to get it off the ground. However, if the City and its partner(s) are not clear on the front end about what contingencies will be in place, and how (or even *if*) customers will continue receiving service at the end of the pilot period, that lack of planning could have unfortunate consequences for the City and its pilot customers.

The City may want to negotiate in its contract with ResTech plans for continuing to provide service to pilot customers beyond the current projected end date. Such an arrangement could offer the City a grace period to regroup and determine how it will manage customers beyond the end of the pilot, and to make alternative arrangements.

Additional Input

The City's IT department is sophisticated and capable, with many years of experience successfully operating a fiber network. We encourage the City to continue documenting fiber strands as accurately as possible (a task that will become more complex as residential customers are added, and especially with a third party contractor in the mix). While your fiber documentation will probably not be perfect, the City should appoint staff to ensure that it is as close as possible. Even though the City is working with ResTech, it is in the City's best interest to oversee and have some say in this process, and the job will likely be a full-time endeavor for one or more people. Documenting fiber now will save significant time, money, and headache down the road because there is no chance the network will be built exactly as designed—a reality with which the City is likely very familiar.

One important piece of advice that may not come as a surprise to City staff is to be prepared for the project to be more complex and take more time than expected. There are likely to be construction delays and unforeseen circumstances, and the City should be prepared with contingency plans and messaging. This is one of the key reasons communicating often with ResTech is so important, and one part of the impetus for having skilled public relations personnel on your team.

Some of these suggestions may sound ominous, but the pilot project is an opportunity for the City to buck the reputations (e.g., poor customer service) of many of the largest incumbent providers and other Internet service providers (ISPs). The City of Madison has unique needs, and its project will not look exactly like any other project. The City can and should build something that is going to serve its citizens well, and we encourage City staff to take some time to think about what that might look like in Madison. For example, UC2B opted not to impose rate-limiting for on-net traffic, which was a great way to demonstrate the power of the network and to serve the unique needs of users there.