

Municipal Broadband

Digging Beneath the Surface

**& Balhoff
Rowe, LLC**



Municipal Broadband: Digging Beneath the Surface

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Reviews and comments about *Municipal Broadband: Digging Beneath the Surface*

Financial community

"Mike Balhoff and Bob Rowe have produced an exceptionally thoughtful and balanced study of the emergence of municipal broadband networks. By going well beyond rhetoric and anecdote, they have produced the only comprehensive, factual study of the legal, financial and policy issues involved in this important and evolving issue of telecommunications policy."

William E. Kennard
Managing Director, The Carlyle Group
FCC Chairman, 1997-2001

"The Balhoff & Rowe analysis and report is spot-on, thorough and well-balanced. The important difference between their work, and many others I've seen on the topic is their thoughtful analysis on the critical variables that affect the success of capital projects in the telecom industry - issues like market share, pricing, technology changes, cost-of-capital, and customer churn. Having witnessed first hand the Telecom Build-up of the 1990s, and the ensuing meltdown as overly optimistic assumptions by "new builders" came up short, I believe the Balhoff & Rowe report on Municipal Broadband should be required reading for the governments and politicians assessing the viability of these initiatives."

Blake Bath
Managing Director - Lehman Brothers
Equity Research

"Balhoff and Rowe's 'Municipal Broadband: Digging Beneath the Surface' is a significant contribution to the debate surrounding government intervention into a rapidly evolving and economically critical market. In addition to thoroughly documenting key legal and policy issues, Balhoff and Rowe's study is unique in its application of disciplined financial analysis to address the critical question of financial viability of municipal networks. 'Digging Beneath the Surface' provides a solid foundation for policy makers of all stripes grappling with the challenge of seeking a balance between advancing public policy goals and the financial realities of the telecommunications marketplace."

Danny E. Zito
Managing Director, Equity Research
Legg Mason

Policymakers and civic leaders

“As Salt Lake City Mayor, I had the opportunity to study first-hand the idea of municipal entry into telecommunications. During the UTOPIA debate, we thoroughly reviewed and analyzed the possibility of joining UTOPIA and concluded this endeavor posed unacceptable risks to taxpayers, particularly in light of emerging technologies. In the study, Municipal Broadband: Digging Beneath the Surface, Balhoff & Rowe lay out the financial and policy issues, provide case studies, and identify the key factors for cities deciding whether to go forward or pursue alternatives to promote broadband access for their citizens. Their study provides a perspective all local officials should consider before taking on the challenges and complexities of entering into a competitive telecommunications business.”

The Honorable Rocky Anderson
Mayor of Salt Lake City

“I have reviewed the text of ‘Municipal Broadband: Digging Beneath the Surface’ and believe that it fairly outlines the potential problems and pitfalls that municipalities may face as they commit to broadband applications. We have been offering fiber-based services for seven years in Ashland, OR, and are closely reviewing our options for our plant at this time. This is the kind of document that would prove helpful for any community that is considering such an investment.”

The Honorable John W. Morrison
Mayor of Ashland, Oregon

“While it is clear that there are many controversial issues to be confronted in the transition to the digital economy – issues for which the State commission members of NARUC continue to seek consensus -- this report by two well-respected telecommunications professionals is a welcome addition to this ongoing debate. This report will be an important resource as my colleagues and I work to develop responsive and responsible policies in the weeks and months ahead.”

Commissioner Diane Munns
Iowa Utilities Board
President, National Association of Regulatory Utility Commissioners (NARUC)

“Individuals on all sides of the municipal broadband debate will find much to consider after reading this important report from Mike Balhoff and Bob Rowe. The authors have written a serious and thought-provoking report that finally attempts to shine light on an area of public policy that has too often only generated rhetorical heat.”

Commissioner Tony Clark
Chair of the North Dakota Public Service Commission
Chair of the Telecommunications Committee for the National Association of Regulatory Utility Commissioners (NARUC)

Academia

“This extensive report provides a thorough and insightful summary of the facts and rhetoric surrounding municipal broadband. Balhoff and Rowe carefully distinguish the different policy rationales and business risks involved in wired vs. wireless networks. Their in-depth discussion of municipal options will support informed decision-making by community leaders. Everyone with a stake in this debate should pay attention to their call for more rigorous study of broadband’s impacts.”

Sharon E. Gillett
Principal Research Associate, Massachusetts Institute of Technology (MIT)
Director of the Broadband Working Group of MIT’s Communications Futures Program

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Executive Summary

Municipal broadband initiatives are in the press almost daily, with some civic leaders promising low-cost economic growth, while other political figures join private industry in vigorous opposition to the proposals. The debate is strident and confusing.

The broadband debate is strident and confusing.

At the same time, the storylines are generally interesting. Virtually every article predicts falling consumer prices, fascinating new technologies, and conflicts among powerful interests. There are no shortages of journalists and far-sighted officials to comment upon the bright promise when government provides wireless and wired broadband networks to further spur competitive activity and social benefits. The proponents for municipal-intervention are confident that they can succeed where private enterprise has faltered, and they are certain that municipalities will be able to stimulate long-term economic growth dependent on broadband information services. The lofty view is that communities are fulfilling their public mandate by embracing the challenge to keep pace with other towns in attracting technologically-savvy consumers and businesses.

The rhetoric is not all positive, however, as some political leaders and most private providers argue just as convincingly as their opponents. The anti-municipal contention is that the entry of government into *competitive* communications markets is fundamentally wrong and will have damaging long-term effects. Their line of reasoning is that, where high-speed services are available through private telecommunications companies, municipalities should not compete with the private sector, in part because there are anti-competitive municipal advantages that can distort the marketplace. The more thoughtful proponents of the private sector concede that, where there is verifiable market-failure, some regions may merit government intervention. However, they predict that longer-term destructive economic forces will be unleashed when government intervenes unnecessarily in offering services in regions that are, or will be, fiercely competitive. The anti-municipal lobby also notes that, in communities where private enterprise is already serving the community, municipal telecommunications services unnecessarily shift market risk from the investor to the taxpayer, and raise the total level of risk for all parties.

Municipal leaders and citizens will need to sift through debates to determine the best course of action.

The problem with the municipal broadband “storyline” is that most of the accounts and analyses are generally superficial and cannot be evaluated because of the absence of data. The reality is far too complex to be distilled in a few points captured in a headline or article. Further, journalists frequently do not have the space or the background to examine the data in a constructive manner. So, the public is left with analyzing “spin” based on quotes from opposing parties that, more often than not, summarily dismiss the other viewpoint on the basis of who sponsored the study.

With the growing interest in broadband, thoughtful citizens and municipal leaders will increasingly need to sift through the data and debates to determine the best course of action – *to effectively commit limited capital toward necessary services and goals*. This report is intended to contribute toward such a constructive analysis of municipal broadband. A fundamental theme is that government clearly has a critical role in considering and fostering broadband growth, but the role is often drowned-out in the noise of the debate. It will be represented in the final section of this report that governments are key players in evaluating outmoded regulations, in focusing investor interest, in concentrating contract awards, in facilitating competition and in offering incentives to accomplish social goals. The technological landscape is changing rapidly and the regulatory schemes require careful monitoring by policy officials. Still, the burning question today is about the consequences and significance when municipalities are *broadband competitors* with the private sector, and that issue is an important consideration in this report.

To achieve a balanced presentation, this report was designed as a data-centric compilation of the financial history of municipal initiatives, legislative/policy sources, and the insights of the independent financial community. This kind of discipline appears particularly important in a period when the rhetoric sounds very much like the Internet boom of the late 1990s, when the promise of new technologies drowned out more careful analyses and people began to believe certain themes simply because the messages were repeated often. This report, therefore, attempts to use verifiable data to propose a more nuanced framework for evaluating the risks and opportunities that are presented to municipalities. *In summary, this report suggests that policymakers remain important partners in the broadband markets, generally by removing barriers to investment, crafting appropriate incentives, and supporting the commitments to social goals. Further, it is possible that municipalities may be the best providers of network services in communities where the private sector is not able to supply the public's needs. However, the data suggest forcefully that municipal intervention in most competitive markets is a financially risky and potentially anti-competitive incursion that simply should not occur.*

The key insights of the report are summarized in the bullets below.

- **Communities are increasingly considering government-sponsorship of fiber or wireless networks.** Municipalities are today more likely to evaluate government-provision of two kinds of broadband networks—fiber and wireless—and the argumentation supporting both is similar, relying on rationales based primarily on economic growth and social benefits.
- **Government-sponsored fiber networks are in a small percentage of towns, but wireless interest is growing in spite of other risks.** Over the last several years, there has been rapid growth in the number of municipal-fiber operations, but the number of towns currently offering wired broadband communications services still represent less than 1% of U.S. towns. More recently, a wider range of communities are considering broadband initiatives based on less capital-intensive wireless network technologies. At the same time, many of those communities have apparently failed to account for relatively higher operating costs, the potential need for more frequent network overhauls, privacy concerns, expanding marketing risks and, importantly, the policy conflicts associated with government competition with private enterprise.
- **It is important that policy leaders should carefully assess their opportunities to facilitate private-sector commitments to broadband.** Because of the importance of broadband growth, policy leaders have an important role in assessing the competitive landscape and promoting an environment in which investment can be made, as will be explained more fully below. Unfortunately, the developing broadband debate has become so polarized that it has led to an oversimplification of the government-sponsored choices. Some municipal proponents and opponents have acted as if there are only two options—leave the private sector investment to unfold on its own or *alternatively* intervene to offer a ubiquitous government-sponsored network. The near-caricature of the

extreme positions has the effect of distracting from government's critical role in changing outmoded regulations, controlling anti-competitive behaviors, and focusing private-sector investments through incentives. If there is another notable oversimplification arising in a too-strident debate, it is the market profile that exaggerates today's bandwidth requirements and understates the trends that reasonably suggest the private sector will provide increasing availability of broadband, higher speeds, more competition, and a better value proposition over the next several years.

- **The government-sponsorship of communications networks is based on five rationales.** The case for municipal broadband is justified by some or all of five arguments: (1) broadband is an appropriate extension of other utility services, (2) broadband generates additional revenues for communities and allows for more efficient operation of already-existing municipal networks, (3) the municipality is intervening because it believes that private enterprise is not serving the market, (4) high-speed services can be an economic stimulus for the community, and (5) the municipality is more oriented toward consumer and social welfare than is the private sector. However, many of the emerging wireless municipal initiatives have dropped the traditional justification that they are filling a competitive void as they target larger communities or even smaller communities where there is a functioning private sector.
- **The anti-municipal argument is founded on four tenets.** The case against municipal operations is based on the assumptions that (1) municipal advantages are more likely to result in market distortions, (2) from a financial perspective, municipal broadband has frequently fallen short of projections and resulted in sizeable subsidizations, (3) municipal broadband initiatives can undercut national competitive policy, and (4) private-sector competitive markets lead to increased consumer benefits in terms of pricing, innovation, and service. Simply stated, the argument is that, short of market failures, it is not a proper role of the public sector to compete in an industry that is effectively served by private enterprise and it is not appropriate to have the regulator (the government) compete with the entities that it regulates.
- **The financial performance of municipal fiber operations has generally been poor.** Over the last decade, municipal communications operations have posted a financial record that was, at best inconclusive, and most often disappointing. While some communities highlight positive social accomplishments, the financial performance has fallen short in terms of penetration, revenues, net profitability and return on investment. In some or many instances, the projected "policy" goals have been supplanted by new policy problems in terms of cross-subsidizations and increased utility rates.
- **Financial analysis of municipal fiber models leads to the conclusion that virtually all the government-owned networks to-date have a negative net present value.** The municipal broadband fiber model, using even favorable projections, appears likely to result in significant negative net present value, and those conclusions are verified by historical performance data. The shortfall occurs significantly because municipalities lack the scale enjoyed by larger private-sector operations that are capable of leveraging costly infrastructure and back office operations.
- **Fixed wireless models are emerging, but appear to have operating and capital costs that are higher than many municipalities have modeled.** The allure of a wireless broadband network is the lower initial capital expense, but there are negative factors that are frequently overlooked by proponents. While the start-up costs are relatively low, Wi-Fi and WiMAX do not support video services, which are an important part of the "customer-bundle," and wireless presents additional security and privacy risks, which are factors that will likely limit acceptance by high-end customers and businesses. Further, the competitive wireless landscape is far more complex than modeled because of alternative competitive wireless technologies that may be differentiated in terms of mobility and

Wireless networks and fiber networks have sharply different financial profiles.

higher throughput (speed). It is a realistic expectation that a Wi-Fi network platform will have to be replaced in a short period of time – possibly three to seven years – if the operator is to remain competitive, further increasing the capital costs above those initially modeled.

Financial risks and policy risks should be assessed.

- **Risks for communications providers – private and public – remain high for several reasons.** Technology choices, investment costs and competitive bundling are evolving quickly, raising the risk for all competitors, including private sector and government-owned operations. Scale, breadth of products, and low-cost operations will likely be determinants of success for the network provider and drivers of value for the consumer. *Generally, municipalities will not have sufficient scale to drive technology development, leverage costs and provide the breadth of products needed in fast-changing communications markets.*
- **Policy issues remain fundamental, but candidly are polarized.** The policy issues remain important for any municipality considering constructing a network, but the positions are almost religiously polarized. The believers in municipal-rights represent that private enterprise is deploying slower technologies, is reluctant to serve less-profitable customers, and is anti-competitive in attempting to restrict government-based competition in townships across the country. The believers in private-enterprise communications services (anti-municipal-intervention except in total market failures) see municipal entry as fraught with conflicts of interest, shifting the market risk from investors to taxpayers, and naïve in misunderstanding the technologies and services necessary to compete.
- **State laws frequently require votes to put capital at risk and have imposed rules to prevent anti-competitive behavior.** This report attempts to address the policy issues by framing the underlying laws, judicial interpretations and pending legislation, with a view to highlighting fundamental issues being raised by the states. The major insights are that states are legislating that citizens must vote before their capital is put at risk in new and higher-risk undertakings, that government entities may not use anti-competitive advantages that skew the marketplace, and that subsidies are appropriate uses of public funds only in extraordinary situations.
- **Municipalities should evaluate their broadband commitments on the basis of sound public principles and a policy-based framework.** To facilitate a practical decision-making approach, the final section of this report suggests that municipalities should commit to a graduated and managed-risk process. Local leadership should first evaluate policy principles, including (a) actively supporting pro-competitive systems and regulations, (b) avoiding competition with a functioning private sector, (c) minimizing risk to public assets and monies, and (d) targeting solutions to social or other specific problems. Then the municipality should commit to a graduated process to stimulate private investment, including employing tactics to attract private investment on the basis of the government's roles as a major broadband user, regulator, director of capital flows, and provider of infrastructure. *If the municipality is not successful in supporting or stimulating private-sector activity, it is then reasonable to consider whether to dedicate limited public capital and assume greater risk in building and operating networks.*

Municipal leadership should deliberate based on clear principles, and commit through a graduated process to stimulate private investment.

Introduction

A study of municipal broadband is, in many ways, too ambitious. The legal, financial, and policy issues are complicated and they are shifting daily. The implementations are vastly different from one community to another and from one year to the next. The technology changes are challenging even for the well-informed. And the emotion on both sides is painfully high. In spite of the complexities, the question of municipal support for broadband remains important and deserves careful examination because of risks and opportunities for the public.

Three goals in this study: (1) analysis of data related to municipal broadband, (2) creation of a more disciplined view of financial and policy factors, and (3) a focus on government's unique role in ensuring a healthy private-sector activity.

There are three goals in this study. *First, this document was crafted to be a measured and even-handed analysis of data and insights into government-sponsored broadband initiatives.* Accordingly, every effort has been made to present the major factors related to policy, operating performance and financial outlook, so that a municipality or citizen can be fairly informed about facts and probabilities in a confusing and hotly-contested topic. *Second, this effort aspires to bring a more disciplined view of the financial and policy factors at work.* Those factors are partially distilled from past municipal operating performance that allows an understanding of key drivers of success or failure. However, additional factors are drawn from financial modeling of the several kinds of network operating platforms that are emerging with financially differing profiles. Notably, there is a careful reflection on the opportunities and risks associated with fiber platforms and wireless networks, which are defined as quite distinct business models. *Third, this report focuses the policymakers' responsibility on government's unique role in ensuring healthy private-sector commitments for the good of the community.*

The body of this report begins with a descriptive overview of the current environment, tracking the history of municipal broadband efforts through the diversification of other municipal utility operations—water, electric, gas, and wastewater. The government-sponsored communications phenomenon has grown over the last eighteen months to include increasing numbers of non-utility-based municipalities. In these latter cases, communities are evaluating how they might serve their citizens with wireless as well as wired network services. The second chapter is also a descriptive commentary, but is focused more specifically on select municipal initiatives that provide a backdrop for the more analytical chapters that follow. The purpose of the second chapter is not to analyze any specific municipal operation, but to introduce the themes of the analyses that follow. The third section presents summary rationales offered by the proponents and opponents to municipal networks, with some testing of the data related to those positions. The analysis then turns in the fourth section to focus on financial modeling, drawing on financial data and Wall Street investment perspectives. *In some ways, the fourth section is intended to be a helpful,*

new contribution to the debate, as it attempts to be disciplined in profiling forward-looking financial factors that drive wired or wireless broadband models. An important element of the fourth chapter is the effort to understand the new competitive forces that are likely to affect the broadband-network provider of the future. A fifth chapter turns to legislative activities, offering a relatively comprehensive presentation of state-by-state activity as well as the federal issues raised by the Telecom Act of 1996. The report uses those legislative documents to crystallize the policy concerns raised in the “debate.” Finally, the analysis turns to outlining a principled decision approach that a municipality might consider in evaluating its commitment to providing broadband services—because government has urgent responsibilities in monitoring the process and there are certainly some communities that may find it reasonable and desirable to undertake broadband development and services, after exhausting other alternatives to stimulate and support private-sector activity.

Objective is to articulate a principled approach related to government intervention, in the context of financial and policy risks.

To re-state the practical premise of this study, the data in this report are organized in an effort to enrich the reader’s understanding of the crucial factors in deciding about whether and how to commit to municipal commercial networks. The specific objective is to articulate a rational and principled approach related to government intervention. It will be clear that there are two distinct, but related, risks that appear foundational to a municipality’s evaluation process. The first relates to taxpayer monies that can be wasted or diverted from other public projects in committing capital to enterprises for which there is insufficient public purpose. The second risk is the potential for damage to long-term competitive policy if there is misuse, or a failure to implement protections around, a municipality’s special advantages.

While there is every effort to be data-centric in examining the historical municipal efforts, it should be noted that there is also remarkable interest in municipal wireless services—generally Wi-Fi and WiMAX—for which no satisfactory historical record is available and for which the arguments are relatively more confused. In many of the proposed wireless operations, in fact, the rationale has morphed to include communities in which there is already robust private broadband competition. In these cases, the temptation appears to be great in light of what seems to be low initial investment cost, with the result that communities seem to have devoted little attention to examining longer-term operating and policy risks. Further, the civic leadership can easily overlook the logical question about why private enterprise is slow to embrace what appears to be a compelling opportunity. Of course, if it appears to be too good to be true, it often is. This study will attempt to bring some better definition to the wireless arguments, but the absence of data may make the case less conclusive.

Authors have a long history of independent analytical work in financial and regulatory worlds.

By way of disclosure, the funding for this study has come from industry. This revelation may cause some readers to pause. Still, it is important to state absolutely that the authors had begun this study before the current sponsors emerged, and this undertaking was accepted with the clear provision that the research would be performed as an independent and fact-based analysis of the financial realities and policy forces at work. The two primary authors of this study have long histories—about 30 years combined—of independent analyses related to communications fundamentals.¹ As a result, it is the intent of all those who have aided in the preparation of this study to provide verifiable historical financials, solid documentation of competitive data, and careful legislative and policy-based analyses. More to the point, it should be noted that no sponsor recommended any specific study or shaped the analysis in this

¹ The authors also have extensive records concerning support for deployment of and access to robust networks. See, for example, Michael J. Balhoff, *Reshaping Rural Telephone Markets*, Legg Mason Wood Walker (Fall 2001), esp. pp. 160-171, which describes the capital and operating challenges in providing advanced services in rural regions. In an article describing multiple strategies to promote access to advanced services, Robert C. Rowe stated, that direct public ownership “is often controversial because it may diminish the potential market for private providers, may transfer technology risk to the public sector, is difficult to reconcile with competitive approaches, and raises the specter of government competition with the private sector. Therefore, it is usually considered a last resort.” *Strategies to Promote Advanced Telecommunications Capabilities*, 52 Federal Communications Law Journal 382, at 398 (March 2000). A fuller set of biographies are included at the end of this report, but it should be noted that Michael Balhoff headed Legg Mason’s telecom equity research for 16 years and was a six-time *Wall Street Journal* All-Star Analyst, while Robert Rowe is the former head of the Montana Public Service Commission, and served as president of the National Association of Regulatory and Utility Commissioners and state chair of the Federal-State Joint Board on Universal Service.

report. *In fact, all the companies emphasized a desire to support a fair and balanced study that did not overstate the fundamental record. Accordingly, the representations of facts, the commentaries, and any errors are solely those of the authors. The reader is urged to consider the merits of the data and logic rather than engage in summary dismissals related to an important topic for many communities.*

*Fundamental
question
concerns
government's
relationship
with the
private
sector.*

A significant number of people have contributed to this study, including various investment houses, industry participants, regulatory personnel, and municipal public servants. Those individuals have been immensely helpful in bringing clarity to an often conflicting set of technologies, competitive forces and policy issues.

Finally, it seems important to conclude these few remarks with the statement of a principle. In reflecting on the entire debate, it appears to the authors that the fundamental and intellectually-determinative factor in the government broadband deliberation arises from an assumption about a municipality's relationship with the private sector. *With respect to that foundational question, the authors' view is that government-sponsored intervention is appropriate in supporting and monitoring broadband growth, and can be justified in providing commercial communications networks . . . if there is a clear-and-defined failure in the private sector regarding a socially or economically important service now or in the foreseeable future. It is also the authors' conviction that government's role does not include the right to compete with a properly-functioning private sector.* Other parties might disagree with those views, but there has been every effort in this document to be intellectually honest in presenting the facts and in limiting any apologetics.

Chapter 1: Overview of Government-Sponsored Broadband Networks

Local governments – large and small – are increasingly considering the merits of sponsoring communications services for their communities. The press is reporting a wide range of interesting stories about Chaska, Minnesota with its new citywide Wi-Fi network, Lafayette, Louisiana with its debate about whether it needs government-owned fiber, Philadelphia with a pointed political dispute swirling around a wireless mesh network, and Tacoma, Washington with its ups and downs prompted by the city’s Click! network.²

The thoughtful municipal leader or citizen will have many questions. How pervasive is the government-sponsored activity? Are there lessons for other communities that might be considering such a plunge? Is this movement a fad or a secular change? Is it a folly or a breakout by far-sighted leaders?

Until 2004, the phenomenon of municipal broadband was centered on small communities with city-owned utility assets.

The answers are predictably more complicated than the articles generally suggest. The complexity arises from a mix of factors that are each difficult to understand, including changes in technology, customer behaviors, competitive activities, and economic demands. As a result, there is something relatively new and unexamined about the policy questions and financial factors that are emerging.

Interestingly, the phenomenon of government intervention in telecommunications was, until the last year, primarily focused on small communities that ran their own utilities operations. Up to that point, the most common pro-municipal argument was that small communities were underserved and needed to leverage their other utility assets. More recently, however, larger communities – even those without utility assets – have begun to evaluate seriously whether they should provision network services to their citizens. As a result, the market failure argument has morphed into a more nebulous commentary on economic benefits arising from ubiquitous low-cost services.

The first section of this report offers a descriptive overview of the municipal broadband phenomenon, both the small-community network builds and the larger-community deliberations that are ongoing today. The chapter attempts to sketch the outline of the phenomenon, including the locations and types of government-based commercial networks and a summary of the broadband services provided by private-

² See, for example, Russell Shaw, *The Future of Wireless*, Corante (February 14, 2005), available at <http://www.corante.com/vision/wireless/chaska.php?page=1>.

enterprise carriers. Additionally, the chapter provides data on private broadband factors. The purpose of the section is to supply a context for later chapters in which the pro-municipal arguments and the financial drivers are analyzed.

Growth of broadband services

Much of the pre-2004 analysis and debate about government intervention in providing communications services was focused on municipal utility-based fiber expansions. In December 2004, the American Public Power Association (APPA) reported that a survey of its members identified 621 public power systems that supply community broadband services.³ The number was up by 9 percent from 570 companies offering broadband, as reported in 2003, and up 37 percent since 2001.⁴ APPA represents approximately 2,007 cities and towns with "public power" utilities, which, up to the present, have been the enterprises most likely to sponsor "wired" communications services. And APPA has been a major defender of the principle that municipalities – and utility operations in particular – should be able to diversify into commercial communications services.

Municipal marketplace has exploded with new kinds of proposals, primarily based on wireless technologies.

However, since the beginning of 2004, the marketplace has exploded with new kinds of proposals, primarily based on wireless technologies. There appear to be approximately 25 communities offering some form of commercial wireless broadband, virtually all startups since 2004. And there are at least nine communities contemplating whether to offer community-wide network wireless services in the near future, including Philadelphia and Minneapolis. At the present, the press reports that the vast majority of the U.S. states have at least a single town evaluating wireless hotspots. Unfortunately, most of the data about those wireless "evaluations" are not very informative since many of the investigations remain exploratory. Further, while pro-municipal reports often point to the widespread interest in wireless services, most of the reports fail to differentiate between free services in concentrated hot-spots and commercial enterprises designed to compete with local broadband providers over a larger geography.⁵ This report concentrates on the latter and assumes that free hot-spots are simply community "services" that do not truly compete with the major private enterprise broadband providers and lack the operational complexity, financial risk and policy implications of large scale networks.

Concentrating first on the legacy broadband providers, **Table 1** outlines the rate of growth in utility-based telecommunications services, using statistics from the American Public Power Association. The data highlight the commitments of utilities, only some of which are sponsored by local municipalities. Nearly 20% of the utilities in the table offer cable television services, while almost a third of them provide fiber leasing. Notably, wireless, long-distance and local telephony represent the fastest-growing services.

³ See the website of the American Public Power Association, including the organization's studies on broadband services at www.appanet.org; the studies include George Ford, *Does Municipal Supply of Communications Crowd-Out Private Communications Investment? An Empirical Study*, American Public Power Association (February 2005); *Community Broadband Separating Fact From Fiction*, American Public Power Association (January 2004); and John Kelly, *Paying the Bills, Measuring the Savings: Assessing the Financial Viability and Community Benefits of Municipally Owned Cable Television Enterprises*, American Public Power Association (March 2005); *Public Power: Providing the 21st Century Through Community Broadband Services*, American Public Power Association (December 2004).

⁴ Ford, *Does Municipal Supply of Communications . . .*, p. 1.

⁵ See *Municipal Broadband Nationwide*, CNET (June 2005), at http://news.com.com/Municipal+broadband+and+wireless+projects+map/2009-1034_3-5690287.html?tag=nl, which provides a good summary of nationwide wired and wireless initiatives as well as legislative developments.

Table 1: Growth in utility-based telecommunications services

| | Jan 2001 | Jan 2005 | Increase | CAGR |
|-----------------------|----------|----------|----------|-------|
| Cable television | 109 | 102 | -7 | -1.6% |
| Internet access (ISP) | 61 | 128 | 67 | 20.4% |
| Fiber lease | 58 | 167 | 109 | 30.3% |
| Local telephone | 18 | 52 | 34 | 30.4% |
| Long distance | 10 | 42 | 32 | 43.2% |
| Wireless | 2 | 30 | 28 | 96.8% |
| Total | 258 | 521 | 263 | 19.2% |

Source: The National Cable & Telecommunications Association; 2003, 2005-06 *Annual Directory & Statistical Report*, The American Power Foundation.

Growth in regional fiber across the board is primarily driven by new telco investments; municipal commitment s up by 8 towns, or 53%, in last six months.

In **Table 2**, there is a more generalized view of the broadband growth based on fiber services. The table draws from regional fiber statistics accumulated semi-annually by Render, Vanderslice and Associates.⁶ The table profiles not only utility-based growth, but also the expansion of fiber-based private-sector networks in U.S. communities. According to the most recent report issued in May 2005, the number of communities with large-scale fiber to the consumer has more than tripled in the last year. Within that larger set, the number of municipally-sponsored fiber communities is 23, up by 8 or 53% in the last six months, to represent about 6% of the total number of fiber communities in the U.S. There are not good statistics on the number of subscribers served by municipalities as a percentage of the total served by fiber, but the figure appears to be less than 1% since most of the communities with municipally-owned networks are small. By contrast, the number of Regional Bell operating company (RBOC) communities with fiber is now 68, according to Render, with the vast majority of the new additions in Verizon’s suburban regions. The number of independent telephone companies sponsoring fiber in communities is up 52% and now totals 138 relatively small townships and service regions. Texas accounts for 31 of the Render-reported fiber communities, the largest number in any state found in the survey.

⁶ Render, Vanderslice and Associates, Semi-Annual Survey, May 2005, available through www.opinionsnow.com.

Table 2: Growth in communities with fiber services

| | Communities | States | Semi-Annual Growth |
|----------------|-------------|--------|--------------------|
| May 2005 | 398 | 43 | 83% |
| October 2004 | 217 | 37 | 70% |
| May 2004 | 128 | 32 | 36% |
| September 2003 | 94 | 26 | 34% |
| March 2003 | 70 | 20 | 40% |
| August 2002 | 50 | 16 | NA |
| August 2001 | 15 | NA | NA |

Source: Telecommunications Industry Association; Fiber-to-the-Home Council; Render, Vanderslice & Associates of Tulsa, OK (see www.opinionsnow.com/RVA/home_mod.html)

Not captured in the statistics is another important market factor. The cable multiple service operators (MSOs) have, in aggregate, committed about \$95 billion in upgrades over recent years, and are beginning to roll out a range of new products based on formidable plant. The data do not reflect those combinations of fiber and coaxial plant, apparently because the plant is not entirely fiber and because the investment occurred several years ago.

Competitive pressures are increasing, likely leading to major network growth in the private sector over the next several years.

It is important to understand the cable commitment, however. In fact, it is MSO investment that is one of the drivers of the statistics in the previous table, as the local telephone companies are beginning to aggressively commit capital to fiber deployments, significantly because of the MSO capacity for data and telephony services. The telcos' competitive urgency is arguably the major driver of the acceleration over the last year, as the semi-annual growth rate surged from 36% in the period ending in May 2004, to 70% in October 2004 and 83% in the most recent period. While municipalities are expanding their commitments, then, the majority of the growth noted in the table is due to independent-local telephone companies and RBOCs. The competitive pressures on the telcos appear so significant that it is reasonable to assume higher incremental network expansions over the next several years.

The summary view is that there is remarkable growth occurring in broadband services, including fiber-based services. The cable operators have invested large sums in their networks, and the MSO capacity and pending services are driving competitive network investment on the part of the local telephone companies, including the RBOCs and the nearly 1,300 independent telephone companies. Municipalities have also committed capital to wired services, but the total appears to be about 23 communities at the present, higher by 8 compared with the statistics six months ago.

FCC statistics suggest widespread availability of broadband and consistently improving competitive markets.

Availability of wired broadband services

The growth rates for high-speed services are important to track, but the fundamental municipal questions concern the reach and sufficiency of the broadband networks. Here, some insight can be gained, but precise statistics are not available by geographic region.

Virtually all the data suggest that broadband is not only widespread, but the rate of deployment appears high across the United States. Using the Federal Communications Commission's (FCC) semiannual reports, it is possible to gain a sense about how pervasive are

broadband services and how many providers offer high-speed in various regions.⁷ The data also highlight the improvements over a relatively short period.

The most recent FCC report was released in July 2005 with survey statistics through December 2004. **Table 3** summarizes the report, including the FCC’s estimates about *geographic availability* of broadband services, reflecting at least some broadband connectivity present within specific zip codes. Additionally, the table provides estimates calculated by Balhoff & Rowe regarding data for June and December 2005. While the total geographic coverage (actual availability in an individual zip code) cannot be known, the messages in the table are relatively clear. First, broadband services – defined as at least 200 kilobits (Kbps) delivered either downstream or upstream – are increasingly accessible. Availability in zip codes with no broadband provider has improved consistently from one period to the next. Approximately 40 percent of the U.S. zip codes were reported as having no “broadband” availability at the end of 1999, a figure that dropped to 5.7 percent in the middle of 2004 and has likely improved to about 3.5 percent by mid-2005. A second valuable insight in the table is that the markets with multiple providers continue to increase, rising from one-third of the markets at the end of 1999 (the total of percentages with two or more providers) to 83 percent of the markets by the end of 2004 and nearly 86 percent of the total in mid-2005 if the authors’ estimates are correct. It is also a reasonable assumption that the quality of service to the customer will increase in a competitive market and that rates will further decline in a scenario with multiple service providers.

Table 3: Percentage of zip codes with high-speed services across the United States

| Number of Providers | 1999 | 2000 | | 2001 | | 2002 | | 2003 | | 2004 | | 2005 (est) | |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------------|------|
| | Dec | Jun | Dec | Jun | Dec | Jun | Dec | Jun | Dec | Jun | Dec | Jun | Dec |
| Zero | 40.3 | 33.0 | 26.8 | 22.2 | 20.6 | 16.1 | 12.0 | 9.0 | 6.8 | 5.7 | 4.6 | 3.5 | 2.6 |
| One | 26.0 | 25.9 | 22.7 | 20.3 | 19.3 | 18.4 | 17.3 | 16.4 | 14.9 | 13.8 | 12.5 | 11.0 | 9.3 |
| Two | 15.5 | 17.8 | 18.4 | 16.7 | 15.7 | 16.2 | 16.8 | 16.9 | 17.1 | 16.8 | 16.3 | 15.5 | 14.2 |
| Three | 8.2 | 9.2 | 10.9 | 13.2 | 13.1 | 13.3 | 14.4 | 14.0 | 14.9 | 14.9 | 15.1 | 15.1 | 15.0 |
| Four | 4.3 | 4.9 | 6.1 | 8.2 | 9.1 | 9.6 | 10.3 | 10.6 | 11.2 | 11.6 | 12.2 | 13.1 | 14.5 |
| Five | 2.7 | 3.4 | 4.0 | 4.9 | 6.1 | 6.9 | 7.3 | 7.7 | 7.8 | 8.4 | 8.9 | 9.3 | 9.6 |
| Six | 1.7 | 2.5 | 3.0 | 3.6 | 4.2 | 4.6 | 5.0 | 5.3 | 5.8 | 6.1 | 6.3 | 6.4 | 6.5 |
| Seven | 0.8 | 1.7 | 2.3 | 2.8 | 3.2 | 3.2 | 3.9 | 4.0 | 4.2 | 4.4 | 4.6 | 4.8 | 5.0 |
| Eight | 0.3 | 0.8 | 2.0 | 2.2 | 2.5 | 2.8 | 2.7 | 3.1 | 3.3 | 3.6 | 3.6 | 3.6 | 3.7 |
| Nine | 0.2 | 0.4 | 1.6 | 1.9 | 2.0 | 2.4 | 2.2 | 2.5 | 2.6 | 2.8 | 3.1 | 3.6 | 4.3 |
| Ten or more | - | 0.4 | 2.4 | 3.9 | 4.0 | 6.4 | 8.0 | 10.5 | 11.4 | 11.8 | 12.8 | 15.4 | 23.0 |

Source: FCC; estimates by Balhoff & Rowe, LLC

The FCC defines high-speed as 200 kilobits per second in at least one direction, upstream or downstream.

⁷ FCC, *Federal Communications Commission Releases Data on High-Speed Internet Access Services*, (July 2005), available at http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/hspd0705.pdf.

Broadband is growing more available in high-density and low-density zip codes.

The FCC uses the same data survey, with the same limitations as those outlined above, to gain another vantage point on the availability of broadband services. This analysis reflects the concentration of population in the zip-code-based geographic regions. **Table 4** summarizes the FCC's approximation of the percentage of the population residing in the zip codes where 200+ Kbps service is available. Again, the trends appear striking as broadband is increasingly available to the higher-density population centers, and is growing more available even for people residing in zip codes with very low density. In this table, as in the previous list, estimates are provided for June 2005. Notably, 99 percent of the more densely populated zip codes (areas with 41 or more persons per zip code) report some availability as of June 2004. Even in the zip codes with fewer than 6 persons, 91 percent of those zip codes have some high-speed availability. It would be desirable to have more refined metrics regarding the speed of the service or how pervasive the service is within the zip code. Still, the trends reflect that broadband is spreading rapidly and is likely to continue to do so in an increasingly competitive marketplace.

Table 4: Percentage of population that resides in zip codes with high-speed service

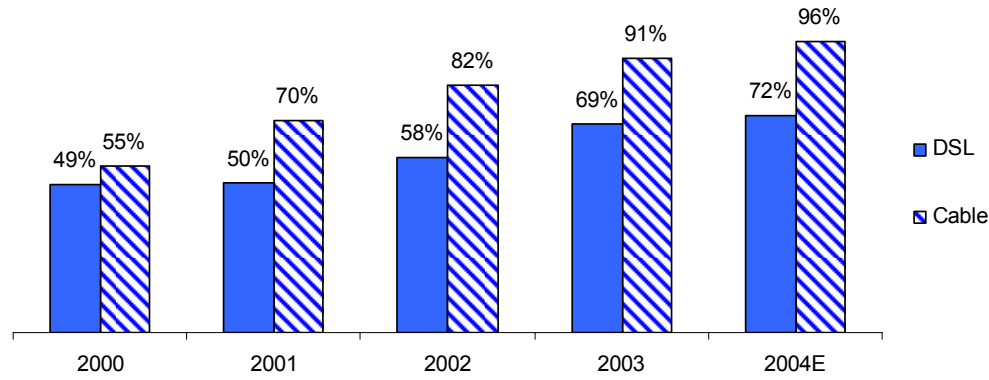
| Persons/sq. mile | Jun-00 | Jun-01 | Jun-02 | Jun-03 | Jun-04 | Jun-05 (est) |
|------------------|--------|--------|--------|--------|--------|--------------|
| More than 3,147 | 99.7 | 99.9 | 99.8 | 100.0 | 99.9 | 99.9 |
| 947-3,147 | 99.4 | 99.8 | 99.9 | 99.9 | 99.9 | 99.9 |
| 268-947 | 98.4 | 99.5 | 99.9 | 99.9 | 99.9 | 99.9 |
| 118-268 | 95.9 | 98.8 | 99.5 | 99.7 | 99.8 | 99.9 |
| 67-118 | 90.2 | 96.8 | 98.5 | 99.4 | 99.6 | 99.8 |
| 41-67 | 81.2 | 93.0 | 96.3 | 98.5 | 99.1 | 99.4 |
| 25-41 | 71.4 | 87.3 | 92.2 | 96.9 | 98.2 | 99.0 |
| 15-25 | 59.9 | 78.4 | 86.5 | 93.3 | 95.6 | 97.1 |
| 6-15 | 56.6 | 74.6 | 81.9 | 90.3 | 93.8 | 95.0 |
| Fewer than 6 | 43.9 | 60.7 | 72.6 | 85.7 | 91.1 | 93.0 |

Source: FCC; estimates by Balhoff & Rowe, LLC.

Data from the private sector suggest 95% availability in non-rural regions and two or more competitors in 80%+ of non-rural regions.

It is not entirely possible to cross-check the FCC's geographic data with information disclosed by the publicly-traded cable and telephone carriers. Due to competitive concerns, most of the private-enterprise carriers are careful about revealing market-specific information concerning their broadband availability. Claritas, Warren Communications and other consulting firms sell proprietary estimates on a state-by-state basis concerning DSL and cable modem availability, but internal company reports suggest that those data remain crude. However, the generalized information corroborates the FCC's findings—that there is 90 percent to 95+ percent broadband availability by at least one private-enterprise carrier in most of the urban and suburban markets, and that the denser areas generally have at least two carriers providing service to 95 percent of the concentrated service areas. In more rural regions, the statistics are more difficult to capture, generally ranging from 30 percent to 100 percent, with the higher percentages in certain independent telephone carrier regions and in regions targeted by larger cable operators. The publicly-disclosed reports of the telephone companies include widespread and higher-quality deployments that will be described below in the section on financial modeling. And the public data of the cable operators reveal a formidable position in the broadband world. The MSOs offer service to nearly two-thirds of the households demanding video services and those operators pass nearly all the urban and suburban U.S. households, as well as a meaningful number of rural households. Using those public reports, the equity research group at Banc of America Securities tracks the history and future estimates of broadband DSL and cable modem availability as outlined in **Figure 1**. Banc of America sees DSL availability climbing to 80 percent in 2005, while cable remains relatively stable in the mid-90 percent range.

Figure 1: Availability of broadband services to U.S. households, 2000-2004



Source: Banc of America Securities; Balhoff & Rowe, LLC

In spite of 95%+ availability in many regions, only about 32% of households subscribe because broadband is not perceived as essential.

Subscriber growth is accelerating, and value—in terms of price and speed—is improving.

A further perspective on market-penetration by the private sector can be drawn from quarterly data released by companies with publicly-traded equities. The data are summarized in

Table 5 draws from the reports of the local telephone companies (also called incumbent local exchange carriers or ILECs) and the reports of the major cable operators.

The statistics suggest several important insights.

- *First, broadband penetration rates significantly lag the availability statistics.* The market penetration is now about 32 percent, while availability is closer to 95 percent. The explanations for the gap between available services and the actual subscriptions are several. Some consumers do not purchase residential service because they do not have or do not feel comfortable with computers, or they are sensitive to high prices, or there is an absence of compelling applications, or there is an availability of broadband in other venues (schools or work), or in some cases, there may be literacy problems or keyboard-related deficiencies. The point is that consumers do not see residential broadband as an essential service at this time—for various reasons.
- *A second insight is that the cable operators continue to provide service to the majority of the market*—approximately 57 percent of those using DSL or cable modem private-carrier services—compared with about 43 percent served by the local telephone companies. Because it is rational for the competitor with lesser market share to use price as the primary weapon, the telcos will likely continue to drive rates to low levels over the next several years.
- *Third, the number of new subscribers each quarter is generally rising,* so that approximately 2.6 million more households were added in the first quarter of 2005, up 11 percent from 2.3 million added in the initial quarter of 2004.

- ✦ *Fourth, the local telephone companies have been gaining a majority of the new additions each quarter since the first quarter of 2004, driven by aggressive marketing and pricing. The importance of this insight is that competition in terms of the value proposition is growing, and the trends suggest that that competition could accelerate, particularly with the cable companies initiating telephony services using Voice over the Internet Protocol (VoIP). Again, it is the telephone companies that are driving pricing to lower levels.*

Table 5: Market share for DSL and cable modem providers

| | 1Q03 | 2Q03 | 3Q03 | 4Q03 | 1Q04 | 2Q04 | 3Q04 | 4Q04 | 1Q05 | 2Q05E |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| High-speed subscribers | | | | | | | | | | |
| ILEC-DSL (000s) | 6,510.5 | 7,114.7 | 7,920.3 | 8,785.8 | 9,962.9 | 10,890.4 | 11,959.6 | 13,158.5 | 14,571.4 | 15,676.6 |
| Cable (000s) | 11,461.8 | 12,338.9 | 13,524.0 | 14,546.7 | 15,662.8 | 16,454.8 | 17,689.6 | 18,726.9 | 19,869.1 | 20,683.1 |
| Market share of total households | | | | | | | | | | |
| DSL | 6.0% | 6.5% | 7.2% | 8.0% | 9.0% | 9.8% | 10.7% | 11.7% | 12.9% | 13.9% |
| Cable | 10.5% | 11.3% | 12.3% | 13.2% | 14.1% | 14.8% | 15.8% | 16.7% | 17.6% | 18.3% |
| Total | 16.5% | 17.8% | 19.5% | 21.2% | 23.1% | 24.5% | 26.5% | 28.4% | 30.6% | 32.2% |
| Share of total high-speed subs | | | | | | | | | | |
| DSL | 36.2% | 36.6% | 36.9% | 37.7% | 38.9% | 39.8% | 40.3% | 41.3% | 42.3% | 43.1% |
| Cable | 63.8% | 63.4% | 63.1% | 62.3% | 61.1% | 60.2% | 59.7% | 58.7% | 57.7% | 56.9% |
| MSO/ILEC ratio | 1.76x | 1.73x | 1.71x | 1.66x | 1.57x | 1.51x | 1.48x | 1.42x | 1.36x | 1.32x |
| Net additions in quarter | | | | | | | | | | |
| Total ILEC net adds (000s) | 634.5 | 604.3 | 805.6 | 865.5 | 1,177.2 | 927.5 | 1,069.2 | 1,198.9 | 1,412.9 | 1,105.1 |
| Total cable net adds (000s) | 1,175.4 | 877.2 | 1,185.0 | 1,022.7 | 1,116.2 | 791.9 | 1,234.9 | 1,037.2 | 1,142.3 | 814.0 |
| Net adds ILEC % of total | 35.1% | 40.8% | 40.5% | 45.8% | 51.3% | 53.9% | 46.4% | 53.6% | 55.3% | 57.6% |
| Net adds MSO % of total | 64.9% | 59.2% | 59.5% | 54.2% | 48.7% | 46.1% | 53.6% | 46.4% | 44.7% | 42.4% |
| Net add ratio MSO/ILEC | 1.85x | 1.45x | 1.47x | 1.18x | 0.95x | 0.85x | 1.15x | 0.87x | 0.81x | 0.74x |
| ILEC net adds as % of prior qtr total | 10.8% | 9.3% | 11.3% | 10.9% | 13.4% | 9.3% | 9.8% | 10.0% | 10.7% | 7.6% |
| Cable net adds as % of prior qtr total | 11.4% | 7.7% | 9.6% | 7.6% | 7.7% | 5.1% | 7.5% | 5.9% | 6.1% | 4.1% |

Source: Legg Mason and Balhoff & Rowe, LLC.

Sufficiency or quality of high-speed services has been a concern, but trends appear positive.

The “sufficiency” or quality of the private-sector broadband services is the related concern of municipal leadership, who sometimes argue that the speeds are not high enough or the pricing is too elevated. With respect to the quality of service, most of the reports indicate that the “high-speed” throughput is in fact improving because of demand and competitive pressures. Cable operators are typically offering 3 to 4 megabits per second (Mbps) downstream, even 6 to 10 Mbps in some venues, while DSL providers are closer to 1.5 Mbps to 3.0 Mbps, compared with more prevalent speeds of half those rates 18 months ago. In the cases of virtually all the private enterprise carriers, the throughput speeds are expected to increase over the next years. And, in the communities with fiber closer to end-user premises, the private-enterprise community is moving rapidly to symmetric speeds that are rising toward 100 Mbps. Those “premium” services are targeted initially at customers more likely to purchase the services—those who have need for the faster services and the willingness to purchase—but the vast majority of the country today does not have a near-term need for service that rises appreciably above 1.5-3.0 Mbps. Some observers may wonder about the negative effects if certain communities do not have access to the highest speeds available in other communities, but *it*

Relatively few applications today require speeds above 1.5 Mbps, and there is no quantifiable loss of value today when residential subs have only 1 Mbps.

should be noted that not many applications today require speeds faster than 1.5 Mbps and the consumer does not seem ready to pay for the high investment cost associated with capacity above 10 Mbps or even 1.5 Mbps. The consumer in the future will likely demand more throughput, but the pervasive need is simply not yet there. And there is virtually no quantifiable loss of value today to residential consumers that have a mere 1 Mbps compared with higher speeds.

The pricing data are further positive indicators regarding the fundamental trends. Broadband service pricing continues a downward, consumer-friendly pattern, significantly driven by large telephone companies that are attempting to protect their businesses from losses of voice and data customers. As recently as June 1, 2005, SBC announced monthly broadband pricing of \$14.95, which will almost certainly be followed by other telephone companies.⁸ Basic SBC Yahoo DSL service (speeds of 384 Kbps to 1.5 Mbps) is priced lower than some dial-up ISPs, and, for consumers that want higher data transfer rates (1.5 Mbps to 3 Mbps), a “premium” service is available at \$24.99 per month for a 12-month term. Most analysts believe that the product-offer will put more pressure on rivals to review their pricing and value propositions. Up to this time, the cable operators have attempted to hold their pricing closer to an average \$41 monthly since they appear to have an infrastructure advantage, and they can differentiate for the near future on features and speed.⁹

Table 6: Pricing trends for high-speed services

| | 2004 | | | | 2005 | | | |
|--------------|------------|-------------|------------|------------|------------|-------------|------------|------------|
| | Promo life | Promo price | Full price | Throughput | Promo life | Promo price | Full price | Throughput |
| RBOCs | | | | | | | | |
| BellSouth | 1 mo. | Free | \$39.95 | 1.5M/256k | Cash back | \$100 | \$32.95 | 1.5M/256k |
| Qwest | 3 mo. | \$26.99 | \$39.99 | 1.5M/896k | 12 mo. | \$19.99 | | 1.5M/256k |
| SBC | 1 year | \$26.95 | \$49.95 | 1.5M/128k | 12 mo. | \$14.95 | | 1.5M/384k |
| Verizon | 1mo. | Free | \$29.95 | 1.5M/384k | 3 mo. | \$19.95 | \$29.95 | 1.5M/384k |
| Cable | | | | | | | | |
| Cablevision | 6 mo. | \$29.95 | \$44.95 | 5M | 6 mo. | \$29.95 | \$44.95 | Up to 10M |
| Comcast | 3-6 mo. | \$19.95 | \$42.95 | 3M/256k | 3-6 mo. | \$19.95 | \$42.95 | 4M/384k |
| Cox | 6 mo. | \$29.95 | \$39.95 | 4M/512k | 3 mo. | \$19.95 | \$39.95 | 4M/512k |
| Time Warner | 3 mo. | \$29.95 | \$44.95 | 3M/384k | 6 mo. | \$29.95 | | Up to 8M |

Source: Balhoff & Rowe, LLC, Banc of America Securities, and company reports; shading denotes a positive trend for consumers from 2004 to 2005.

Table 6 highlights the trends over the last year, as prices have been declining sharply at all four RBOCs and the value proposition in terms of throughput has been increasing for cable customers. Commenting on competitive factors, Banc of America Securities made an interesting point in a recent report on broadband pricing, noting that the rate that customers focus upon is increasingly the promotional price which is in

Private-sector trends in terms of prices and throughput are positive for consumers.

⁸ SBC Communications Breaks New Ground for Consumers with Residential DSL for \$14.95 When Ordered Online, (Corporate press release) June 1, 2005.

⁹ See Daniel Zito et al., *Telecom and Cable Service: ILEC and Cable Broadband Update* (Legg Mason) May 27, 2005.

some ways becoming the most important signal to consumers about where monthly rates will eventually settle.¹⁰ The shaded items in the table represent prices that are lower in 2005 compared with 2004 or improved throughput at the same price in 2005 compared with 2004. The shaded items reinforce the consumer-friendly developments as competition has increased among the major private sector players.

In summary, the private-sector indications are that broadband service is expanding geographically, is growing more competitive, and the services are pervasively present in the vast majority of the urban and suburban communities. Competition is also increasing as reflected in lower prices and improved value to the consumer. Still, not all customers avail themselves of these residential services, likely for a variety of reasons.

Government-sponsored initiatives

Until recently, relatively small communities with their own utility operations were the primary sponsors of municipal telecom services.

Until recently, relatively small communities have been the primary sponsors of municipal telecommunications services. A review of recent history suggests two points. First, for legacy wireline municipal operations, there was virtually always a parent municipal utility that sought to leverage its assets. The utility had rights of way, internal communications systems, relationships with customers, and other assets. The diversification into telecom was seen as another means of generating revenues for the utility. Second, the municipal telecommunications operations over the last decade usually targeted cable television services, which were high-value opportunities in that era. In many of the cases, the utility suggested that its motive was to respond to certain “problems” with the local cable provider—poor service or high rates. But the major motive, and certainly the most common, was a perceived opportunity for the community to target a high-revenue and apparently profitable product-set. In most of those cases, the competitors vigorously opposed the entry, both before and during the entry process, as will be described more fully in Chapter 2.

Table 7 lists many of the video-based municipal systems that are operating in small communities today. The table is intended to provide some insight into the historical pattern, but is not inclusive of all municipal operations nor should it be interpreted as necessarily the government-operation’s strategic focus today. The bolded communities in the table highlight the additional pattern that most of the historical video initiatives had parent utilities offering gas, electric, water or wastewater. For example, Barbourville, KY purchased a local cable operation in 1996 for \$2.8 million and now offers cable services as part of the Barbourville Utility Commission which has supplied water and electric since 1938. Paragould in Arkansas began its video operations in 1991 and then in 1998 purchased the only competitor—Cablevision—a story similar to Glasgow, Kentucky, which began its operations in 1989 and then bought out Comcast in 2001. The historical pattern was to leverage the municipal utility operations to expand into video services, generally for small communities. In most of the cases, the utility expanded on the base of its assets, began offering video services, added data and Internet, and then moved laterally into telephony.

¹⁰ Douglas Shapiro, *Broadband Brief*, Banc of America Securities (September 4, 2004), pp. 3-4.

Table 7: Overview of municipal video-services networks

| State | Municipality (cable start date) [bolded communities have parent offering other utility operations] |
|-------|--|
| AL | Scottsboro (1999) |
| AZ | Wellton-Mohawk (Private Cable franchise) |
| AR | Conway (1984), Paragould (1991) |
| CA | Alameda (1998), San Bruno (1972) , Anaheim (private cable franchise) |
| GA | Doerun (1984), Fairburn (1997), Moultrie (2002), Forsyth (1999), Newnan (1997), Acworth (2001, sold to UTI Holdings 12/2002), Camilla (1997), LaGrange (1998, leased to Charter), Pelham (Wireless Internet only - 2003), Sylvester |
| IA | Algona (2003), Alta (2000) , Atlantic (private franchise), Bellevue (1993) , Cedar Falls (1996), Coon Rapids (1982), Grundy Center(1998), Harlan (1995), Hawarden (1997), Independence (2000) , Indianola (private franchise), Laurens (1999), Lenox (1984), Manil |
| KY | Barbourville (1996), Glasgow (1989), Frankfort (1952) , Murray |
| MA | Braintree (2004) , Charlemont (too small), Wakefield (private franchise) |
| MI | Coldwater (1997) , Negaunee (private franchise - Charter) |
| MN | Westbrook (1991), Coleraine (1991), Lakefield (1986), Barnesville (1998), Cross Lake (1982), Boyd (1984) |
| MO | Unionville (1977), Kahoka (1994) |
| NE | Butler (private franchise) |
| NC | Morgantown |
| ND | Stanley (private franchise - Mid State Telephone) |
| OH | Lebanon (1998), Wadsworth (1997), Bryan (1998) |
| OR | Ashland (1997) |
| PA | Kutztown (2002) , Johnsonburg (1952) |
| VA | Bristol (2001) |
| WA | Tacoma (1998) |

Source: Balhoff & Rowe, LLC and municipal reports.

About 23 municipal fiber-based operations provide service today, and some larger cities are evaluating similar operations.

Table 8 lists many of the communities that sponsor municipal fiber network operations. If the previous table was not comprehensive, this table becomes somewhat vaguer still, but is included to give the reader a sense of the underlying patterns. The reader should understand that the specific communities sometimes vary from one list to another, as it is unclear whether to include a targeted fiber operation together with community-wide operations. Today, approximately 23 municipally-sponsored fiber networks provide commercial telecommunications services in the U.S. The table highlights that an even larger number of networks are under consideration in various communities. Of interest is the fact that larger cities are evaluating the potential for fiber services, including Lafayette, Louisiana (where citizens voted to support a bond offering in June 2005), New Orleans and San Francisco, compared with the legacy commitments which generally occurred in smaller towns. It will also be explained in more detail in Chapters 2 and 3 that the rationale in the case of the larger communities appears bolder, as municipalities are less inclined to target underserved areas, but apparently are designed to generate additional revenues, which is sufficient in the minds of the proponents to justify the new utility investments.¹¹

¹¹ See, for example, Renaissance Integrated Solutions, *Data Demand Sparks Race to Bring Fiber Optics Home* (March 7, 2005); "The city sewerage and water board will lease the conduit, which will offer broadband service providers dedicated runs to about 80 key buildings. It hopes to gain not only ultra-high-speed connectivity for the heart of its business district, but also a revenue stream where only sewage ran before."

Table 8: Overview of municipal fiber networks

| State | Fiber functioning operations | Planned/contemplated |
|-------|---|---|
| AL | Sylacauga | |
| CA | Loma Linda, Anaheim, Alameda, Palo Alto | Truckee-Donner, Palo Alto, Lompoc, Fontana, Ontario |
| FL | Quincy | Jacksonville |
| GA | Dalton | Sylvester |
| IL | | Naperville, Peru, Princeton, Rochelle, Rock Falls, Rockford |
| IN | Auburn | Crawfordsville |
| IA | Cedar Falls, Spencer | Opportunity Iowa - Statewide |
| LA | | Lafayette |
| MA | | Concord, Taunton |
| MI | | Cobblestone-Holland |
| MN | Windom | FiberFirst |
| MO | | North Kansas City |
| NH | | Hanover |
| NY | | Ontario and Monroe counties |
| OH | | Dover, Butler County, Dublin |
| OK | Sallisaw | |
| OR | | The Dalles, Minet project: Monmouth/Independence |
| PA | Kutztown | |
| TN | Jackson | Bristol, Morristown |
| UT | Provo, Utopia | |
| VT | | Burlington |
| VA | Bristol | Danville, Lenowisco |
| WA | Chelan, Clallam, Douglas, Grant, Mason Counties | |
| WI | Reedsburg | |
| WY | | Rock Springs-Green River |

Source: Balhoff & Rowe, LLC and municipal reports.

Municipal wireless initiatives

Government interest in wireless networks is expanding at a rapid rate.

While the number of fiber networks is increasing, government interest in wireless networks is today expanding at a far more rapid rate. **Table 9** summarizes data about some of the functioning wireless operations sponsored by municipalities or other government organizations. It should be noted that there is a stunning increase in interest in wireless projects and it is difficult to track the initiatives. Again, the table is not exhaustive and simply provides a sense of extent of the activity. The table highlights the large number of communities considering a new kind of service based on a rationale that has shifted from the network commitments of the last fifteen years. The new elements include larger communities, less reliance on the absence of the private sector, more dependence on vague rationales such as concerns about the digital divide and the need for economic development, and more concentration on the “competitive” revenue opportunity.

Table 9: Overview of government wireless networks

| Region | Owner | Investment | Model | Performance/Financials |
|---|---|--|---|---|
| Allegany County, MD Pop. 60,000; 103 sq mi | AllCoNet2 (4 Allegany public entities) | \$4.9 million (estimated) | Grant access to local ISPs; uses 6 GHz bands and unlicensed spectrum | |
| Western KS 11 Counties | Wheatland Electric (electricity cooperative) | | \$37 per month 512 Kbps to \$87 per month 1 Mbps; competes with DSL and cable | 2000 wireless broadband subs in first 30 months |
| Benton County, WA Pop. 142,000 40 sq mi | Maverick Wireless (ISP) | Gets fiber backhaul from local utility | Monthly fees: \$19.95 (128 kbps), \$34.95 (512 kbps), and \$49.95 (1 Mbps) | |
| San Diego County tribal villages 12,000 sq mi | So. California Tribal Chairman's Association | \$5 million grant from Hewlett Packard | Provides access to tribal offices/schools; CPE is still high (\$300-\$500) not affordable for most households | |
| Houston County, GA Pop. 120,000 377 sq mi | County | \$702,000 year 1, \$340,500 recurring annual cost | Cooperative wholesale: allow ISPs to use network to deliver broadband services | |
| Southeast WA State 3700 sq mi | Columbia Rural Electric (nonprofit coop) | | Charges for access, remote monitoring and apps for farmers; monthly \$40 for 256 kbps, \$260 for 1.5 Mbps | |
| Chaska, MN Pop. 18,000 16 sq mi | Chaska.net, city-owned ISP | \$800,000 | Charges \$16/mo for 1 Mbps symmetrical bandwidth | |
| Cerritos, CA Pop. 50,000 8.6 sq. Mi | Airmesh (ISP) | Approximately \$600,000 | \$40/mo residential and \$300/mo business | |
| Grand Haven, Michigan Pop. 11,000 15 sq mi | Ottawa Wireless (ISP) | \$40,000 per square mile to deploy | Voice over Wi-Fi: basic \$20 monthly; unlimited \$30; wireless broadband \$15 (100 kbps), \$45 (512 kbps) | |
| Buffalo, Minnesota Pop. 2,000 6 sq mi | Buffalo Wireless Internet Group | \$750,000 to build the network | \$16/mo (residential) to \$40/mo (business) plus cost of antenna | |
| Rio Rancho, NM Pop. 60,000 103 sq mi | ISP: Azulstar (same as Grand Haven, MI) | | \$20/mo for 256kbps/ 100kbps; \$40/mo for 1.5 Mbps/ 300kbps; \$80/mo for 4Mbps/500 Kbps | |
| Nevada, Missouri Pop. 8600 8.9 sq mi | City (Neighborhood Link, an ISP, administrator) | \$40,000 initial deployment costs | \$35 to \$120 per month plus installation/CPE fees of \$80 to \$300 | |
| Vivian, Louisiana Pop. 4200 5.2 sq mi | Fastline Internet (ISP) | \$28,000 to deploy; \$2000 annual; 1.5 Mbps \$129 | \$10 (64kbps) to \$60 (1 Mbps) per month; CPE: \$200 70 subscribers | |
| Linden, Texas Pop. 2200 3.5 sq mi | Fastline Internet (ISP) | \$9000; \$1000 annual maintenance; T-1 \$750/mo | \$10 (64kbps) to \$60 (1 Mbps) per month CPE: \$200 40 subscribers | |
| Scottsburg, Indiana Pop. 6000 4.8 sq mi | City | \$384,000 | Charge \$35/mo for 512 kbps, \$200/mo for T-1; 20% of households have subscribed (400 customers) | |
| Owensboro, Kentucky Pop. 54,000 17.4 sq mi | Owensboro Municipal Utilities | | | 2100 subscribers |
| Pasco, Washington Pop. 32,000 28 sq mi | Franklin PUD (city utility) | Uses utility's fiber network | \$50-\$350 CPE, charges \$25-\$75 per month | |
| Waupaca, Wisconsin Pop. 5700 6 sq mi | City | \$100,000 for tower-\$320,000 loan for build | \$40/mo plus installation fee of \$99 | |
| Jackson, Wisconsin Pop. 5500 2.5 sq mi | City | | | |
| Adel, Georgia Pop. 5300 7.9 sq mi | City (ISP services with TriState Broadband) | Uses city fiber as backhaul | \$24.95/mo for residential | |
| Island Pond, Vermont Pop. 1350 4.2 sq mi | City | \$1250/mo T1 line; \$50k-\$70k installation costs | \$30/mo residential; \$130/ mo business | |
| Dublin, Ohio Pop. 32,000 21 sq mi | City | \$2.5 million; fiber backhaul | Charges for access; deployed network because of lack of broadband service | |
| Lompoc, California Pop. 40,000 5 sq mi | City | Part of muni fiber network (total cost \$26 million) | Will charge for access; expects to sign up 4000 customers in the first two years | |
| Lafayette, Louisiana Pop. 193,500 13 sq mi | Syndeo (ISP) | | Will offer paid-for wireless broadband service; (note: may not be "online" as of the date of this report) | |
| Montpelier, Vermont Pop. 8,000 10.2 sq mi | Muni use in phase 1; will add public access | \$50,000 equipment cost | Saves city \$18,000-\$20,000 annually in costs; muni services in phase 1, public access in phase 2 | |

Source: Balhoff & Rowe, LLC and municipal reports.

The summary insights from the table are that large and small communities are considering wireless initiatives, in some cases on their own and in others together with private partners. Most of those communities have concentrated on the attractive features of wireless, including rapid deployment of the services, ubiquity, and relatively low upfront capital commitment, which, in the table, is presented as below \$5 million for small communities. Notably, the articles and data about most of the initiatives remain relatively sketchy about the operating models and financials associated with the wireless plans.

Summary

This initial chapter is intended to survey the provision of broadband services in the U.S. The section supplies an overview of the demand for broadband, the pace of change, the activity of municipals and private enterprise, and the shifting focus of municipalities toward wireless infrastructure.

The general messages about broadband that might be drawn from this first section's survey are that . . .

Initial survey indicates that high-speed services are widely available and improving significantly, while penetration is still well below availability for multiple reasons.

- High-speed services are apparently available to the vast majority of U.S. households, likely somewhere between 80 percent and 95 percent of the total; and the number of private carriers in those markets is generally two or more, with the numbers increasing in each official government report; those estimates are drawn from government statistics, private carrier data, and independent financial analysts;
- Availability and penetration rates are, on average, somewhat lower in rural regions, but the trends continue to be positive even in sparsely populated areas;
- The throughput and pricing for high-speed services continue to improve dramatically, and the improvements may be accelerating with increasing competition particularly among telephone companies and cable operators;
- The penetration rates suggest that about one-third of the households that could receive service actually subscribe, with the shortfall likely explained by multiple factors including lack of availability of computers, pricing concerns, alternative access to broadband, and lesser interest in benefits provided by the Internet; the argument based on "building it and they will come" is likely too simple; and
- Municipalities are increasingly considering fiber and wireless broadband networks, but the major driver of broadband growth remains the private sector where the competitive forces are evolving rapidly.

Chapter 2: Record of Municipal Broadband Operations

Chapter provides specific illustrations focused on financial performance, as backdrop for later chapters.

The second section of this report is designed to be mainly descriptive, as was the first chapter. This section sets the financial context for what is unfolding in various municipal broadband initiatives. The chapter focuses on illustrations of select municipal broadband operations, with more attention on the financial data drawn from seven initiatives. The purpose of the presentation is not so much to study in specificity each of those operations, but to highlight certain operating and subsidization issues as well as other financial themes that are fundamental in the analyses in the succeeding chapters. From the outset, it is acknowledged that some communities may wish to subsidize or assume financial risk because of other values. However, this chapter will begin the process of examining some of the financial risks that will be further considered in subsequent chapters. The current section is divided into three parts: (1) an overview of the financial reporting conventions of the municipal projects, including the limitations arising from insufficient reports to the public, (2) the more traditional fiber or other wired municipal broadband initiatives, and (3) seven summary case studies.

Financial reporting of major municipal broadband projects

Complete financial record of municipals is difficult to compile because of summary accounting conventions.

The financial community tracks carefully the performance of publicly-traded telephone companies, cable operators, and competitive telecommunications carriers, using detailed reports issued on a quarterly basis. The reports permit relatively immediate insight into and responses to problems as well as detailed modeling by independent analysts who follow the underlying trends. The financial record regarding legacy municipal projects is candidly more difficult to compile. Specifically, municipal reports are generally published at annual intervals (often delayed another six months), and are sketchy in terms of details regarding revenues, subscribers, operating costs, financing costs and capital expenditures. *This delayed reporting appears to be more troubling in the broadband industry which is changing rapidly and for which detailed reports seem appropriate to aid investors and taxpayers.*

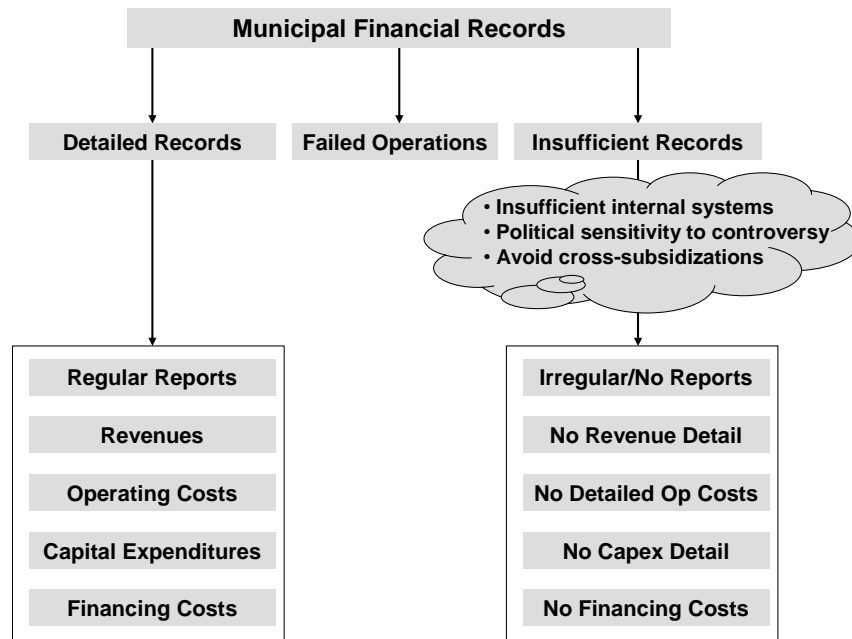
While some municipalities such as Cedar Falls, IA, provide some detail about most key items, many municipalities fail to supply information that is needed to perform a sufficient financial analysis. The reporting conventions are frustrating as it is difficult to review and understand the successes or failures, the positive and negative trends, and the underlying valuations of the distinct operations. Some municipalities publish some segment information as part of municipal utility performance, but others fold the operations into general municipal reports where total revenues are the only line item.

Various reasons for sketchy reports, but it appears reasonable to recommend better and more regular reporting if a municipal commits to such a high-risk business.

In conversations with municipalities, it is apparent that there are multiple reasons for the sketchy reports. In some instances, the municipality has experienced financial problems and is reluctant to provide detail. Alternatively, the municipal operation may have restructured in the wake of finding problems, with the result that it becomes more difficult to define consistent year-to-year data, including insight into debt that is forgiven. In others, the municipality is simply unaccustomed to detailed reporting and does not have the internal systems or the desire to separate its allocation of resources to various operations. A third reason is that the municipal leadership may see detailed reporting as a political risk, especially because of the high costs of broadband initiatives. There is an understandable desire to avoid second-guessing or criticisms of the government’s decisions. And a fourth reason is that the municipality may be engaging in use of other assets that are effective cross-subsidizations, and may not wish to account for those activities with a specific and regular record of the actual costs associated with the municipality’s investment.

It is not the purpose of this study to assign motives to specific municipal initiatives, but *it appears to be a reasonable and constructive recommendation that better and more regular reporting should occur when a municipality commits to higher-risk businesses such as broadband services. Frequent and truly transparent reports are important for all investors, whether the investment is in the form of securities governed by the Securities and Exchange Commission or in the form of government use of public monies.* The issues involved in reporting and the potential concerns that precipitate summary accounts are reflected in **Figure 2**.

Figure 2: Insufficient municipal financial reporting



Source: Balhoff & Rowe, LLC.

Wireline and/or fiber projects

Table begins with high-level view of some more prominent municipal broadband operations.

A study of the history of municipal broadband initiatives reveals certain common financial characteristics. **Table 10** introduces some of those characteristics, and is included as an initial high-level view of some of the more prominent legacy broadband operations. The table focuses on some financial perspectives such as total capital investment and estimates of free cash flow and capital expenditures per household. The estimates of capital commitments are necessary because many of the municipalities do not report sufficient investment details about their operations, but the communities were consulted and generally indicated that the table is approximately correct. The primary purpose of this snapshot is to set the context for later analyses with a sense of the magnitude of network commitments, capital investments, operating performances and some notions of the challenges that were encountered. Some additional financial details related to certain of these and other communities are also available in Appendix One, which provides more data.

Table 10: Overview of selected municipal operations

| Sponsor | Name of Initiative | Parent Utility Service | Services | Start Date | Total Capital Investment | Estimated Investment/Household* | Annualized Operating Cash per Household Unit (w/o capex) ** | Commentary |
|-----------------|---------------------------------|---|---------------------------------------|--------------|---|------------------------------------|---|--|
| Glasgow, KY | Glasgow EPB | Glasgow Electric Plant Board | Cable in 1989, data and telco | 1989 | Est. \$8 million | \$1,000 | \$100 per sub, excluding interest & capital costs | Purchased local competitor, Comcast, in 2001; subs: 8,000 cable and 1,000 telephone |
| Paragould, AR | City Cable | City Light Water and Cable | Cable in 1991, now telco/data | 1991 | \$10 million | \$1,000 | \$145 per sub, excluding interest & capital costs | Bought only competitor, Cablevision, in 1998; now with 10,092 cable, 552 access lines |
| Harlan, IA | HMU | Harlan Municipal Utilities | Cable TV, data, telephony | 1995 | \$2.7 million | \$1,100/sub (low asset ests.) | 2004 reports \$176/sub due to large exp. cuts | HMU Gas/Electric forgave HMU's \$768,025 debt and loaned new \$400,000 in 2004 |
| Cedar Falls, IA | Cedar Falls Utilities | CFU (electric, gas, water) | Cable TV, high-capacity fiber | 1996 | \$12.5 million | \$1,000 | \$0.30; (\$26.00) per sub w/o refinancing debt | 2003 financial improvement driven by rate increase for 5 services |
| Marietta, GA | FiberNet | Board of Lights and Water | Telecom and data | 1996 | \$35 million for 210 fiber miles | | NA | Sold operations in July 2004 to American Fiber Systems, for \$11 million, or a \$24 million loss |
| Ashland, OR | Ashland Fiber Network (AFN) | City of Ashland Electric Department | Cable TV, cable modem services | 1997 | \$5 million for 9,000 homes | \$555 | 2004 AFN report indicated loss of (\$380) per sub | In 1998, projected positive net income in 2003, but competitor cut rates, and AFN fell 20% short; Council exploring strategic options |
| Tacoma, WA | Click! Network | Tacoma Power | Broadband services started 1997 | July 1998 | Projected \$40 mil., now near \$100 million | \$1,300 | (\$192) per sub in 2003 | 1996 projection of 25% CATV penetration; today at 32% of homes; ops not yet profitable; raised electric rates 50% in 2000 because of Click! |
| Lebanon, OH | Lebanon Telecom Department | City of Lebanon (electric, water, wastewater) | Cable, data, telephone services | 1998 | Projected to be \$6 mil, now \$8.5 million | \$1,500 | Cash flow per sub is negative in 2004 at a rate of \$37 monthly | Rates up each year since 1999; 3,550 CATV subs, 1,950 Internet, and 4,600 phone |
| Scottsboro, AL | Scottsboro Electric Power Board | Scottsboro Electric Power Board | Cable TV, Internet, Data | 1999 | NA | \$1,950/sub | NA | In 1999, competitor cut rates, and the city went to court to prevent cut, alleging Charter's rates were "predatory" |
| Bristol, VA | BVU OptiNet | Bristol Virginia Utilities | Data in 2001; telco, cable, July 2003 | 2001 | \$31 million | \$3,300 | | Alleged BVU cross-subsidizations; BVU adopted a 40% electric rate hike in 2005, after increases in 2004: water (22.4%), sewer (4%), CATV (12%-15%) |
| Kutztown, PA | Hometown Utilicom | Hometown Utilicom (elec, sewer, water) | Voice, video and data services | August 2002 | \$5.8 million | \$2,600, w/o factoring Kutztown U. | NA | Cable competitor, Service Electric Cablevision, dropped prices by 31% in response to Kutztown's initiative; end of 2004, service to 766 customers |
| Braintree, MA | BELD Cable BELD Internet | Braintree Electric Light Department | Cable and Internet services | Feb 2004 | \$5.8 million | \$460 | NA | Because of reinvestment pressures in response to new Comcast digital services, BELD raised 1Q04 cable rates 20%-21% for its various packages |
| Utah cities | UTOPIA | Multiple utilities | Fiber optic services to res/bus | Early phases | \$340 mil. total; phase 1 is \$85 mil. | \$3,500/sub at 60%/homes passed | NA | First of three phases (7/04): (1) connecting metro backbone, (2) pilot to gauge demand, (3) services to 33,000 premises |

* Estimate by Balhoff & Rowe, using total capital invested divided by approximate subscriber totals in the most recently available reports.

** Est. by Balhoff & Rowe, using net cash from cash flow statements if available, or operating income plus depreciation divided by subs; ongoing capex are not generally available.

Source: Balhoff & Rowe, LLC and company reports.

Municipals can contend that they have goals other than financial, but the financial record suggests significant subsidies.

The municipalities that are summarized in the table may correctly contend that the focus is too narrow, and that there are other metrics that should be reflected such as social benefits and reduced municipal costs. Still, the table highlights some of the common financial themes that will be examined more carefully in later sections of this report. First, *fiber* municipal operations are virtually always built on the infrastructure of municipal utility operations. Second, the size of the communities with fiber operations has been relatively small—up to the present. Third, capital investment is generally high—\$1,000 to \$1,500 per line in the table—but ongoing capital expenditures are often not reported, meaning that the table almost certainly understates the capital required to serve a home or business. Fourth, all the operations have negative cash flows except Harlan and Lebanon, but, in those cases, there appear to be large cross-subsidizations that are making those operations appear stronger than they are on a standalone basis. Fifth, even when the free cash flow statistics appear to be trending toward breakeven, they should not be confused with a positive net present value (NPV) as the NPV is uniformly and deeply negative in all cases. Sixth, while recognizing that there may have been socially beneficial accomplishments, it is notable that the municipalities have encountered multiple policy and financial problems—legal challenges, discounted competitive pricing, shortfalls in achieving projected penetration rates, the frequent need to raise utility rates in some cases, and effective financial failure in the cases of certain of the utility operations. Seventh, two of the municipalities in the table absorbed the only other competitor, with the result that there is now one provider that apparently serves the community well in both cases, but is a monopoly just the same.

Select case studies

Seven towns illustrate important financial themes; those communities include four legacy operations and three planned initiatives.

Seven communities have been selected to sharpen some of the financial themes, the first four of which have historical financial data and were included in the summary table above. The last three communities are high-profile build-outs that have attracted elevated levels of interest.

The initial case study is Cedar Falls, Iowa, where there is apparently a relatively well-run network operation. The second is Lebanon, Ohio, which operates a network where there have been losses, but there has been little controversy. The third is Ashland Fiber Network (AFN) in Ashland, Oregon, where various problems have occurred and the municipal leadership is taking corrective action including utilizing a wholesale model. The fourth is OptiNet in Bristol, Virginia where powerful opposition forces came to bear and the overall financial performance has been negative.

The remaining case studies relate to networks that are new or proposed, meaning that there are financial plans but no operating history. The first is the proposed fiber network in Lafayette, Louisiana, a larger community with strong private competitors and a powerful political debate. The second is a fiber-build underway at Utah Telecommunication Open Infrastructure Agency (UTOPIA), which has drawn regular commentary in the press as it is a multi-city commitment. And the final summary commentary relates to the Philadelphia wireless initiative, which includes all the controversial elements related to powerful incumbent presence—the largest U.S. cable provider and one of the two largest local telephone companies in the country—plus a Wi-Fi platform that its sponsors believe will provide cheap and ubiquitous products.

Cedar Falls, Iowa

Cedar Falls Utilities publishes annual reports to its customers, who purchase electric, gas, water, and communications products from the municipality. Established as a municipal utility in 1958, CFU is now the largest municipally-owned four-service utility in Iowa. The utility

serves more than 37,000 people. Since 1996, the town has offered high-speed Internet services and point-to-point connection products to Cedar Falls’ businesses using a fiber optic network. The division also offers cable television services.

Cedar Falls has been offering broadband services since 1996.

CFU’s subsidiary, Cedar Falls Communications, is reported as a segment in the utility’s annual reports, where there is as much financial detail as found in any municipal operation in the country. In 1995, the utility began construction of its fiber-optic network, and customers were first added in early 1996. In 1998, the segment issued general obligation (G.O.) bonds with a face value of \$550,000 at 4.3-4.9 percent and then added two additional tranches of G.O. bonds—Series 1999 for \$555,000 at 4.35-5.15 percent and Series 2002 for \$1,985,000 at 2.5-3.6 percent. In addition, the utility has a Series 1999 capital loan note of \$3,310,000 at 4.6-5.5 percent. The low capital costs are due to the communication segment’s dependence on the value of other utility assets. The segment balance sheet includes \$7.5 million in capital assets at the end of 2003, and \$5.9 million in outstanding long-term debt. Cumulative net free cash at the end of 2004 remained negative at approximately (\$10.5 million). **Table 11** summarizes the segment’s operating information, reflecting a net loss in 2002 and virtually breakeven results in 2003, eight years after construction began, with further improvement in operations in 2004. Notably, the company posted net positive free cash (cash operating income less cash expenses and capital expenditures) of \$2.5 million in 2003, but slipped to negative free cash flow in 2004 of (\$2.7 million). At the same time, annual breakeven in terms of cash flow is not the same as a positive net present value, which is calculated to factor capital investments as well as the prior year losses, combined with future positive cash contributions, all discounted to the present.

Table 11: Summary annual financials for Cedar Falls Utilities, Communications Segment

While the company’s annual free cash flow is close to breakeven, there are financial issues that make it difficult to project that the company will ever achieve positive net present value.

| | 2002 | 2003 | 2004 |
|-----------------------------|-------------|-------------|-------------|
| Revenues | \$5,478,373 | \$6,456,983 | \$7,047,742 |
| Expenses | 4,283,591 | 4,029,102 | 4,727,986 |
| Depreciation | 1,061,133 | 1,042,301 | 1,110,547 |
| Operating inc./loss | 133,649 | 1,385,580 | \$1,209,175 |
| Interest on LT debt | (568,731) | (426,360) | (396,920) |
| Other income | 30,930 | 21,900 | 220,689 |
| Net | (404,152) | 981,120 | 1,032,944 |
| Net cash provided (used) by | | | |
| Operating activities | 1,328,662 | 2,306,116 | 2,421,564 |
| Noncapital financing | 384,196 | (202,417) | (181,779) |
| Capital and related | (2,020,287) | (2,046,868) | 2,213,263 |
| Investing activities | 36,994 | (54,665) | 17,304 |
| Cash at beg of year | 338,906 | 68,471 | 70,637 |
| Cash at end of year | 68,471 | 70,637 | 114,463 |
| Net change in cash | (270,435) | 2,166 | 43,826 |
| Capital expenditures | 688,916 | 806,727 | 1,089,423 |
| Free cash flow | (504,751) | 2,498 | (2,717) |

Source: Balhoff & Rowe, LLC and company reports.

Cedar Falls appears to have performed relatively better than most of, or all, the other municipalities, in part because the company appears to be well-run and has benefited from good commercial growth in its area as well as an affluent population. However, while the company's annual free cash flow is closer to breakeven than the results posted by other municipalities, there are financial issues that make it difficult to project that the company will ever achieve positive net present value, which is troublesome. The financial issues remain that the company is \$10.5 million in the hole, while capital expenditures rose the last two years and operating income was down in 2004 versus 2003. The net result was that positive free cash flow of \$2.5 million in 2003 turned negative by \$2.7 million in 2004. The uncertainties for the future include the level of ongoing capital expenditures, technology shifts as competitors employ wireless services and provide other products that are becoming less expensive, and the potential for slowing top-line growth in a maturing market.

Lebanon, Ohio

Lebanon, OH, has achieved high penetration rates and apparently offers high-quality services, but operating losses persist.

The municipal communications system in Lebanon, Ohio, serves a community with a population of 16,692 and 5,887 households. The municipality offers utility services including water, wastewater, and electric. In 1998, the City of Lebanon started the construction of a \$6 million dollar hybrid-fiber-coax telecommunications network. Since then, the city has offered cable television services, and has entered into partnerships with Cincinnati Bell to provide telephone services, and with GO Concepts, Inc. to support Internet access, including high-speed services. The incumbent local telephone company is Sprint, and the incumbent local cable TV company is Time Warner.

The initial telecommunications funding occurred through utility system reserves and non-taxable municipal bonds. The funding involved loans from the electric and water/sewer utilities plus \$5.02 million in a revenue bond issued in 2001 at 5.26 percent (balance due on 12/05 is \$4.825 million), a \$1 million one-year note issued in 2004 at 2.7 percent, and a \$0.75 million one-year note issued in 2004 at 3 percent.

The city launched its own cable TV service, which achieved a very high 31 percent penetration rate in its first year. The city currently reports that it serves approximately 40 percent share of the potential cable TV market. In October 2001, the city and Cincinnati Bell entered into a five-year contract that established that the city is responsible for customer service, billing, repair, and installation. Cincinnati Bell is responsible for switching and back office functions. All telecommunications services are billed on city utility bills and bundled pricing is available.

Lebanon reports its financials annually. Operating losses for the communications system increased from \$1.1 million in 2002, to \$1.4 million in 2003, and \$2.3 million in 2004. The 2004 operating loss is approximately \$268 per cable subscriber or \$142 per person in the community as summarized in **Table 12**. Including capex, the annual shortfall per cable subscriber is \$443 and the annual shortfall per person is \$234.

Table 12: Summary annual financials for City of Lebanon Telecommunications Division

| | 2002 | 2003 | 2004 |
|---------------------|-------------|-------------|-------------|
| Revenues | \$2,183,584 | \$5,236,416 | \$4,085,342 |
| Expenses | \$1,948,042 | \$5,811,642 | \$4,905,727 |
| Operating inc./loss | (1,108,867) | (1,414,844) | (2,366,148) |
| Cap. expenditures | \$1,344,409 | \$839,618 | \$1,545,763 |
| Subscribers | | | |
| Cable | 7,396 | 8,028 | 8,837 |
| Business | 106 | 123 | 155 |
| Residential | 1,176 | 1,426 | 1,718 |
| Phone Lines | 1,291 | 3,401 | 4,087 |

Source: Balhoff & Rowe, LLC and company reports.

Actual "rates" for services include direct and indirect payments as well as funding costs.

The service provided by the City of Lebanon seems to be relatively high quality and the penetration rates suggest strong community support. In spite of ongoing losses and annual rate increases in other utility services, the municipality has not suffered significantly from criticism or negative press. Still, while the subscriber growth appears to be good and the penetration rate is very high, the operation is not likely to generate a positive net present value based on assumed cash flows over the next ten years. The monthly subsidization in 2004 appears to have been \$37 per household, even without factoring capital costs or other cross-subsidizations (use of personnel or other assets). It should be noted that subsidizations of this kind are choices that a community may make, but the monies must ultimately be paid by ratepayers or taxpayers, some of whom may not subscribe to the communications services. *It is incorrect to assume that the actual "rates" for telecommunications services are those that are nominally paid by consumers if there are in fact losses that cannot be reversed or there are subsidizations from other sources. An honest analysis involves factoring the real costs for the services in question, including direct and indirect payments as well as funding costs.*

AFN provides a high-quality fiber network, and has achieved high penetration rates of nearly 40%, but losses have prompted the town's leadership to evaluate a possible sale.

Ashland Fiber Network

Ashland, Oregon, owns and operates an electric utility through the Ashland Department of Electric Utilities. In the late 1990s, the Department engaged in an evaluation process and determined that a more advanced telecommunications network would enable it to manage its electrical system more effectively and at lower cost. There also appeared to be an opportunity to generate higher revenues for the community through the provision of CATV and data services, as well as the occasion to create a more attractive social environment. The incumbent cable operator was Charter Communications.

Ashland started its buildout of Ashland Fiber Network (AFN) in February 2000, with \$5.2 million that was financed through a bank loan secured by the municipal electric utility. The preliminary estimate was that the capital requirement would be \$6 million, but the network eventually required approximately \$8 million.

AFN reported that it was serving approximately 2,680 subscribers during the last quarter of fiscal year 2001. However, in the 2001 Budget Committee presentation, it was apparent that AFN was not achieving the goals identified in the original business plan. Revenues were well

short of projections, capital requirements exceeded the initial plan, construction was taking longer than anticipated and there were some management problems. As a result, at the request of the Mayor and City Council, the Department's staff selected an advisory committee to help review and revise the business plan for AFN with a goal to develop a reporting format to help keep the Council updated as AFN improved its performance. The City also hired a consultant, Navigant, which submitted operating suggestions that AFN subsequently implemented. While the division has improved, AFN's most recent report to the Ashland City Council on March 15, 2005 reflected the ongoing difficulty in meeting targets. The report is reproduced in the footnote below, as it appeared in the Ashland Council minutes, with emphasis added (bolded items were not highlighted in the original) to point up the ongoing efforts and struggles in meeting financial and operating goals, and the political problems with which Ashland has contended.¹²

¹² AFN Quarterly Report, City Council of Ashland (March 15, 2005), available at <http://www.ashland.or.us/Page.asp?NavID=8294>; the report reads as follows:

"This report covers the period October 1 to December 31, 2004. Staff has revised the current report format to better provide the Council and Mayor with more and improved information. This report contains targets from the revised business plan that was completed as a result of the work done by Navigant Consulting and input from the AFN Advisory Committee. Staff has continued to implement Navigant suggested recommendations during the quarter and also accomplished a TV Tier realignment and rate increase for both CATV and Cable Modem via Council Action on December 21, 2004. AFN staff has implemented the majority of Navigant ideas, but we continue to work on new and different approaches to some of the same initiatives. So far, we have implemented the following ideas in the first half of FY 04-05:

1. Increased rates (Twice-June 2004 & Feb 2005)

2. Began an active TV promotion designed to migrate users to higher tiers of service and to promote pay per view offerings
3. Mailed out coupons for free movies in exchange for customers enabling their pay per view features
4. Added an intermediate cable modem product
5. Enhanced ISP contracts
6. Promoted a customer service guarantee
7. Bundled our CATV product and cable modem product for the return of SOU students
8. Staffed a booth at the SOU Student Orientation Event
9. Worked with SOU and RVTV to provide an AFN exclusive SOU Homecoming Game Broadcast
10. Participated in the Buy in for Books Program in conjunction with the Ashland Schools Foundation
11. Revised the quarterly report format.
12. Met with the AFN Advisory Committee in December 2004.

13. Worked in conjunction with Finance to develop a more accurate AFN revenue model that can be used for cash flow information and operational decisions.

14. Realigned TV Tiers to improve operational efficiencies and to reduce future programming costs.

15. Added a new staff person in AFN to help with technical issues and to provide more support for the programming and marketing functions of AFN. In addition, a new Network Administrator has been added as per the budget and the revised AFN Business Plan. (1.5 FTE)

... **Cable TV numbers for Dec. 31, 2004 stood at 3,209 and showed no growth during the quarter.** The Navigant report projects that by June 30, 2005 as a result of the initiatives, we should have 3,532 CATV subscribers. This means we would have to add 323 or about 54 new customers per month throughout the remainder of the fiscal year. **Since most of the Navigant recommendations that are related to increasing TV customers and have already been implemented; it looks like achieving the CATV numbers in the revised plan is very questionable. Staff has modeled this number at 3,240 at the end of the fiscal year.**

On the Cable modem side, we had 3,718 active accounts on Dec. 31, 2004. The Business plan target with Navigant initiatives for June 30, 2005 is 3,842. This means that 124 new customers or about 21 Cable Modem customers would need to be added each month to meet this goal. Staff feels that achieving 3,740 is a realistic conservative goal to use in modeling revenue for the remainder of the fiscal year.

AFN Financial Narrative:

AFN's cash position is the most important financial comparison we have. It represents the net relationship between resources and requirements and helps us to monitor how AFN is doing. As of December 31 our cash balance had decreased to \$552,000 from the \$640,000 amount provided by the debt refinancing done in August. The key reasons for this reduction are:

- Total revenues are below the original budget (which included projections from the Navigant study).
- Expenses remain high with CATV programming costs higher than anticipated and the City, because of our existing bandwidth contract, was unable to implement a fractional DS3 as soon as hoped resulting in higher costs.

To the credit of the Ashland City Council and of the mayor, the town’s leadership took strong and immediate constructive action to cope with shortfalls. Still, even after restructuring, AFN has found its targets high and the negative cash flows persisting. As a result, in June 2005, the Ashland City Council unanimously agreed to form a task force to investigate options for the Ashland Fiber Network, including a potential sale.¹³ The Council became particularly concerned because the city’s finance department estimated that, even if AFN were to achieve 10 percent annual growth in revenues, the operation would be \$3.8 million short in 2011 when it was time to pay its 15-year \$15.5 million loan that had been assumed by the city in 2004. The local newspaper suggested that, even if the city were to sell AFN today, few experts believe that the sale price would cover the city’s \$15.5 million loan, which has interest-only payments until July 2007.¹⁴ Also of note, in May 2005, the city council voted to subsidize AFN’s deficits using the city’s electric department revenues. In a recent meeting, the Council tabled its decision about whether to raise electric rates.

In **Table 13**, certain of the critical operating data of AFN are summarized, but the full financial data are not available. The table does highlight that, while AFN has fallen short of projections, it has achieved a high estimated penetration rate of the community’s nearly 9,000 households. Still, the operation remains negative in terms of operating cash, while closing the deficit in the most recent six months. It is also important to note that the annual capital expenditures are not reflected in the figures, nor is there any payback on the initial capital investment of approximately \$8 million.

Table 13: Summary annual financials for Ashland Fiber Network

| FY ending 6/30 | 2002 | 2003 | 2004 | Dec 2004 (1H 05) |
|--------------------------------|-------------|-------------|-------------|-------------------------|
| Revenues | \$1,345,369 | \$1,981,359 | \$2,352,632 | \$1,292,198 |
| Expenses | 2,971,027 | 3,547,487 | 3,655,358 | 1,300,515 |
| Operating profit (loss) | (1,625,658) | (1,566,128) | (1,302,726) | (8,317) |
| Subscribers at year end | | | | |
| CATV | 2,499 | 2,961 | 3,100 | 3,209 |
| Est. penetration | 29% | 33% | 34% | 35% |
| ISP | 2,323 | 3,040 | 3,435 | 3,718 |
| Est. penetration | 27% | 34% | 38% | 40% |

It is important to know that cash flow variations are normal (the balance increased to \$593,000 in January) however, the City goal is to build cash each month and year to meet debt service requirements. **Even though cash rebounded in January and the newly adopted rates will impact cash by March, the short and long-term trends for cash are of concern.**

AFN has seen some promising changes in specific revenues and expenses but not enough to offset the two items mentioned above. Examples of promising changes are:

1. Cable modem revenue exceeds budgeted amounts
2. A new contract for service to Ashland Community Hospital has been negotiated
3. Staffing costs are below expectations
4. A change in bandwidth costs will soon be realized
5. Capital outlay for the year is expected to be light

¹³ Ashland Daily Tidings, *Council sets up task force on options for AFN* (June 8, 2005), available at

<http://www.orcities.org/CityData/loc/CitiesInNews/2005/June%202005/060510AshlandTaskforcecreatedforfibernetwork.pdf>

¹⁴ Ibid.

Source: Balhoff & Rowe, LLC and company reports; December 2004 represents actual 6 months' performance.

BVU-OptiNet, Bristol, Virginia

Controversy has surrounded BVU OptiNet, focused on cross-subsidies.

In 2002, Bristol Virginia Utilities (BVU) began offering communications services to its retail customers. In 2003, BVU announced that it was the first public utilities company in the United States to offer fiber-optic “triple play” services—telephony, Internet access and video. The company’s telecommunications competitors are Sprint and the cable operators are Charter, Comcast and Scott County Telephone Company (a local CATV provider).

OptiNet reported that the Virginia SCC ruled that its telephone services were not subsidized. However, the commission suggested there were subsidies related to other services over which the SCC had no jurisdiction.

BVU was able to attract grants to reduce the community’s early capital obligations. In 2003, the Virginia Tobacco Indemnification and Community Revitalization Commission issued grants to BVU OptiNet for a total of \$2.03 million to invest in its fiber-based network, including \$450,000 to lease a fiber optic “backbone” from BVU’s point of presence in Abingdon to Rural Retreat, Virginia, another \$750,000 to deploy fiber inside the town of Abingdon, \$700,000 to be used on last-mile solutions in a joint venture with Cumberland Plateau Planning District, \$100,000 to deploy fiber to businesses in the town of Independence, and \$30,000 to deploy fiber to Mendota. In addition to the grants, OptiNet incurred about \$43 million in long-term debt, including about \$15 million payable to the electric utility over the next twenty years with rates ranging from 3.77 percent to 5.99 percent. The remaining capital funds were generated through revenue and refunding bonds raised at interest rates that vary from 2.0 percent to 5.25 percent at maturities that range from 2007 to 2031. On July 1, 2003, the City of Bristol raised \$27.49 million in capital for OptiNet as 54 percent of the city’s \$50.8 million Series 2003 revenue and refunding bond issuance.

OptiNet was challenged from the time it began offering services on the grounds of cross-subsidizations, anti-competitive policies, and financial shortfalls. The legal battles began in 2002, when the local telephone provider, Sprint, filed a complaint concerning predatory or below-cost pricing. As a result, BVU was required to submit cost studies to the Virginia State Corporation Commission (SCC), which is the state’s public service agency. In December 2004, a report from a SCC’s Hearing Examiner, according to OptiNet, cleared Bristol Virginia Utilities of allegations that the unit subsidized its telephone service with income from its other operations, and the ruling was upheld by the state commission in February 2005.¹⁵

OptiNet was correct in the precise terms that it used to describe the outcome. However, the SCC’s Order and the Report of the Hearing Examiner highlight a narrower ruling. Sprint’s claims of cross-subsidization were limited when the Virginia State Corporation Commission determined that it had jurisdiction only to evaluate the basic telephone rates of OptiNet. The SCC then chose to evaluate the rates on the basis of whether those rates, including the bundled rates were *below cost*.

The proceeding makes for interesting reading. The Commission finally ruled on February 25, 2005, that OptiNet in its entirety was being cross-subsidized, stating “This IRRE is below the 11% imputed above, which is an indication that Bristol is not covering the incremental costs of, and not earning its cost of capital on, jointly-provided telephone, data, and cable television services offered via OptiNet.”¹⁶ The

¹⁵ Joe Geragjety, *State Report Favors Utility* (December 4, 2004) Bristol Herald Courier, available at <http://www.sullivan-county.com/id3/sprint.htm>. See also http://go.bvub.com/docs/BVU_Feb_25_2005.htm.

¹⁶ Commonwealth of Virginia, State Corporation Commission, *Final Order, Petition of United Telephone-Southeast, Inc.*, Case No. PUC-2002-00231, p. 13.

Commission continued, “[t]hus Sprint asserts that ‘[i]f OptiNet as a whole is being subsidized but OptiNet’s telephone service is not, then by definition OptiNet’s cable television and/or high-speed data must be priced below cost.’ However, the Commission has no authority to enforce § 15.2-2108.11 of the Code, as Sprint does not show where the Commission is given any authority over pricing standards applicable to cable television and/or high-speed data. Accordingly, we will not address those claims.”¹⁷ Further, the determination that the local telephone service was not proven to be subsidized was based on various assumptions that the commission’s staff conceded were “informed estimates” – or “generous” in terms of the way a public investor would view the operation. Those estimates included the use of a 20-year model discounted with a cost of equity set at 11 percent, which was peculiarly below Verizon’s 14.37 percent rate cited in the SCC’s Order.¹⁸ On the specific issue of the cross-subsidization, the Hearing Examiner also stated that he agreed that Bristol’s rates for stand-alone telephone service were below Bristol’s costs, but that Bristol was to reset its rates to reflect what its pricing would have been if it were reselling Sprint’s services, which was a rate that was below Bristol’s actual costs.¹⁹ In short, the ruling of the Hearing Examiner and of the SCC are narrow considerations of whether there were proven cross-subsidies that benefit the stand-alone telephone service, despite its findings that OptiNet in its entirety was being cross-subsidized. Sprint’s arguments were deemed insufficient on the narrow question.

OptiNet continues to report significant operating losses.

OptiNet’s financials are included in those of the parent utility, BVU, which has a fiscal year ending June 30. The summary financials are included in **Table 14**, which reflect expanding losses, at least in the early stage of the operations. Several points might be made in reviewing the figures. First, the operating cash flows remain negative (not to be confused with the cash flow statement). In 2003, the operating cash report reflects a positive contribution of \$4.2 million from operating activities, but this was due to an interfund receipt of \$5.4 million (monies assigned by other utility operations of BVU). In 2004, the operating cash report reflects a negative contribution of (\$1.5 million), but there was again another capital interfund receipt of \$3.0 million. Second, OptiNet reports that its 2003 legal fees associated with the challenges of Charter and Sprint were \$625,000. Third, net income continues to be negative (\$4.4 million) in 2003 and (\$3.3 million) in 2004. The fiscal year for 2005 ends on June 30, but the auditors’ report will not be available until December, so the most recent information is not available. However, the pro forma projections for 2005 point to negative net income of (\$2.2 million). Fourth, it is difficult seeing how OptiNet will generate a positive net present value, based on the financial information available in these reports even assuming favorable trends. More detail is included in the first appendix.

¹⁷ Ibid., pp. 19-20.

¹⁸ *Report of Alexander F. Skirpan, Jr., Hearing Examiner*, Case No. PUC-2002-00231 (November 30, 2004) Commonwealth of Virginia State Corporation Commission, p. 51.

¹⁹ Ibid., p. 42; “I agree that Bristol’s tariffed rates for such services are below Bristol’s cost. Bristol tariff prices are the same as the rates found in Sprint’s tariff. However, if Bristol were to purchase these services on a resale basis from Sprint, Bristol would be charged the tariffed price, less a 10.41% resale discount, plus the federal SLC. As Sprint demonstrates, the 10.41% resale discount is less than the federal SLC. Thus, Bristol’s tariff does not cover the total cost it pays to purchase the service from Sprint. In addition, Bristol does not appear to make any provision for the direct costs associated with a customer, such as billing. Therefore, I find that Bristol should be directed to file new rates and a cost study supporting that those rates cover the cost of service resold from Sprint.”

Table 14: Summary annual financials for BVU-OptiNet

| (000s, FY end 6/30) | 2003 | 2004 |
|------------------------------------|-----------------|----------------|
| Revenues | 754 | 4,654 |
| Expenses | 2,468 | 4,729 |
| Depreciation & amort. | 1,409 | 1,736 |
| Operating inc./loss | (3,123) | (1,811) |
| Interest on LT debt | (1,392) | (1,603) |
| Other income | 102 | 94 |
| Net | (4,414) | (3,320) |
| Net cash provided (used) by | | |
| Operating activities | 4,201 | (1,485) |
| Noncapital financing | - | (272) |
| Capital and related | (17,091) | 3,784 |
| Investing activities | 102 | (2,704) |
| Cash at beg of year | 13,582 | 794 |
| Cash at end of year | 794 | 117 |
| Net change in cash | (12,789) | (677) |
| Long-term debt | 27,523 | 42,440 |
| Capital assets | 22,920 | 31,141 |
| Total assets | 25,895 | 37,996 |

Source: Balhoff & Rowe, LLC and company reports.

In summary, OptiNet is a fiber-based operation which appears to have growth in its operations, significantly driven by lower rates for its services compared with its cable and telephony competitors. While the legal issues related to cross-subsidizations appear behind the company, the financials continue to highlight that the municipality is supporting a telecommunications service which is generating operating losses with capital commitments that have already mounted to more than \$31 million. There is no study, to this point, on whether those kinds of “contributions” or subsidies generate a quantifiable offsetting benefit, particularly in a community with alternative service providers. Still, it should be noted that the negative cash position in terms of capital investment and ongoing losses appears daunting and the ratepayers or the taxpayers will almost certainly be affected.

UTOPIA, Utah

The first illustration of a “new” initiative is the multi-city fiber commitment in Utah.

Up to this point, the brief municipal summaries in this report have focused on operations with a financial history. The remaining three sketches cast light on “developing initiatives” that do not yet have financial histories, but are important new kinds of commitments by municipalities.

The first of the new developments is represented by Utah Telecommunication Open Infrastructure Agency that began as a joint initiative of eighteen Utah municipalities—now reduced to fourteen—to build a community-owned fiber-optic network. The initiative is different from

the cases noted earlier as the operation is a multi-city fiber build. UTOPIA’s member cities are Brigham City, Cedar City, Cedar Hills, Centerville, Layton, Lindon, Midvale, Murray, Orem, Payson, Perry, Riverton, Tremonton, West Valley City. The cities dropping out of the initiative were Roy, Salt Lake City, South Jordan, and Taylorsville. Project leaders note that additional cities will be able to apply for membership after the network is up and operating successfully.

Capex – without electronics – is projected to be \$1,171 per premise.

The capital build-out is outlined in **Table 15** which indicates three phases and the project’s expectations regarding relatively high capital costs, excluding electronics, per household. The high cost is notable particularly in light of the fact that about 52% of the premises will be served by aerial fiber (aerial plant generally lowers capital expenses), and the estimate of \$1,171 does not include electronics that might bring total capital cost per household, by the authors’ estimates, to \$1500 to \$1700. There will be more commentary on capital costs in Chapter 4 which contrasts fiber and wireless financial profiles.

Table 15: Capital investment plan for UTOPIA

| <i>Outside plant totals per city (excluding electronics)</i> | Construction phase | Residents | Businesses | Total feet of fiber | % Aerial | # Households per mile | Investment/ Household |
|--|--------------------|-----------|------------|---------------------|----------|-----------------------|-----------------------|
| West Valley City | Phase I | 108,896 | 3,906 | 2,969,374 | 44% | 91 | \$1,305 |
| Orem | Phase I | 84,324 | 2,838 | 2,000,258 | 37% | 85 | \$1,368 |
| Murray | Phase I | 34,024 | 2,577 | 861,590 | 56% | 127 | \$909 |
| Midvale | Phase I | 27,029 | 1,601 | 766,268 | 72% | 129 | \$858 |
| Payson | Phase I | 12,716 | 371 | 432,888 | 77% | 91 | \$1,023 |
| Lindon | Phase I | 8,363 | 527 | 290,384 | 42% | 44 | \$2,196 |
| Layton | Phase II | 58,474 | 2,435 | 1,578,346 | 34% | 88 | \$1,380 |
| Brigham City | Phase II | 17,411 | 494 | 564,917 | 86% | 89 | \$883 |
| Centerville | Phase II | 14,585 | 269 | 391,044 | 35% | 106 | \$1,200 |
| Tremonton | Phase II | 5,592 | 369 | 429,091 | 60% | 47 | \$1,994 |
| Perry | Phase II | 2,383 | 51 | 144,787 | 100% | 29 | \$1,818 |

Source: UTOPIA plan.

The fourteen Utah cities have formed an interlocal agency based on an Interlocal Cooperative Agreement to administer their intercity project, issue bonds to fund the build-out, collect fees from private service providers, direct the use of the proceeds, and eventually retire the debt. The operation is intended to be funded without use of taxpayer monies, according to the planners. And, while communities will own the network, the local governments do not plan to build, operate, or provide the services that run across the system. Private contractors are expected to build the network, and private companies are to supply the voice, video, data, Internet, and entertainment services over the network.

Business plan is premised on 50% penetration.

UTOPIA is initially constructing its fiber operations in six communities based on feasibility studies conducted by DynamicCity Metronet and Dean & Company Strategy Consultants.²⁰ MSTAR was the initial private company to launch telecommunications service in UTOPIA cities on March 8, 2005. The process is still in a very early stage, but **Table 16** details the cities’ expectations for revenue and operating expense by

²⁰ Various documents and descriptions, including the feasibility study, are available at <http://www.utopianet.org>.

year 7, and the first five years of subscriber growth, which projects that UTOPIA will achieve a total 50% market share of targeted subscribers by year 5. The plan therefore assumes that the initiative will achieve as much share as all the other competitors combined, based on the utility’s superior plant.

Table 16: Summary projections related to UTOPIA in Utah

| | |
|--|------------|
| Investment per household passed | \$1,171 |
| Total potential subscribers | 286,000 |
| Assumed take rates (10 years) | 55% |
| Wholesale revenue estimated monthly per sub (year 7) | \$61 |
| Operating expense estimated monthly per sub (year 7) | \$43 |
| Total bond | \$543 M |
| Assumed interest rate/term | 6%/20 year |
| Cumulative cash flow (year 10) | \$98 M |

| Subscriber projections (000) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|------------------------------|--------|--------|--------|--------|--------|
| Market | 47 | 99 | 141 | 142 | 142 |
| Residential | 8 | 33 | 56 | 64 | 66 |
| Business | 2 | 6 | 9 | 10 | 10.5 |

Source: Balhoff & Rowe, LLC and UTOPIA feasibility study.

Not surprisingly, the project has attracted opposition from citizens and potential competitors.²¹ Salt Lake City pulled out of the undertaking in 2004, indicating that it was reluctant to commit taxpayer dollars.²² And some think-tanks wryly suggested that the competitors should not be opposed since they will be able to buy the network in several years at “ten cents on a dollar,” a fate similar to what other telecom providers have accomplished in places such as Sacramento, California, where SureWest purchased for \$15 million the private-equity-sponsored fiber operation (not previously owned by a government organization) that cost nearly \$250 million.²³

Legal challenges have already begun.

The legal push-backs have also begun. In June 2005, Qwest filed a lawsuit against UTOPIA’s Riverton, claiming that the city was assigning its conduit free of charge to UTOPIA, thereby “taking advantage of its status as a governmental agency – which is exempt from sales and property taxes – to allow its contractors, including AT&T, to provide telecommunications services at below-market prices while Qwest has no such option.”²⁴ The lawsuit also asserts that UTOPIA has misused its governmental rights by attaching facilities to Qwest’s utility poles without gaining the appropriate permissions. Finally, Qwest alleges that UTOPIA failed to meet certain clearance standards for separation

²¹ See Marguerite Reardon, *Quest for UTOPIA Hits a Roadblock* CNET (April 2004), available at http://news.com.com/Quest+for+Utopia+hits+a+roadblock/2100-1034_3-5193926.html; Trevor’s Weblog, *UTOPIA: Utah Cities Building Their Own Broadband Network*, available at <http://www.trevmeister.us/blog/archives/000012.html>.

²² Ben Fulton, *Risk and Fiber*, Salt Lake City Weekly (April 8, 2004).

²³ Fiber Optics Weekly Update, *City-owned fiber optics a mixed success* (September 2004), available at http://www.findarticles.com/p/articles/mi_m0NVN/is_36_24/ai_n6355179.

²⁴ Doug Smeath, *Qwest is suing UTOPIA*, Deseretnews.com (June 2, 2005), available at <http://deseretnews.com/dn/view/0,1249,600138445,00.html>.

from existing power facilities, while leaving poles in unsafe conditions that put Qwest technicians at risk and failed to protect poles' structural integrity.

The UTOPIA project, therefore, represents an aggressive and apparently high-cost project that is premised on high penetration rates, with a payback period that is likely to run 10 years or more, if the build-out approaches the projections. If the project is successful, the communities will likely continue to provide some subsidy in wholesaling the network for the foreseeable future.

Lafayette, Louisiana

Lafayette, LA, won a vote to raise up to \$125 million to offer broadband services in competition with two large incumbent providers and several smaller competitors.

Lafayette Utilities System (LUS) is a department of the Lafayette Consolidated Government. The utility employs about 400 people in supplying electric, water and wastewater services for a southwestern Louisiana community of about 190,000 people. Over the last year, LUS has raised a firestorm of criticism and galvanized political support regarding a proposal to serve 110,000 of its customers with communications services using a new fiber network. Most recently, on July 16, 2005, LUS won a vote to issue up to \$125 million in bonds to build an all-fiber network that is to support low-cost phone, cable and high-speed Internet services for the homes and businesses in the community.²⁵ Approximately 62% of the voters (12,481 favorable votes) approved the funding.

The opponents to the LUS project have focused on the fact that the city already has extensive broadband services provided by two large telecommunications carriers, BellSouth and Cox Communications, and several smaller competitors. The understandable concerns are that the municipality might use its anti-competitive advantages to cross-subsidize the proposed fiber operations and create an uneconomic environment for competition.

The controversy has been unfolding for several years, and crossed a threshold on October 18, 2004, when CCG Consulting delivered its 33-page Feasibility Study Report. The document was submitted to the Lafayette Consolidated Government to clarify the financial outlook for the proposed new services. Then, in April 2005, the Lafayette Consolidated Government accepted an "Engineering and Economic Feasibility Report Dated March 22, 2005" for LUS' upgrade.²⁶ In the first plan (October) proposed by CCG, the consultant outlined its view that the communications facilities could be financed from utility revenue bonds and a utility loan that was expected to total \$110.5 million. By the time of the July 2005 vote, the funding expanded to as much as \$125 million. The current proposal is that LUS will finance all or part of the communications facilities from the operations of the commercial plant and possibly from a secondary or subordinate pledge to the revenues of the Utilities System.

Projected balance sheet and income statements appear "optimistic" or even "aggressive."

A review of the CCG proposal raises more questions. The income and balance sheets reflect relatively simple and probably unrealistic estimates. For example, the projected annual balance sheet from 2007 through 2029 provides estimates that do not change for about 20 years in any of the annual models for inventories (\$2 million), vehicles (\$390,000), tools and equipment (\$130,000), buildings (\$1.3 million), computers (\$200,000) and other line items. Cable TV assets rise from \$3 million in 2007 to only \$7 million in 2029, while FTTH (fiber-to-the-

²⁵ LUS Fiber Bonds Win by Big Margin, The Daily Advertiser (July 16, 2005), available at <http://www.theadvertiser.com/apps/pbcs.dll/article?AID=/20050716/NEWS01/50716005&SearchID=73214860985943>; see also, the LUS "Fiber for the Future" website available at <http://www.lus.org/site184.php>.

²⁶ Lafayette City-Parish Council, Resolution No. R-031-2005 (April 5, 2005), available at <http://www.lafayettela.gov/pdf/Council/Agenda/040505/Council/Special/LPUA/R-031-2005.pdf>.

home) equipment rises from \$22 million to \$56 million in the same period (likely far short of what would be required), and the fiber backbone asset expands from \$46 million in 2007 to \$47 million in the terminal year. The EBITDA (earnings before interest, taxes, depreciation and amortization) margins in the model rise to extraordinarily high levels of 52 percent by 2009 and then remain in the mid-50 percent range throughout the remainder of the model—figures that suggest monopoly retail rates, which are aggressive. The subscriber growth and penetration rates are also likely too optimistic, as reflected in **Table 17**, where the residential penetration rate for telephone customers and cable customers is modeled impractically to be the same each year, and where the annualized growth in households and businesses is 2.0% (an acceptable simplification), but growth in share expands to a steady-state of 50%, presumptively leaving the remainder of the market to the several other carriers that will have to supply scale-based services to niche elements of the region. The model appears to lack precision, at least in this iteration.

Table 17: CCG penetration forecast for Lafayette fiber build

| | Households | Telephone | | Cable TV | | Internet | |
|---------|------------|-----------|-------------|-----------|-------------|-----------|-------------|
| | | Customers | Penetration | Customers | Penetration | Customers | Penetration |
| 2005 | 45,000 | | | | | | |
| 2006 | 45,900 | 3,213 | 7.0% | 3,213 | 7.0% | 1,607 | 3.5% |
| 2007 | 46,818 | 10,862 | 23.2% | 10,862 | 23.2% | 5,665 | 12.1% |
| 2008 | 47,754 | 18,338 | 38.4% | 18,385 | 38.5% | 9,742 | 20.4% |
| 2009 | 48,709 | 24,355 | 50.0% | 24,355 | 50.0% | 13,200 | 27.1% |
| 2010 | 49,684 | 24,842 | 50.0% | 24,842 | 50.0% | 13,740 | 27.7% |
| 2011 | 50,677 | 25,339 | 50.0% | 25,339 | 50.0% | 14,296 | 28.2% |
| 2012 | 51,691 | 25,845 | 50.0% | 25,845 | 50.0% | 14,869 | 28.8% |
| | | | | | | | |
| 2027 | 69,569 | 34,785 | 50.0% | 34,785 | 50.0% | 25,803 | 37.1% |
| 2028 | 70,960 | 35,480 | 50.0% | 35,480 | 50.0% | 26,713 | 37.6% |
| 2029 | 72,380 | 36,190 | 50.0% | 36,190 | 50.0% | 27,649 | 38.2% |

| | Businesses | Telephone | | Cable TV | | Internet | |
|---------|------------|-----------|-------------|-----------|-------------|-----------|-------------|
| | | Customers | Penetration | Customers | Penetration | Customers | Penetration |
| 2005 | 5,000 | | | | | | |
| 2006 | 5,100 | 158 | 3.1% | 51 | 1.0% | 82 | 1.6% |
| 2007 | 5,202 | 536 | 10.3% | 99 | 1.9% | 281 | 5.4% |
| 2008 | 5,306 | 891 | 16.8% | 127 | 2.4% | 478 | 9.0% |
| 2009 | 5,412 | 1,234 | 22.8% | 157 | 2.9% | 671 | 12.4% |
| 2010 | 5,520 | 1,557 | 28.2% | 188 | 3.4% | 861 | 15.6% |
| 2011 | 5,631 | 1,695 | 30.1% | 214 | 3.8% | 957 | 17.0% |
| 2012 | 5,743 | 1,826 | 31.8% | 247 | 4.3% | 1,051 | 18.3% |
| | | | | | | | |
| 2027 | 7,730 | 3,571 | 46.2% | 889 | 11.5% | 2,651 | 34.3% |
| 2028 | 7,884 | 3,682 | 46.7% | 938 | 11.9% | 2,767 | 35.1% |
| 2029 | 8,042 | 3,788 | 47.1% | 997 | 12.4% | 2,887 | 35.9% |

Source: Balhoff & Rowe, LLC and CCG Feasibility Study.

The summary of CCG's operating model is outlined in **Table 18**, with a modest revenue level in 2005 when the utility does not expect to be marketing its full range of services. Revenues rise sharply thereafter. To better understand the model, Balhoff & Rowe prepared a cash flow statement using CCG's operating inputs. The fundamental conclusions are that CCG is projecting rapid growth through 2009, after which market share gains are assumed to reach equilibrium and the EBITDA margins level off at slightly above 50%, after being negative in the first two years and positive in year three. The negative consolidated cash flows are expected to continue, in the CCG formulation of the model, until about 2010, which is approximately five years after the initial deployment, again assuming that penetration rates, pricing and a host of other factors go according to plan. By that time, the CCG model assumes 50% penetration rates and 52% EBITDA margins that will carry the enterprise into positive operating cash flows.

Table 18: Summary of Lafayette financial model (CCG)

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2029 |
|----------------------------|----------|----------|----------|----------|----------|--------|
| Revenues | | | | | | |
| Telephone | | 403 | 3,574 | 6,914 | 9,314 | 18,326 |
| Data | | 141 | 1,535 | 3,257 | 4,857 | 12,380 |
| Cable TV | | 344 | 3,803 | 7,989 | 12,591 | 30,070 |
| Wholesale | 1,048 | 1,296 | 1,577 | 2,117 | 2,756 | 9,052 |
| Bad debt | | (12) | (127) | (265) | (394) | (901) |
| Operating revenues | 1,048 | 2,172 | 10,362 | 20,012 | 29,124 | - |
| Expenses | | | | | | |
| Cost of goods sold | - | 171 | 1,798 | 3,856 | 5,834 | 18,358 |
| Operations | 666 | 2,711 | 3,697 | 3,699 | 3,744 | 4,822 |
| Sales & marketing | 270 | 484 | 505 | 409 | 363 | 493 |
| Customer service | - | 406 | 742 | 892 | 1,003 | 2,158 |
| Administration | 1,119 | 1,646 | 1,691 | 2,408 | 2,979 | 6,233 |
| EBITDA | (1,007) | (3,246) | 1,929 | 8,748 | 15,201 | - |
| EBITDA margin | -96.1% | -149.4% | 18.6% | 43.7% | 52.2% | 53.5% |
| Deprec. & amortiz. | 351 | 3,844 | 6,862 | 8,588 | 9,991 | 6,094 |
| Interest exp-bond | | | | 4,640 | 5,211 | 240 |
| Int exp-utility loan | | | | 388 | 380 | 83 |
| ILOT & taxes | | | | | | |
| Net income | (1,358) | (7,090) | (4,933) | (4,868) | (381) | - |
| Cash flow statement | | | | | | |
| Operating | (892) | (3,139) | 1,546 | 3,152 | 9,610 | - |
| Financing | 110,535 | | | | | |
| Investing | (19,947) | (48,128) | (16,018) | (15,926) | (13,287) | |
| Cash at beg | - | 89,696 | 38,429 | 23,957 | 11,183 | |
| Cash at end | 89,696 | 38,429 | 23,957 | 11,183 | 7,506 | |
| Net change | 89,696 | (51,267) | (14,472) | (12,774) | (3,677) | - |

Source: Balhoff & Rowe, LLC and CCG Feasibility Study.

Municipal leadership should attempt to calculate the underlying subsidy (public obligation) per month.

An important issue is raised here, as in other municipal models. There is the potential for an implicit subsidy per household in this initiative and other municipal commitments. For example, using CCG’s estimations, it is possible to calculate the proposed subsidization associated with this fiber build. If the models prepared by CCG are correct (and they appear optimistic to Balhoff & Rowe), the net cash flows can be computed over the twenty-five year period on the basis of CCG’s net operating cash less capital expenditures (excluding financing costs). The total number of residential subscribers can also be calculated, assuming that the telephony subs reside in the same households as the cable subscribers (assuming the 50% penetration level). Using those figures, the net present value divided by total number of telephone customers yields a per-household subsidy estimate that is discounted to the present, depending on what the reader believes is the appropriate rate for cost of capital. The summary results are found in **Table 19** which suggests that the 25-year cash flows generate a positive contribution if the cost of capital is 4% or a negative present value of \$1.18 million if the cost of capital is assumed to be 5%, which, in that case results in an annual subsidization of \$1.79 per household or a monthly subsidization of \$0.15. If the cost of capital were set at 11.0%, consistent with that assigned in the OptiNet proceeding by the Virginia State Corporation Commission, the monthly subsidization would be closer to \$6.50 per subscriber. It should be noted that this is a crude estimation because it assumes that CCG’s model is correct, that the households bundle services with the core service being telephony (cable subscribers are often more difficult to win because of combinations of content packages), and that the value is properly captured in the estimated twenty-five year life (it becomes more tenuous to model telecommunications even five years out.) The upshot is that the taxpayers or ratepayers will have to assume some responsibility for rates that are subsidized monthly, possibly at levels well in excess of \$7 if the municipality falls short of its plan to achieve high penetration and high margins.

Table 19: Calculation of the annual and monthly subsidy on the basis of net present value

| Assumed cost of capital | 4.0% | 5.0% | 6.0% | 7.0% | 8.0% | 9.0% | 10.0% |
|--|-----------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Number of years | 25 | | | | | | |
| Total estimated residential subs over 25 years | 660,358 | | | | | | |
| Net present value | \$15,359 | (\$1,180) | (\$14,528) | (\$25,294) | (\$33,968) | (\$40,940) | (\$46,525) |
| Annual subsidization (NPV/subs) | \$ 23.26 | \$ (1.79) | \$ (22.00) | \$ (38.30) | \$ (51.44) | \$ (62.00) | \$ (70.45) |
| Monthly subsidization (annual/12) | \$ 1.94 | \$ (0.15) | \$ (1.83) | \$ (3.19) | \$ (4.29) | \$ (5.17) | \$ (5.87) |

Source: Balhoff & Rowe, LLC and CCG Feasibility Study.

The Lafayette proposal assumes that LUS will gain a market share equal to that of all the other providers combined, but there will remain a subsidy obligation.

The cost of capital for this project alone is probably closer to 10 percent to 13 percent in light of the risks of such a project, but LUS may be able to attract a lower “cost” in effectively using its other utility assets and operations to gain a lower “blended” rate. It is the view of the authors that the nominal interest rate achieved through blending LUS’ fiber and legacy assets could be represented as a cross-subsidization since it misrepresents the real capital costs of the fiber project alone. Returning to the subject of the table above, *the real value of this exercise is not so much to assign the specific dollar-value of the estimates for Lafayette as much as it is to introduce a methodology that points to the importance of calculating the underlying costs.* Alternative methods may prove more accurate, but it is probably misleading to state that customers will get services at a 20% discount to the rates prevalent in mid-2004, which is the claim in this case. Further, competitive retail rates will likely fall (reducing or eliminating the 20% discount), penetrations of the customer base may be high (or, less likely, low), alternative technologies may prove more compelling (e.g., high-speed mobile wireless services), and customer response may be even more determined by bundles of products offered by competitors (such as an integrated wireless/wireline/video product set). At the very least, there are important sensitivities in the municipality’s model and there are real costs that could be associated with ratepayers’ or taxpayers’ subsidies.

Notably, the assumed penetration rate in this case is higher than the 40% penetration rate achieved in Lebanon, Ohio, but in Lebanon, the competitive forces were not as significant as in Lafayette (meaning that Lafayette is likely to be well below its 50% target) and the cross-subsidization appears to have been higher in Lebanon, compared with what Lafayette is proposing.

In short, it appears that the Lafayette proposal assumes that the utility will gain a dominant share of the market, equal to all other providers' share combined. While fiber services are attractive and are likely to be better suited to the changing marketplace, the capital investment costs remain high at present and the risks are significant that there will be significant public subsidizations that are not at first apparent.

Philadelphia, Pennsylvania

In April of 2005, Philadelphia officials revealed a plan to cover 135 square miles with a wireless service based on Wi-Fi technologies (wireless fidelity) that transmit short-range broadband over unlicensed spectrum. Certain city leaders suggested that the "network will attract tourists and businesses, while providing affordable broadband access to underprivileged residents."²⁷ The preliminary indications are that the monthly retail rate could be as low as \$20 a month, or a 33 percent discount to the service offered by Verizon Communications' current rate of \$30, but there are indications that Verizon plans to drop its rate to a level closer to SBC's \$15 plan.

Wireless Philadelphia proposes to cover 135 square miles with 1 Mbps Wi-Fi services and 99.9% reliability.

The city's plan calls for a service that supports an average of 1 megabyte symmetric broadband services using 802.11b and 802.11g and a reliability target of 99.9%. The city believes that the initial capital expenditures will be low, about \$10 million, while other observers have suggested a figure of more than three times that level.²⁸ The partners in the initiative are projected to be coordinated by Wireless Philadelphia, LLC, which is responsible for financing and overseeing network. The other major partners will be an infrastructure builder and operator, various ISPs that will market and resell the network and provide support, and the city which will serve as an anchor tenant. The plan proposes to provide monthly wholesale access at \$9 per subscriber to the ISPs and achieve a target penetration of 13% in the initial year.

A summary outline of the Philadelphia "Business Plan" permits some insight into the initiative. **Figure 3** graphically illustrates the nine sections of the 72-page report, with bullets that summarize the content in each section, followed by a brief critique. There are several points that might be made. *First, the plan provides more of a rationale for the project, rather than a focus on detailed needs, objectives or opportunities, making it difficult to analyze the "investment" issues.* The motivation cited at the outset is that the *city must embrace such a network* (1) to "remain a competitive location for businesses," (2) to "support the delivery of public services," and (3) to implement an "essential element of a long-term strategy to invest in the human capital of the City."²⁹ The stakeholder analyses are very brief, referring to (1) a single survey sent to 60 schools about computer usage, (2) focus groups that evaluated general topics about social goals, opinions about whether provision of such a service is the city's proper role, and (3) ideas about how the network might impact different stakeholder groups.³⁰ The requirements analysis is a series of principles regarding costs, the need for a clear technology roadmap, the importance of bandwidth and throughput, high quality

²⁷ The Wireless Philadelphia Executive Committee, *Wireless Philadelphia Business Plan* (9 February 2005) available at <http://www.phila.gov/wireless/pdfs/Wireless-Philadelphia-Business-Plan-040305-1245pm.pdf>. See, also, Jim Hu and Marguerite Reardon, "Cities brace for broadband war," May 2, 2005, Political Connections of News.com at http://news.com.com/Cities+brace+for+broadband+war/2009-1034_3-5680305.html?tag=nl.

²⁸ JupiterResearch released a report in June, indicating that it estimates \$150,000 in capital expenditures cost per square mile for mesh Wi-Fi networks, with Corpus Christi's Wi-Fi capex per mile nearly \$300,000; Philadelphia was estimating \$74,000 per square mile, meaning that the number could double or quadruple if JupiterResearch's data points are correct; see *Municipal Wireless*, JupiterResearch (June 14, 2005), esp. pp. 6 and 16.

²⁹ Wireless Philadelphia Business Plan, p. 10.

³⁰ *Ibid.*, pp. 20-21.

of service, increased value-added applications, and security and roaming.³¹ The financial model is a five-year summary of revenues and cash-flow/subscriber projections, without detail on expenses, sensitivities, support, capital costs or other factors.³² The marketing and communications “plan” is a single-page commentary on how the community might better recognize the value of the network-build, rather than how the services are to be marketed successfully.³³ More simply stated, for persons that want to understand the probabilities of success or for people that generally read financial prospectuses, this document proves frustrating and sketchy.

For persons that want to understand the probabilities of success or for people that generally read financial prospectuses, this document proves frustrating and sketchy.

Figure 3: Summary of Wireless Philadelphia business plan

| Business plan section | Summary | Critique |
|----------------------------------|--|--|
| 1. Profile of City | <ul style="list-style-type: none"> International port, almost 50 colleges/universities, important history 135 square miles \$1.5 million residents, 590k households, racial/financial demographics | One page summary with few statistics, no business-plan insights and no market segmentation |
| 2. Stakeholder Analysis | <ul style="list-style-type: none"> Focus groups with 110 individuals and surveys of schools and town hall Questions about impact of technology, citizens' vision of citywide wireless, should the city make investment, impact of network on stakeholders | Six pages describing general information about “soft” opinion data derived from focus groups, a survey sent to 60 schools regarding computer usage, and a town hall meeting |
| 3. Requirements Analysis | <ul style="list-style-type: none"> Summary discussions of fixed wireless, nomadic, portable and mobile Summary and non-quantitative remarks on importance of low costs, network with a future, bandwidth of average 1 Mbps, quality of service, etc. | Five pages that generically describe the difference in usage related to fixed/nomadic/portable/mobile wireless and difference in use by government, residential, business, etc. |
| 4. Business Model Analysis | <ul style="list-style-type: none"> Several-line descriptions of potential business models, including city funding, private consortia, cooperative wholesale, public utility, non-profit Recommendation of hybrid—non-profit and cooperative wholesale | Seven pages on the merits of a cooperative wholesale model and the nonprofit model vs. public community, private consortium, public utility (no analysis of private enterprise) |
| 5. Financial Model | <ul style="list-style-type: none"> Best-effort 1 Mbps symmetric, non-profit wholesale citywide wireless Capital expenditures of \$10 million to pass 560k homes over 5 years Brief statistics on rates, subscribers, and possible cash flows over 5 years | Six pages with general comments on assumptions, one set of capex figures (\$10 mil), unspecified opex, and social goals—education, 25 minority training sessions, and nonprofit plans |
| 6. Marketing/Communication | <ul style="list-style-type: none"> One page on soliciting support for wireless project, gaining public buy-in and educating the citizens of Philadelphia [presented in that sequence] | One page on marketing to the community, not the services, but how to gain support for network construction |
| 7. Political/Regulatory Analysis | <ul style="list-style-type: none"> National landscape—president supports universal broadband access, and FCC sees wireless as “having potential . . . to accelerate broadband” State and local—more than 31 cities have deployed wireless broadband Pennsylvania House Bill 30 limits; but Verizon waived statutory right | Three pages that highlight comments from the president and from the FCC on universal broadband (without addressing legal or policy matters); Verizon’s compromise is seen as the removal of the major policy impediment at the state level |
| 8. Best Practice Analysis | <ul style="list-style-type: none"> Matrix related to wireless in other cities planning or developing systems Motivations—bridge digital divide, improve convention center access, econ. development, competitive rates with DSL \$35 (384 Kbps) or \$100 (1 Mbps) | Six pages with a high-level summary of other cities in the planning or development; brief comments about public safety, services for underdeveloped areas, and educational needs |
| 9. Technical Analysis | <ul style="list-style-type: none"> Overview of available technologies (Wi-Fi, WiMAX, mesh) Summary of pilot study in four regions in Philadelphia | Twenty-page overview of various technologies, with no quantifications of relative merits/risks or of the consumer/business demands, ending with the comments on four site “tests” where “no ‘show stoppers’ were found in the RF environment”; however, no testing with loaded systems |

Business plan contains relatively summary descriptions of goals and no real analyses of risks.

Source: Wireless Philadelphia Business Plan (February 9, 2005); Balhoff & Rowe, LLC

³¹ Ibid., pp. 25-29.

³² Ibid., pp. 37-42.

³³ Ibid., p. 43.

The second point is that, at least in this plan, there is no real analysis of critical business or financial issues, including segmentation of market needs, the competitive landscape, likely trends in pricing and technology substitutions, specific economic benefits, or risks. The document reports on community-stakeholder perceptions focused on social needs rather than on specific financial issues and opportunities. One error in the study is a reference to DSL pricing of \$35 for 384 Kbps and \$100 for 1 Mbps, when the reality is that the local cable provider is offering 4 Mbps for approximately \$40 and the local telephone provider is offering up to 3 Mbps for approximately \$35. A third point is that there is no exposition about the legal and policy issues that might have been expected in a plan of this kind. The plan's commentary concerning national policy simply notes that wireless and broadband services are promising technologies. There is no consideration of the issues surrounding competitive goals in the Telecom Act of 1996 or the emerging conflicts with legislators and regulators. The plan's consideration of state policy issues focuses narrowly on Verizon's agreement to a compromise (Verizon announced that it would not oppose the initiative), but the plan does not even raise what might be risk factors affecting the state's growing competitive forces.

Model suggests a wholesale service that generates immediate positive EBITDA margins that rise to 42% by year 5.

In **Table 20**, the Wireless Philadelphia financial plan is re-created as it appears in the February document. Three lines have been added to calculate revenues per subscriber annually, the implied residential penetration rate, and the EBITDA margin. Several points stand out. First, the model suggests that the monthly revenue per subscriber remains close to \$8 throughout the entire five years, reflecting low wholesale pricing in support of retail providers that will be pricing \$16-\$20 monthly. Second, the penetration rate from year one is set at 13 percent. To provide some perspective, the annual increase in the U.S. broadband penetration rate was about 7.5% in the first quarter of 2005, meaning that the percentage of U.S. households using broadband increased to 30.6% from 23.1% (see **Table 5**). Philadelphia's plan suggests that the city will acquire the total industry growth in the first year, plus take 5.5% share from Verizon, Comcast and the other private operators in that same first year, an assumption that appears extreme. Fundamental industry analyses suggest that such a gain in share is unlikely in a community where penetration is more mature and where the competitors have formidable value propositions (speed and competitive prices). Further, JupiterResearch, in a June 2005 study, reports that its surveys indicate in larger communities that only 34% of consumers would use a *free* wireless service in their homes, and 32% would use a free service in public locations, making the point that penetration numbers are generally estimated at too high a level for planned paid services.³⁴ Third, the plan's EBITDA margin is substantially positive from year one. The planners expect a 30 percent margin in spite of the fact that no initiative has posted positive operating figures for the first several years. Subsequently, the EBITDA margin rises to 42 percent, which is a high figure in any competitive market. Fourth, the operating expenses are likely to be higher, rather than lower, as will be explained in Chapter Four. Fifth, the plan's capex numbers disappear after year one, a scenario that never occurs in a wireless model, much less in a densely populated region where capacity demands are expanding and interference is significant. In short, the model appears optimistic.

³⁴ See JupiterResearch, *Municipal Wireless*, p. 8.

Table 20: Philadelphia financial model

| (\$mils) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Cumulative total |
|--------------------------------------|--------|--------|--------|--------|--------|------------------|
| Revenue | 8.2 | 11.6 | 12.9 | 14.0 | 14.5 | 61.1 |
| Operating expenses | 5.7 | 8.1 | 8.2 | 8.4 | 8.3 | 38.6 |
| EBITDA | 2.5 | 3.5 | 4.7 | 5.6 | 6.1 | 22.5 |
| Net income | (0.1) | 0.1 | 1.3 | 2.1 | 2.6 | 5.2 |
| Capital expenditures | 10.0 | 0.2 | 0.1 | 0.1 | - | 10.5 |
| Working capital reserve | - | 0.1 | 1.3 | 1.4 | 1.4 | 4.2 |
| Free cash flow | (9.0) | 2.4 | 2.8 | 4.1 | 4.7 | 5.0 |
| Subscribers (000s) | | | | | | |
| Residential and low-income | 77.9 | 108.0 | 117.3 | 124.3 | 129.6 | |
| Standard business | 0.8 | 2.1 | 3.4 | 4.8 | 5.3 | |
| Premium business | 0.1 | 0.2 | 0.3 | 0.3 | 0.3 | |
| University & distance learning | 2.6 | 4.1 | 6.0 | 7.9 | 8.8 | |
| Occasional--nomadic | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | |
| Secure government portable | 0.3 | 1.0 | 1.7 | 2.4 | 3.0 | |
| Secure government fixed | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | |
| Total subscribers | 85.0 | 119.0 | 133.0 | 144.0 | 151.0 | |
| Revenue per subscriber (\$) | 96.47 | 97.48 | 96.99 | 97.22 | 96.03 | |
| Implied residential penetration rate | 13% | 18% | 20% | 21% | 22% | |
| EBITDA margin | 30% | 30% | 36% | 40% | 42% | |

Source: Wireless Philadelphia Business Plan; shaded lines calculated by Balhoff & Rowe, LLC.

It is not the purpose of this report to evaluate with precision any municipal plan, including the Philadelphia wireless initiative.³⁵ The authors' views of a more generic model, including capital expenditures and operating costs, will be explained further in the section addressing financial factors.

Small-community broadband is shifting toward evaluations of wireless deployments in larger communities

Promise and debate regarding wireless broadband

The debate about municipal communications networks has been relatively focused and limited over the last decade. In terms of the historical development, most of the municipal networks were constructed in relatively small communities and in regions served by city-owned utilities. As a result, with the exception of slightly larger communities such as Tacoma, WA, the motives appeared "rational" from a policy perspective. The network-builds may or may not have actually been good policy, but the salient points were that small communities felt that they needed access to quality services and that the small towns were leveraging capital commitments already present in utilities, with the advantage that they were competing against few or no alternative providers.

³⁵ A severely critical op-ed article was published by AEI-Brookings, noting that economically-deprived people are not going to buy computers to save a few dollars on wireless access, and the Wi-Fi network will be outmoded in short order by alternative wireless technologies such as WiMAX; see Scott Wallsten, *City's Wi-Fi Network Won't Close Divide*, AEI-Brookings Joint Center (February 2005), Policy Matters 05-04, available at <http://www.aei-brookings.org/policy/page.php?id=206>.

Something important and different is occurring today, however, with the new kinds of inquiries into municipal wireless network services. In the case of wireless, there is a new allure, which is that wireless infrastructure is relatively less expensive and there is the general, but likely too simple, assumption that risk is modest. The focus is generally on initial capital expenses based on technologies that use unlicensed spectrum – Wi-Fi and WiMAX.

Wi-Fi

Wi-Fi is attracting more interest in light of successful applications in hot-spots.

Wi-Fi is attracting a significant level of interest because it has proven to be a useful technology in hotspots, including homes, coffee shops, airports, libraries and hotels. Wi-Fi is very attractive in those kinds of environments in spite of its limited range of about 300 feet and its susceptibility to various kinds of interference—phones, microwaves, electrical signals, reinforced walls, etc. The particularly appealing features of Wi-Fi are the standardization of technologies, the relatively low-cost customer premise equipment (particularly with the success of Intel’s incorporation of 802.11b into the company’s Centrino processor sold with many computers), and opportunistic use of free spectrum since Wi-Fi generally relies on 2.4 GHz unlicensed bands.

Various communities have deployed some Wi-Fi services, including Chaska, MN, and Grand Haven, MI, but many more cities are reviewing the potential.

Consumers are increasingly aware of the technology because of the pervasive presence of the Wi-Fi in retail outlets, commercial availability of the product in hotels and transportation centers, and reports lauding the benefits of free hotspots, including those provided by municipalities.³⁶ The “success” of those services is now attracting interest in providing citywide Wi-Fi. While Portsmouth, New Hampshire began offering some Wi-Fi services in 2003, the community that is most often cited in articles about major deployments of citywide Wi-Fi is Chaska, Minnesota.³⁷ In 2003, after operating its city-owned ISP, Chaska.net, town leadership officially proposed to the City Council and City Manager that a wireless network might benefit the 18,000 residents and 7,500 households of the city. The plan was to begin a free trial in June 2004 and then charge \$15.99 monthly by October 2004. The network was designed to require approximately 200 Wi-Fi cells—located on city streetlights or on other city electrical equipment—to cover 16 square miles. Since then, the network was expanded to about 250 cells because interference with trees and problems with dead zones were identified. The plan noted that if Chaska reached 1400 subscribers at a rate of 200 new subscribers per month, the network would pay for itself in four years. In October 2004, the enterprise reported serving about 1800 test subscribers, but was not yet charging for the service. The municipality later reported that it was charging less than the local telephone company (Sprint), the competitive telecom carrier (KMC Telecom) and the cable operator (Time Warner), but was not interested in making a profit since it saw the provision of broadband as a social service. As of May 2005, the community was reporting that it had 2,070 subscribers that were billed on the monthly statement from the community’s local utility. The community also noted that it was successful because its “system was able to fly under the radar of the local cable provider [Time Warner].”³⁸

The other communities that have launched at least partial Wi-Fi-based services include Grand Haven, MI, Hermosa Beach, CA, Rio Rancho, NM, and San Mateo, CA. Communities that are reported to be evaluating Wi-Fi include Austin, Houston, Las Vegas, Atlanta, Pittsburgh, Minneapolis and Los Angeles. The primary applications up to the present have been local area networking for homes, travel terminals, coffee shops, university and local libraries, and more specialized support services such as public safety and metering. The trend has been

³⁶ For example, in The Wi-Fi Weblog on June 8, 2005 (available at <http://wifi.weblogsinc.com/entry/1234000097046057>), it is reported that the city of San Jose, California’s Convention and Visitors Bureau reported 24,000 logins—an average of 67 per day—since the hotspot’s launch a year earlier, and the city is indicating that it believes it has achieved a 99.8% reliability rating.

³⁷ See Gerry Blackwell, *A Tale of Two Cities* (Wi-Fi Planet) June 15, 2004, available at www.wi-fiplanet.com.

³⁸ Thomas Wailgum, *The Wi-Fi Backlash*, (CIO Magazine) May 15, 2005, available at http://www.cio.com/archive/051505/tl_wireless.html.

focused primarily on specific and narrow locations, but communities are increasingly feeling the pressure to evaluate whether they have an obligation or opportunity to provide wider coverage. There is sketchy fundamental data available at present, but the peer pressures on communities appear to be mounting.

If the Philadelphia deployment occurs, it will be the first major city offering such as service. The proponents in Philadelphia and other communities believe that the low infrastructure costs are simply too attractive to pass. However, while the models may work and the opportunity may prove to be great, the private-sector analyses of the opportunities have been more cautious, indicating that infrastructure costs are more likely to be substantially higher in resolving capacity and interference problems, and the support and other operating costs are likely to be similar or even higher than those required to run a wireline network. These issues will be examined more carefully in the financial section of this document, based on independent financial analyses.

A fundamental question is frequently raised on blog sites and in formal meetings. If the technologies and the financial opportunity were clear and compelling, why is the private sector not rushing to provide ubiquitous, low-cost services of this type? *The answer appears to be that Wi-Fi has significant limitations that cause carrier-class companies to pause. First, the throughput is likely to be limited to modest levels, possibly as low as 1 Mbps (Philadelphia's targeted throughput), compared with higher-speed alternatives already prevalent in the community. It is possible for Wi-Fi to achieve higher speeds, but the recent plans suggest lower utilization, in part to maximize the capacity. Second, the target clientele that is capable of paying for the services – businesses and homes with an appetite for high-speed – will demand increasingly greater speeds, reliability and security – putting pressure on a Wi-Fi model that uses limited unlicensed spectrum and is less likely to capture that profitable clientele.³⁹ Security and privacy issues continue to be major questions, particularly for corporate accounts, and will probably prove determinative in causing those customers to avoid public Wi-Fi services.⁴⁰ Third, the demand for capacity in high-speed services is more than doubling annually, imposing still other challenges on a spectrum-limited technology. Fourth, service level agreements in wholesale models can be costly, but are almost certainly necessary to attract retail partners. Fifth, the other support costs are likely to be higher than most municipalities are modeling as the in-building penetration of Wi-Fi requires additional antennae, with the related installation and maintenance costs. And, sixth, the current use of Wi-Fi does not appear to exceed a relatively few number of users per node in achieving acceptable throughput (sometimes pegged at 6- 10), requiring a technological leap of faith about the proposed new uses that suggest both more users (50+ in the case of one model) and increasing demands per user. The short answer is that the case does not appear to be clear or compelling, and the probability in a rapidly changing market is that the many of the Wi-Fi wireless models will underperform.*

Privacy and security concerns persist, and will likely slow the adoption of services by many businesses.

The privacy and security issues remain important and are evolving. Still, the concerns are real. In a May 2005 report from the U.S. General Accounting Office (GAO), the agency reported that nine out of thirteen federal agencies had deficiencies related to their wireless networks. Further, the GAO noted that security issues remained “challenging” for reasons outlined in **Table 21**. The industry continues to work on the problem, but the concerns about security are certainly slowing the adoption of wireless for many businesses, and they create some potential for liability problems for network providers.

³⁹ On the subject of the excessive promises and the necessity of benchmarking Wi-Fi real-world performance, see Bradley Mitchell, *Wireless/Networking* available at <http://compnetworking.about.com/gi/dynamic/offsite.htm?site=http://blogs.zdnet.com/Ou/index.php%3Fp=68>.

⁴⁰ See General Accounting Office, *Federal Agencies Need to Improve Controls Over Wireless Networks*, (May 2005), available at <http://www.gao.gov/new.items/d05383.pdf>. There are multiple accounts of problems with security and privacy, including *Wi-Fi Access Wherever You Go, Giving IT Staffs the Blues*, NetStumbler.com (April 28, 2005), available at <http://www.netstumbler.com/2005/04/28/wi-fi-access-wherever-you-go-giving-it-staff-the-blues/>; *Government Says Wi-Fi Networks Not Secure*, NetStumbler.com (May 24, 2005), available at http://www.netstumbler.com/2005/05/24/government_says_wi-fi_networks_not_secure/.

Table 21: GAO examples of wireless security threats

| | |
|------------------|---|
| Eavesdropping | The attacker monitors transmissions for message content. For example, a person listens to the transmissions on a network between two workstations or tunes in to transmissions between a wireless handset and a base station. |
| Traffic analysis | The attacker, in a more subtle way, gains intelligence by monitoring transmissions for patterns of communication. A considerable amount of information is contained in the flow of messages among communicating parties. |
| Masquerading | The attacker impersonates an authorized user and exploits the user's privileges to gain unauthorized access in order to modify data. |
| Replay | The attacker places himself between communicating parties, intercepting their communications, and retransmitting them; this is commonly referred to as "Man-in-the-Middle." |

Source: GAO report May 2005 *Federal Agencies Need to Improve Controls Over Wireless Networks*

WiMAX

WiMAX is attracting more interest because of the promise of longer-range signaling—theoretically up to 30 miles versus 300 feet for Wi-Fi. Most of the technical literature remains cautious in light of spectrum limitations, potential interference problems, and costly chip-sets for the customer equipment. Still, Sprint is expected to experiment with the technology because the company controls the majority of the key spectrum—the lower ranges which propagate farther and penetrate buildings better. All large telephone companies have begun technical evaluations, but only BellSouth has announced its plans to test-market wireless broadband service.⁴¹ The company disclosed at the June 2005 SuperComm conference in Chicago that it planned to offer the non-line-of-sight service in regions of Athens, Georgia, beginning in August 2005 with hopes to expand the trials to selected areas of Florida by year's end. The company contends that it has completed five years of trials. Using Navini Networks' pre-WiMAX equipment, BellSouth suggests that customers will have broadband speeds comparable to the company's landline DSL consumer service.

Wireless technologies are rapidly evolving, making it more difficult to choose a longer-term competitive platform.

WiMAX appears to be particularly attractive for rural regions where the loop lengths can be long and where the interference problems are relatively fewer than in urban regions, although much rural topography presents challenges to all terrestrial wireless technologies. Still, WiMAX is currently one of an emerging group of wireless data technologies, referred to as 4G (fourth generation), including TD-CDMA, and various others, as well as 3-3.5 G standards, including HSDPA/HSUPA and 1xEV-DO Revision A. Tim Luke at Lehman Brothers wrote a recent 130-page report, highlighting the rapidly changing marketplace in which WiMAX equipment spending will be limited until at least 2008, likely keeping the costs of chipsets and customer premise equipment high.⁴² He noted that the "challenges include customer premise equipment (CPE) cost, scale, interoperability, certification, spectrum availability, and mobility" and he saw cell-site costs being no better than cellular, while the economies of scale (chipsets and overall equipment costs) are working *against* WiMAX for the foreseeable future.⁴³ Importantly, the more mobile version of WiMAX—Revision E—is scheduled for commercial trials no earlier than 2007 or 2008, when the improving 3-3.5G technologies may undercut the business case.

⁴¹ BellSouth, *BellSouth to Launch Wireless Broadband in August*, Corporate press release, June 7, 2005.

⁴² Tim Luke, *Layers of Opportunity in New Broadband Standards* (Lehman Brother), May 25, 2005, pp. 1, 13, 80.

⁴³ *Ibid.*, p. 1, but especially p. 12.

The key points here are that wireless holds significant promise, but is rapidly changing in terms of capabilities. New technologies, with new cost characteristics and capacities, are emerging. And the winners among the technologies are likely to be those chosen by the major large-scale service providers—because their deployments will drive down the costs associated with network and customer premise equipment. This is an important point in high-technology adoption. One of the most critical factors is and will remain the adoption of new technologies by large companies that drive the standards and volume pricing. A municipality simply does not have the scale to compel development, maintenance of products, volume pricing or other factors that remain important in a cost-sensitive and fast-changing set of technologies.

Summary

Municipals have successfully served utility markets, but financial performance in telecom services has been short of expectations.

The record of municipal communications networks deserves some attention. The key summary insights are the following.

- For the most part, the performance of the municipal parent utility appears to have been good in offering traditional utility services where there were few competitors and the entire community needed energy or water products.
- The financial performance associated with municipal entry into cable, telecommunications, and data products has been disappointing, however, in part because new and more competitive factors have been part of the mix. Shortfalls in penetration rates and pricing expectations have proven to be a problem. Operating cash has remained negative in most of the cases. And net present value on the projects appears uniformly negative. The reasons for the miscalculation and shortfalls, when they occurred, were that the modeling was optimistic and, often, the municipality did not properly anticipate the competitive response of the incumbent provider.
- Capital expenditures per subscriber have proven to be higher than expected, with the result that the wireline net present value will remain negative for most or all of the municipal communications operations. In fact, several of the municipalities have been compelled to sell or are evaluating the sale of their networks at discounts to the original investment.
- New winds in telecommunications appear to be sweeping across rural and urban communities, as municipalities are increasingly attracted to wireless technologies that permit even larger communities to provide services, but the models appear vague and do not appear to evaluate the special risks associated with wireless services, including consumer behavior and alternative competing technologies.
- Some of the legacy lessons from wired installations are likely applicable to wireless models—that the communication model is different from a traditional utility model, that competitive responses are significantly less forgiving than in the more benign monopoly environment, and that overly optimistic planning can prove costly to a municipality.

New wireless opportunity appears attractive, but models do not seem to evaluate specific risks.

Chapter 3: Arguments For and Against Municipal Networks

The controversy continues to escalate about whether governments should provide broadband services. An impartial bystander who studies the arguments will quickly get the sense that there is so much “noise” that it is difficult to discern the essential arguments, how the claims might be tested, and whether reconciliation is possible. This section offers an overview of the literature and some of the major commentaries on municipal broadband networks, and then it attempts a critical reflection on the rationales. The potential reconciliations are reserved for a later section of this report.

The controversy about municipal broadband continues to escalate, but the motives – pro and con – can be better understood by “following the money.”

Because there is so much money surrounding the construction and running of communications networks, the battle lines are forming quickly. Those who see gain in municipal networks—vendors, consultants, network operators, and politicians expanding their reach—are articulate about the social and financial gains. And those who see financial losses or heightened risks are just as outspoken. The opponents include political operators who recognize the turbulent history of telecom, those who believe free-enterprise is at risk when government intervenes in a functioning competitive market, the incumbent carriers that are concerned about disruptive forces in an already high-risk business, and citizen-groups that fear tax-based obligations that could escalate.

It is very likely that the thoughtful observer will understand virtually all the motives—for and against municipal broadband—if they “follow the money.” This means that the opponents to municipal entry are concerned about the reduction in the market opportunity if another “competitor” divides a limited subscriber base, and especially if that “competitor” is capable of regulating the business, controlling a certain number of subscribers (schools, municipal institutions, etc.), and using tax-based “advantages.” The proponents of municipal broadband—those communities that have municipal utilities—are most often interested in deriving new revenues and gaining efficient use of their slow-growth assets. Or, if the proponents do not have utilities, they are more likely to be interested in using low-cost wireless technologies to capture a market opportunity using their special position in the community. There are other “motives” that are included in the rationales, but they appear less central. The opponents point to preservation of policy and high risk to taxpayers. The proponents note the digital divide, social outreach, and insufficient service by incumbents. But an honest assessment appears to lead back to the financial motivations. The fundamental reality is that the opponents do not want “advantaged” competitors in an already risky technology and marketing environment. And the proponents see an opportunity to penetrate markets first—with wireless or fiber—to capture 50%+ of an emerging revenue opportunity. The motives of consultants and equipment vendors are generally transparent and consistent with an effort to develop their private enterprises.

The fundamental motives are understandable. In fact, the financial return issues have been and will always be the drivers for the U.S. private-enterprise marketplace. Robust and competitive economies are always the concern of municipalities. At the same time, the financial motivations of municipalities raise profound questions in cases where there are likely conflicts of interest and potential damage to a functioning competitive market. The reader is advised to recognize that the financial issues remain a common theme—on both sides of the discussion.

Table 22 is a brief illustration of the vast amount of literature arguing for and against municipal broadband.

Table 22 sketches a representative selection of publications related to the controversy and the rationales surrounding municipal broadband efforts. The presentations that favor broadband for municipalities have historically focused on the need for intervention—because services are not available, because a more robust platform is necessary for economic growth, or because of the concerns that certain sectors of society will not participate in important benefits. The argumentation against municipal networks is centered on anti-competitive public policy concerns when government intervenes where there is little need. The table is included as a sample of the vast amount of literature that is available, including “studies” that are referenced with regularity—Ford’s monograph on whether municipals crowd-out investment, the several Progress and Freedom Foundation analyses of municipal financials, and the MIT essay on policy alternatives. Additionally, some of the outspoken proponents are cited, including Kandutsch, Kelly and Baller, as well as the strong pro-private authors, including Theirer, Bast, McClure and Lenard.

Table 22: Select publications for and against municipal broadband operations

| Title | Author(s) | Date | Pages | Pro/Con | Purpose | Conclusions |
|--|---------------------------------------|----------|-------|---------|---|---|
| The Case Against Public Broadband | Dave McClure | 5/1/2005 | 4 | Con | | |
| Broadband Properties Magazine | N.A. | 5/1/2005 | 63 | Neutral | | May 2005 edition is almost entirely devoted to municipal BB networks and the issues |
| The Case For Municipal Broadband: The historical context, the law, the technology, and the future imperative | Carl Kandutsch PhD., J.D. | 5/1/2005 | 8 | Pro | To outline some of the prominent arguments supporting municipal broadband deployments | Provides history that led to the formation of municipal electric utilities. Rationales: 1) market failures; 2) economic development |
| Risky Business: Philadelphia’s Plan for Providing Wi-Fi Service | Adam D. Thierer | 4/1/2005 | 21 | Con | To answer: “Should taxpayers finance government entry?” Focus on Philadelphia wireless plan | Muni decisions to build BB networks often ignore serious fairness issues; Philadelphia’s feasibility analysis is inadequate and underestimates costs. |
| Telco Lies and the Truth about Municipal Broadband Networks | Ben Scott and Frannie Wellings | 4/1/2005 | 16 | Pro | To refute information provided by incumbent telcos and cablecos about specific muni BB operations | Public networks achieve goals other than profit. The criterion should be the satisfaction of consumers and the value for the entire community. |
| Connecting the Public: The Truth About Municipal Broadband | Harold Feld, Gregory Rose, et al. | 4/1/2005 | 19 | Pro | To present the positive benefits of municipal networks and to refute the arguments raised by incumbents | Telco/cable duopoly will not enable the country to reach presidential BB goals; anti-muni lobby efforts should be ignored. |
| Broadband and Economic Development: A Municipal Case Study from Florida | George S. Ford, Thomas M. Koutsky | 4/1/2005 | 17 | Pro | To explore whether muni BB deployment has an effect on economic growth. | Lake County has generated 100% greater growth in economy relative to comparable Florida counties muni BB network open to public in 1991 |
| Paying the Bills, Measuring the Savings | John M. Kelly | 3/1/2005 | 34 | Pro | To assess the financial viability and community benefits of municipally owned cable television enterprises. | After correcting alleged deficiencies in Rizzuto and Wirth’s analysis, authors claim operations generated positive cash flows and subscriber savings |
| Does Municipal Supply of Communications Crowd-Out Private Communications Invest? | George S. Ford | 2/5/2005 | 12 | Pro | To evaluate whether public investment in communications crowds out private investment | The empirical model found no evidence to support the crowding out hypothesis. |
| Not In The Public Interest – The Myth of Municipal Wi-Fi Networks | Cox, Giovanetti, McClure, et al. | 2/1/2005 | 40 | Con | To provide results of in-depth analyses concerning efficiencies of muni Wi-Fi networks | |
| Profiles of Municipal and Community Broadband Networks | Scott, Chesley, Lakshmiopathy, et al. | 2/1/2005 | 16 | Con | To provide case studies of muni wireless communications operations using unlicensed spectrum. | Wireless networks offer the potential for broadband access to consumers, business, and government as a public utility |

| Title | Author(s) | Date | Pages | Pro/Con | Purpose | Conclusions |
|---|--|-----------|-------|---------|---|---|
| Municipally Owned Broadband Networks: A Critical Evaluation. | Joseph L. Bast | 10/1/2004 | 30 | Con | Update the author's previous study that analyzed the "Tri-Cities" FTTH proposal in suburban Chicago. | Munis only speed availability of BB by 6 months to a year and benefits only a small number of residents and businesses; steep costs unjustified. |
| Municipal Electric Utilities' Role in Telecommunications Services | Sharon E. Gillett William H. Lehr Carlos A. Osorio | 8/1/2004 | 20 | Neutral | To gain an understanding of the local demographics, cost, and policy factors that influence muni entry | Muni electric utilities are likely to offer communications services if they provide internal communications services for their electric ops, often by metro areas |
| Municipal Broadband in Concord: An In-Depth Analysis | David G. Tuerck, John Barrett | 3/1/2004 | 44 | Con | To analyze Concord Municipal Light Plant's (CMLP) proposal to provide broadband cable/Internet services | Risk of generating a significant losses, and electric ratepayers will be responsible for covering the losses; private enterprise already serve markets |
| Government Entry into the Telecom Business: Are the Benefits Commensurate with the Costs | Thomas M. Leonard | 2/1/2004 | 31 | Con | To build on an earlier PFF Eisenach study on whether government belongs in the telecom business. | None of muni BB operations analyzed in study is able to cover costs without subsidization; little prospect of paying off the initial investments |
| Local Government Broadband Initiatives | Sharon E. Gillett William H. Lehr Carlos A. Osorio | 12/1/2003 | 32 | Neutral | To better understand the factors that influence a community's decision to engage in a BB initiative | Munis can attract commercial BB deployment through relatively low-cost "demand-side" policies; or through "supply-side" policies |
| MuniToons®, The Folly of Municipal Ownership of Broadband Facilities | Jeremy H. Stern, William F. Bly | 11/1/2003 | 15 | Con | To closely examine the various arguments that favor municipal ownership of broadband networks. | Case studies of municipal ownership suggest municipal ownership of broadband facilities is rarely a good public policy or economic choice |
| Municipal Broadband Networks, A Revised Paradigm of Ownership | Terrance P. McCarty and Ravi Bhagavan | 8/1/2002 | 38 | Pro | To consider the viability of muni BB networks compared with carriers deploying networks in open market | Many communities where muni BB network is not only viable, but essential; muni networks increase local value, tax base, & provide investment returns |
| Cashing in on Cable, Warning Flags for Local Government | David G. Tuerck, Jonathan Haughton, et al. | 10/1/2001 | 41 | Con | | |
| The Case for Municipal Broadband Networks: Stronger than Ever | Jim Baller and Sean Stokes | 10/1/2001 | 7 | Pro | | |
| When Governments Enter the Telecom Market, An Assessment of Tacoma's Click! Network | Paul Guppy | 6/1/2001 | 12 | Con | To make an objective assessment of how the CLICK! project has fared. | By September 2000, Click! Network invested \$105 million; the losses were about \$709 in new costs for each of the utility's 148,000 power customers. |
| Does Government Belong in the Telecom Business? | Jeffrey A. Eisenach | 1/1/2001 | 24 | Con | | |
| Municipal Ownership of Cable and Telecommunications Systems | Nicholas Miller | 9/1/2000 | 12 | Pro | | |
| A Historical, Economic and Legal Analysis of Municipal Ownership of the Information Highway | Steven C. Carlson | 1/1/1999 | 27 | Pro | | |

Source: Balhoff & Rowe, LLC and documents cited.

The reader is advised that this snapshot of the literature does not convey the volume of articles and Internet blogs devoted to the issue of municipal intervention. Still, it does not take long for the reader of most of the short studies, feasibility reports and harangues to realize that the various "studies" repeat the same arguments. It is therefore helpful to distill the various presentations to certain fundamental positions.

Argument for municipal communications services

The basic case for municipal communication networks is focused on definable themes. Municipalities have generally represented that the rationale for network construction and operation is based on some or all of following five factors.

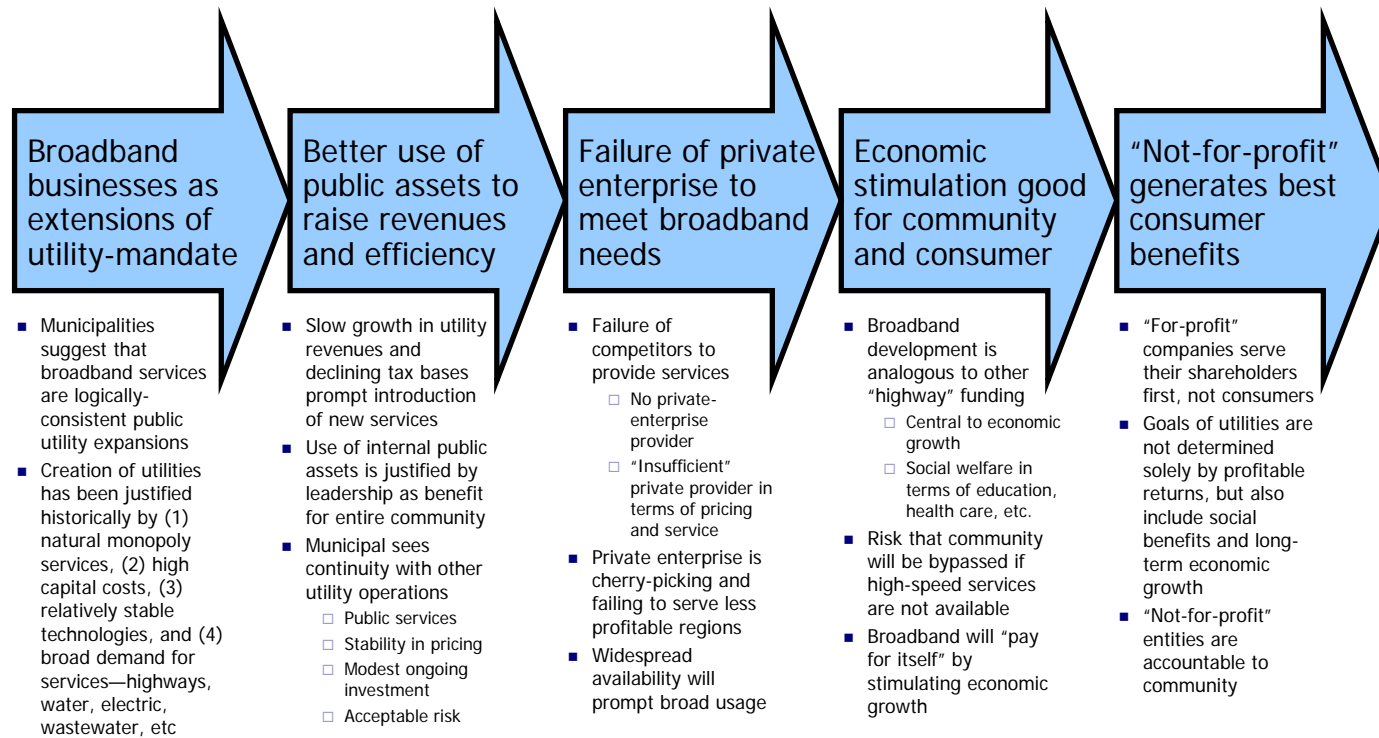
- ➔ First, the traditional argument is that municipalities see the provision of communications services as logical extensions of a century-old municipal utility mandate;

The pro-municipal argument is based on five general tenets.

- Second, it appears compelling to many municipalities that they should leverage their rights of way, fiber, personnel and other assets to even more efficiently serve the community, while generating incremental revenues;
- Third, communities often contend that private enterprises have failed to meet the needs of the community in terms of available products, quality of service, or affordable rates, and that there is a need to supplement an essential or socially-desirable service;
- Fourth, communities see an opportunity for economic stimulation, often employing modest or incremental capital to gain a higher return;
- And, finally, it is frequently suggested that public servants and public ventures will better provide for the entire community, including social goals, without the obligations that force private enterprise to generate a profitable return for shareholders.

The pro-municipal arguments are summarized in **Figure 4**, with some additional detail about points often raised by community leaders.

Figure 4: Argument in favor of government-sponsored broadband networks



Source: Balhoff & Rowe, LLC

The emerging wireless arguments have been focused on the last two tenets.

The first three justifications were, for the last fifteen years, constitutive elements of the pro-municipal broadband arguments. The basic case pointed to high capital investment necessary in building coaxial or fiber networks, and municipalities argued that the profile of those communications operations was similar to electric and water commitments. However, the first three rationales have been downplayed recently as municipalities have argued in favor of “low-cost” wireless networks. The argument has shifted noticeably to a focus on the final two justifications that advocate economic stimulation and social benefits.

Testing the pro-municipal rationales

The pro-municipal arguments have been articulated forcefully, and appear to be based on a view that municipalities should have the latitude to provide *any services can be construed as serving the public interest*. Even if private enterprise is offering the same services, according to this

viewpoint, there is no dilution of a municipality's rights to provide similar products. A fundamental conflict does not exist in the minds of many of the proponents of municipal entry.

Public-utility responsibility

The first justification points to the excellent service of municipal utilities and contends that communications networks are logical extensions of the historical utility mandate. The municipality that offers telecommunications services is, according to the logic, performing virtually the same role it performed when communities intervened in the electric or water markets in the early 1900s.⁴⁴

Municipals see new telecom services as consistent with century-old utility commitment.

The viewpoint has been most forcefully articulated by the American Public Power Association.⁴⁵ In a series of papers and presentations, the APPA has defended the position that municipal utilities are fulfilling a century-old public pact, and has done so admirably with extraordinarily positive results. In short, the proponents contend that 2,000 municipal utilities have proved that they can create value and maintain low rates in communities that would otherwise have been deprived by the private sector.⁴⁶ It is also worth noting that many utilities, public and private, first deployed telecommunications for their own system management and other communications needs, and ventured out from there into considering retail opportunities.

Most often, the argument has been made in support of new municipal *wired* networks that were based on coaxial cable or fiber. In those cases, there was virtually always an already-existing utility operation that had the opportunity to use its public assets in support of an incremental public product. The utility leadership contended that the communications opportunity was analogous to situations in the early twentieth century when communities would not have received public power, except through municipal intervention, as the private energy sector was focused only on profitable enclaves in dense communities.⁴⁷

The opponents, however, contend that the argument is too expansive. First, the traditional utility was and is providing services in a natural monopoly or to near-monopoly markets, where it was unlikely that other providers had the capital or the will to provide those services. However, communications services, including broadband, are not natural monopolies and are rapidly becoming fiercely competitive.⁴⁸ Satellite services, wireless technologies, coaxial cable, fiber and copper are all serving virtually the same markets and cover more than 90 percent of the population in many markets, according to some statistics.⁴⁹ Some rural regions have lesser coverage, but the trends indicate that broadband is far from a natural monopoly.

Opponents see fundamental differences between legacy utility and broadband operations.

⁴⁴ This is a key argument presented in workshops and articles, and distilled in an article by Jim Baller; see James Baller, *The Essential Role Of Consumer-Owned Electric Utilities In Developing The National Information Infrastructure: A Historical Perspective*, The Baller Herbst Law Group (November 1994), available at <http://www.baller.com/library-art-history.html>.

⁴⁵ See, APPA's website at <http://www.appanet.org/> where the association's various papers are available. Note that, since 1940, APPA has been a non-profit service and trade organization that serves the interests of about 2,007 community-owned electric utilities that support more than 43 million subscribers.

⁴⁶ *Community Broadband: Separating Fact From Fiction* (APPA), available at <http://www.appanet.org/store/ProductDetail.cfm?ItemNumber=11330>.

⁴⁷ See Richard Rudolph and Scott Ridley, *Power Struggle: The Hundred-Year War Over Electricity* (Harper & Row, 1986), pp. 30-31.

⁴⁸ See Federal Communications Commission, *Availability of Advanced Telecommunications Capability in the United States*, Fourth Report to Congress, September 29, 2004.

⁴⁹ FCC, *Federal Communications Commission Releases Data On High-Speed Internet Access Services*, available at http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/hspd1204.pdf.

Second, the characteristics of broadband communications—from a financial point of view—are fundamentally different from those of municipal utilities. Importantly, the technologies associated with the distribution of water or electric or sewer were relatively unchanging over decades, and certainly were not evolving in ways that might put at risk prior capital investment. In the case of communications, however, the technologies are transforming in relatively brief periods, making it possible for new competitors to enter the market using a variety of new distribution platforms. Communications is extraordinarily unpredictable, as investors over the last decade can attest. New wireless and wireline technologies are replacing old with more bandwidth, lower costs, alternative protocols, and expanding feature-sets. In reality, the financial risk in telecom is sharply different from that in legacy utility models, where there was limited probability that change would render the municipal's service as obsolete and little possibility that a competitor might gain a new competitive advantage in the foreseeable future.

Fundamental question about whether broadband is a pervasive necessity.

Third, the municipal utility served virtually every home and business with essential and relatively simple needs such as electric or water, whereas broadband cannot yet be considered a “pervasive” necessity and the usefulness of the product is based on various complex factors. Utilities were able to justify provision of fundamental services on the basis that power, sewers and water were necessary for virtually all homes and businesses. Telephony services have been viewed in the same light, prompting a universal service discipline that was clearly legislated in section 254 of the Telecommunications Act of 1996. However, at this time, broadband services or video services are officially *not included* as universal services that are to be provided to all households. The fact that broadband has only achieved a 30% penetration, in spite of wider availability, is an indication to thoughtful policymakers that there are additional factors currently affecting usage and therefore affecting whether to subsidize the services as essential at this time.

The municipal proponents occasionally point to “low” broadband penetration rates as proof that pricing is the primary impediment, but the explanation is almost certainly more complex as supported by the closing of *free* municipal hot-spots and other research.⁵⁰ Other important factors include computer penetration rates, comfort with computer technologies, substitutable broadband services in schools and libraries and work venues, literacy, and absence of compelling applications to certain end users.

It might also be noted that it is difficult for private enterprise or for a utility to project the “take-rates” for broadband bundles, precisely because broadband is a complex product and appears therefore *not to be the same as other utility products*. It is relatively easy for a utility to project its revenues and success for pervasively-required services, such as power. The fact that municipalities have made mistakes in the projections of broadband services is not a surprise because of the complexity of the product, combined with the presence of powerful competitive forces that are generally absent in traditional utility marketplaces.

IT&T News published an interesting comparison of traditional utilities and public broadband services, based on the insights of Steven Titch.⁵¹ The insights are summarized in **Table 23**, virtually all the points of which are applicable to wireline and wireless broadband compared with traditional utilities. The upfront investment in the case of wireless is lower than wired broadband services, and would be rendered in a table as “low” upfront investment. However, all the remaining items are likely correct. The table notably highlights the ongoing high investment and operating costs associated with broadband compared with traditional utilities, and the short amortization period associated with rapid technological change.

⁵⁰ JupiterResearch, *Municipal Wireless* (June 2005), p.8; see *Orlando Wi-Fi-less Downtown*, LibraryPlanet.com (June 22, 2005), available at <http://www.libraryplanet.com/2005/06/22/wifiless>.

⁵¹ Steven Titch, *Broadband is Not a Public Utility*, (IT&T News), June 1, 2005, available at <http://www.heartland.org/Article.cfm?artId=17029>.

Table 23: Comparison of operating characteristics of public utilities vs. public broadband services

| Characteristic | Water, Power Utilities | Broadband Services |
|---|--------------------------------|--------------------------------|
| Upfront Investment | High | High |
| Ongoing Investment | Low | High |
| Incremental cost of additional users | Low | High |
| Marketing costs | Low | High |
| Business Model | Predictable from year-to-year | Unstable, prone to disruption |
| Value proposition needed to gain mkt share | No | Yes |
| Allows long-term (>20 years) plant amortization | Yes | No |
| Predictable costs and revenues | Yes | No |
| Barriers to competitive entry | High | Low |
| Consumer Price Elasticity | Low | High |
| Speed of technology cycles | Slow | Fast |
| Nature of Competition | Regulated and price controlled | Unregulated; no price controls |

Source: The Heartland Institute

The fundamental insight of the municipal-broadband opponents appears correct—that there are major differences between broadband communications services and traditional utilities businesses. While there is a certain appeal in suggesting that communities are performing a utility function similar to that performed in the early 1900s, the number of major differences makes the argument less compelling. The insight is that there are important and probably *fundamental differences* between traditional utilities and new communications networks.

Leveraging public assets to generate revenues and manage costs

Second rationale focuses on using public assets efficiently.

Municipal operations typically have assets that can be leveraged. They have rights of way, internal communications networks, personnel, billing systems and other assets that make the broadband opportunity appear attractive. This second pro-municipal rationale clearly has some merit in justifying a utility’s expanded network commitment. The expansions in Lebanon or Tacoma or Ashland or Bristol were based on an understandable logic (although they might have still been anti-competitive) since they were assumed to generate more revenues and create more efficient use of assets in less competitive markets. In other cases, the upgrades to provide communications services are relatively new network commitments for the utility *in a more competitive market*, such as in the case of Lafayette, LA. And, in still other cases, the upgrades are opportunistic expansions when maintenance is necessary to the utility assets, such as that contemplated in New Orleans’ improvements to its sewer system.⁵²

A less cogent “efficiency” justification is that municipal leaders can avoid wasteful duplication of capital for redundant networks—private and public. That rationale was advanced by Clark McLeod in the proposed multi-city Iowa buildout, arguing for a benevolent monopoly through which a single provider in high-cost regions would supply services more efficiently because there is not the duplicative deployment of high-cost networks.⁵³ The presentation effectively proposed that a municipality could concentrate the capital and the services in a fairer

⁵² Corning, *Bringing Broadband to the Bayou*, available at Corning’s website http://www.corning.com/opticalfiber/guidelines_magazine/eguidelines/vol9/view.aspx?article=1&page=1®ion=na&language=en.

⁵³ See *OpportunityIowa, Unity is Key*, slide presentation delivered in August 2004, especially slides 4 and 31; the McLeod-sponsored initiative is an effort to justify that McLeod’s private company should build one network for multiple municipalities in Iowa to create efficiency and economic growth.

and more socially-conscious approach.⁵⁴ OpportunityIowa suggests the deployment of entirely new plant, similar to the UTOPIA buildout in Utah. Both of the fiber initiatives are significantly more aggressive—financially and from a policy perspective—than operations that might be based on already-invested utility plant. A “greenfield” commitment to build a network is a deliberate decision to concentrate services on a single network and, importantly, to predetermine the competitive environment.⁵⁵ It is noteworthy that virtually all the municipal utility networks, even in rural regions, have a deeply negative net present value even when there were no other competitors. Commitments in more competitive regions, therefore, appear to be even riskier propositions.

Efficiency argument has appeal, but should be reconciled with other potential policy conflicts.

With respect to the revenue and efficiency arguments where there are already assets in place, the municipality’s logic has appeal. Every citizen wants to reduce the costs associated with government, and create efficiencies through leveraging assets while generating additional revenues. However, there are important—and sometimes opposed—values or rights, requiring that the thoughtful leader weigh which value is more fundamental. The real question for policymakers is whether the benefits arising from efficient uses of public assets or from diversifications of revenue streams should outweigh other serious risks to public monies and policy, which include potential long-term damage to the competitive framework, financial risk to the community, conflicts associated with cross-subsidizations, economic uncertainties in a turbulent technology environment, and the difficulty in responsibly quantifying the benefits that will accrue to individual citizens or to the community as a whole.

In short, policymakers and citizens should carefully evaluate the substantive issues involved in the conflict of values and goals where they exist.

Insufficient availability of broadband services

Third justification has traditionally focused on failure by private sector, but new wireless initiatives have relied less on this argument.

A third pro-municipal justification is that private enterprise has failed to meet community needs, and the municipality has a public interest motive to ensure the availability of a critical service, again much like the intervention of municipalities in providing electric services in the early 1900s.⁵⁶ The contention is sometimes modified to state that the private-sector service quality is not high enough, or that the speeds of the service are not sufficient for the long term, or that rates are too high. However, the argument is fundamentally that private enterprise has failed and there is a void of some kind.

What do the data reflect about the availability and pricing of the services? As noted in the first section of this report, the data from virtually every reputable source suggest that broadband services are widely available (at least in denser markets), growing more feature-rich, and that prices are falling. Further, the trends are favorable in terms of increasing reach and the number of competitors—at least on average across the country. Recognizing that not every community has at this time benefited from the trends, the short points might be the following:

⁵⁴ There may be rural areas where competitors do not operate and where multiple nets do appear inefficient, or at the least it is not possible to support multiple nets providing the same set of services.

⁵⁵ For an interesting commentary on balancing government regulation and the risks related to stimulation of investment, see World Bank, *Doing Business in 2004*, <http://rru.worldbank.org/DoingBusiness/Main/DoingBusiness2004.aspx>; see also Smart Partners, *The Case for Municipal Fibre White Paper*, Winnipeg, 2000 at http://www.smartwinnipeg.mb.ca/Municipal_Fibre.htm; *Fiber-to-the-Home Conference, Case Studies*, October 2004, at <http://www.ftthconference.com/CaseStudies.pdf>, and Meredith Singer, *The Economic and Social Benefits of Broadband*, Telecommunications Industry Association, August 27, 2002.

⁵⁶ Carl Kandutsch, *The Case for Municipal Broadband*, (Broadband Properties), May 2005, available at http://www.broadbandproperties.com/2005issues/may05issues/Carl_Kandutsch_The_Case_for_Muni_Broadband.pdf.

- High-speed services in excess of 200 kilobits per second are widely available, in 99% of the zip codes of the United States, and DSL or high-speed cable modem services with speeds generally between 1 Mbps and 4 Mbps downstream are available to 85%+ of the households;⁵⁷
- The trends suggest that availability is growing at a rapid rate in all regions of the country and that the speeds are increasing as infrastructure improvements are made and competitive pressures develop;
- Pricing is falling at a sharp rate for virtually all the customers that are served by the major communications companies;
- In most of the communities in which the municipality intervened, services were provided by a competitor or by several competitors; and
- There are some communities in which there are apparent market failures with respect to broadband services.

Residential broadband services are not always pervasively available, but businesses generally have access even in rural areas.

The pro-municipal argumentation on this point is sometimes vague, but is virtually always part of the justification. Rural communities that commit to broadband networks may contend—rightly or wrongly—that there is not any broadband service, that it is not available to residences, that there are not enough competitors, that the speeds are not high enough in one or the other locales, or that rates are too high in the opinion of the town’s leadership. In urban regions, the argument is that certain elements of the population might be left behind, that the pricing is too high, that tourism might languish without sufficient wireless ubiquity, or that there are too few competitors in the market.

It should be noted that there are almost certainly communities where *residential* broadband services are not pervasively available. More important, some of those geographies may not be served in the foreseeable future. However, most of the industry data lead to the presumption that the trends are favorable for the vast majority of consumers.⁵⁸ In the *business* community, high-speed services appear virtually ubiquitous, even in rural areas. The pricing will sometimes be higher in areas where competition is not robust or where backhaul costs remain elevated, but the services appear to be available to businesses in nearly all markets.

Stimulating economic growth

Fourth argument based on need to stimulate economic growth.

Those in favor of municipal broadband generally argue that there are economic benefits from deploying broadband. One study sponsored by the American Public Power Association in 2005 begins “[a]s evidence mounts of the substantial positive effects on economic development from municipal construction of communications networks, more municipalities are expected to deploy such networks in the near future.”⁵⁹

Several important points should be made.

⁵⁷ See online testing services that provide throughput analysis, measuring upstream and downstream speeds for individual sites; e.g., *Speakeasy Broadband Test*, available at <http://wdc.speakeasy.net/>; or over 100 testing sites tabulated at <http://home.cfl.rr.com/ea/Bandwidth.htm>.

⁵⁸ Notably, partnerships are also available with private enterprises to deploy wired and wireless networks; see, for example, *Verizon Avenue*, which partners with communities in using Alvarion point-to-multipoint broadband wireless access equipment; additional information at <http://www.onepointcom.com/homePage/Default.asp?page=homepage>.

⁵⁹ Ford, “Does Municipal Supply . . .” p. 1; Ford references the following: Lisa Eckelbecker, High-speed services critical for growth; WPI panelists discuss future of broadband, *Telegram & Gazette* (Jul 27, 2004); McGregor McCance, Broadband Service Seen as Economic Stimulus for Rural Virginia Communities, *Knight Ridder Tribune Business News*. (Mar 4, 2003); Brad Carlson, Citi Cards to boost Boise staff, build new center in Silverstone, *The Idaho Business Review* (Mar 15, 2004); John Snow, Broadband scarcity hurts economic development, *Business Journal* (Jacksonville) (May 16, 2003), Vol.19, Iss. 31; and various archived news releases at <http://www.muniwireless.com/>.

No real studies of the value of municipal intervention, or the value of subsidized services or the benefits derived from ubiquitous wireless services.

- Balhoff & Rowe has not been able to find any substantive and disciplined studies that document or verify economic growth in any community because of *municipal intervention*; this appears to be because most communities already had access to some high-speed services, and it is difficult to segregate data for such a study;
- Importantly, economic value is generally created in conjunction with commercial job formation or preservation, but virtually all businesses already have access to broadband services even in small communities, and businesses generally account for 70%-80% of the voice and data cash margin generated by a local telecommunications provider, whether private or public;
- No study has analyzed the net value creation or value destruction when pricing for communications services is subsidized by a community; and
- The business community is not likely to be stimulated materially by access to *wireless broadband services* since those commercial entities require a high degree of reliability and security, both of which are apparently problematic in a wireless environment.

There are several “studies” that the municipalities cite to support the contention that municipal intervention stimulates economic growth.⁶⁰ One of the more frequently referenced is a brief analysis by Doris Kelley in which she compares the economic development in Cedar Falls, Iowa, with that of its demographically similar neighbor, Waterloo, Iowa.⁶¹ A second inquiry was performed by George Ford regarding whether municipal investments crowd-out private communications investment.⁶² Also cited frequently are several studies of the economic community that suggest that ubiquitous broadband would generate more jobs and revenues. Those studies include a TeleNomic Research paper in 2002 that projected 1.2 million direct or indirect new jobs and a Technet study that suggested an incremental \$300 billion annually for the U.S. economy, all premised on broadband services that would be pervasively available.⁶³

Kelley article and an opposing view are often cited, but neither appears to be a disciplined inquiry leading to defensible conclusions.

Kelley Study on Economic Differences in Iowa

In 2003, Doris Kelley prepared an economic commentary that has been quoted often in the debate about the value of broadband networks. The report was a thirteen-page descriptive presentation of the similarities and differences between Waterloo and Cedar Falls, two adjacent communities in Iowa. Kelley’s “study” has a four-page introduction, followed by nine pages with select statistics about the two communities that lead the author to conclude that the explanation for Cedar Falls’ economic success is the community’s commitment to a fiber network installed in 1995. The text reports that, compared with Waterloo, Cedar Falls has higher land values, better business growth (attracting 130 businesses), lower taxes, and better healthcare facilities. Kelley also describes how Waterloo is twice the size of Cedar Falls, had more industrial capacity, but, in spite of those assets, has lost businesses that have relocated from Waterloo to the more attractive Cedar Falls. After

⁶⁰ See George Ford and Thomas Koutsky, *Broadband and Economic Development: A Municipal Case Study from Florida*, Applied Economics Studies (April 2005) available at http://www.freepress.net/docs/broadband_and_economic_development_aes.pdf.

⁶¹ Doris J. Kelley, Economic & Community Benefits of Cedar Falls, Iowa’s Municipal Telecommunications Network (Oct. 2, 2003), available at http://www.dynamiccity.com/PDF/CedarFalls_wp.pdf; also reprised in Doris Kelley, “Telecommunications Infrastructure and Economic Development,” in the December 2004 issue of Broadband Properties.

⁶² George S. Ford, *Does Municipal Supply of Communications Crowd-Out Private Communications Investment? An Empirical Study*, Applied Economics Studies (February 2005).

⁶³ <http://www.newmillenniumresearch.org/event-02-25-2002/jobspaper.pdf>; see also, http://www.technet.org/press/Press_Releases/?newsReleaseId=2527.

suggesting that there are no other fundamental explanations, the article concludes that “the major disparity is Cedar Falls’ municipal communications network—a key component for economic growth in a ‘knowledge driven economy.’”⁶⁴

At the end of 2004, another consulting firm did a “study” on the same two communities, and arrived at different conclusions that were also primarily descriptive. The report from Virchow Krause noted that Cedar Falls is home to the University of Northern Iowa and, as a bedroom community, is characterized by upscale residential neighborhoods and a downtown area with an attractive selection of retail shops in contrast with Waterloo’s older, industrial areas that have some abandoned storefronts. The consultant stated that Cedar Falls’ recent economic success was due, in significant part, to a huge (1,350,000 square feet) Target distribution center located on a large parcel of land near a major roadway. The six-page commentary stated that Target management reported to Waterloo officials that the availability and accessibility of the Cedar Falls’ property was the major reason for their decision to locate in Cedar Falls, and Target’s management did not allude to utility service offerings or the availability of fiber optics technology in the business park as factors. Virchow Krause went on, “in fact, most large distribution centers rely on satellite communications, not fiber optics, for most of their critical communications infrastructure.”⁶⁵

In reflecting on both Cedar Falls commentaries, it is important to note that real “studies” generally require some additional discipline to determine causative factors and to rule out other potentially important drivers. Both of the documents cited in this section are, at best, descriptive presentations about two communities that have a variety of positive and negative factors that affect growth. It may be that the fiber network was determinative in propelling Cedar Falls to an improved economic position or it may be that Target was the magnet, combined with other social factors including the presence of a university. Whatever the situation in the two communities, the Kelley article represents the organization of various statistics that are possibly the prelude to a study. The commentary is an account of how the author is led to assume that the fiber network was the major economic factor in the recent ascent in one community compared with the “decline” of the adjacent town. Neither of these texts deserves to be called a probative study.

Ford Study on Whether Municipals Crowd-Out Investment

Ford study effectively limits the “study’s” question—about whether municipals crowd-out investment—to a much narrower inquiry.

Recently, George Ford wrote an article on whether municipals crowd-out investment in Florida. The article appears to be technical and thoughtful until one studies the analytics. The article begins with only two hypotheses. Ford suggests that municipal investments may (1) crowd-out private investment or (2) stimulate competitive investment. Notably, Ford does not study other hypotheses—e.g., that there is no effect on investment in the studied communities or to what degree the intervention affects the investment or whether the size of the community affects the investment pattern. He then limits the study from 227 Florida markets for which the state supplies data to a much smaller subset. He focuses the analysis first on communities with “urban” populations and CLEC activity, and then further reduces the “sample” to 24 communities with municipally-owned utilities, 15 of which have communications networks. So, in short, it is the “business” market that is studied, parsed further to those cases that are generally in urban areas. More precisely, Ford frames the initial question—whether there is growing or contracting competition *in urban business markets*—so that the eventual answer is not universal since the analytics do not apply to less dense regions or to residential markets, and the “study” has so many other factors in the focus-communities that the test of growing or contracting urban investment does not truly explain whether municipalities have any affect on the outcome. Finally, his

⁶⁴ Kelley, p. 12.

⁶⁵ Robert Herbst, *Waterloo and Cedar Falls: A Case Study in Connectivity*, Virchow, Krause, & Company (December 21, 2004), available at <http://resourcecenter.virchowkrause.com/resources/ul1.pdf>.

conclusion appears to overstate the findings, by suggesting causation – that municipal entry is the cause for more activity. He reports that “. . . the empirical model indicates that municipally operated communications networks *lead to* a 63% increase in CLEC count relative to other cities supplying their own electricity, and a 13% increase in CLEC count relative to cities with privately-supplied electricity.” [Emphasis added.]

More directly stated, one does not need a study to determine the reason for growing investment in denser urban areas. Investors will always be attracted to concentrated, highly profitable business opportunities. It is simply wrong in these cases to argue that municipal intervention can be isolated to arrive at a conclusion that it is causative of greater investment. And there is certainly no answer to the question of how a municipality in a small market or in low-profitability residential markets affects competition or investment.

Ford's conclusion that municipals cause more investment does not appear to be supported by the study.

The simple comment about this article is that the statistical analyses – regressions and Poisson techniques – are not necessary to conclude that more competitive local exchange carriers (CLECs) will serve denser and urban Florida markets. Further, Ford argues that various variables support the value of the design including dummy variables for Verizon and Sprint markets and another variable for BellSouth, which lead Ford to the insight that there are more CLECs in BellSouth markets.⁶⁶ Again, the reality is that BellSouth serves the larger Florida markets, while GTE/Verizon and Sprint serve the less dense regions, which leads to the uninformative conclusion that highly urban CLEC activity is greater than less urban CLEC activity. The article does nothing to explain economic stimulation. It uses statistical tools to examine what might be termed the wrong target market (business-based CLEC activity), does not address the collinear variables that are likely overwhelming the analysis (dense and urban markets), adds other corroborative proofs of the quality of the analysis (Verizon and Sprint variables that support some of the conclusions, but for reasons different from those cited), and then interprets those data as probative of municipal causation.

One final point about the Ford “study” is that, in the markets in question, the municipalities are again not filling a void created when the private sector has failed to provide services. In the cases cited by Ford, municipalities are serving markets with more CLECs because those markets are attractive to all providers of services – municipalities and the private sector.

Macroeconomic studies

Other economic studies are focused on national factors that do not explain city-specific growth.

With respect to the TeleNomic and TechNet economic studies, it is clear that these documents are more careful economic analyses. However, it is also important to note that the *analyses assume ubiquitous broadband availability across the country, in a macroeconomic system that stimulates and re-stimulates a wide range of services and innovation through the creation of new software, sales of equipment, and increased productivity.* Those studies do not outline or explain how direct economic growth might be created in an individual community through pervasive availability of broadband. In fact, the TechNet study suggests that communities consider methods for stimulating private investment through (1) legislation that standardizes and expedites rights-of-way permitting, (2) adoption of a state-wide broadband strategy and creation of a lead broadband agency, (3) comprehensive infrastructure mapping, (4) policies to enable wholesale municipal networks, (5) innovative initiatives

⁶⁶ George S. Ford, *Does Municipal Supply of Communications . . .*, p. 7.

that increase private sector deployment, (6) financial incentives to reach underserved communities, and (7) demand-promotion efforts including enhanced e-government.⁶⁷

Summary comments on the economic argument

Economic factors are important and merit additional study.

The economic argument likely deserves more study since there do not appear to be satisfactory data or analyses. There is little question that the stimulation of business growth is positive for a community, and most businesses require infrastructure, including communications, roads, rail, power, etc. Still, it appears that most businesses have access to high-speed services even in small communities. Some municipalities may contend that the rates for those services are high and that lower rates might attract more businesses, but the question remains whether subsidization is the best approach for the businesses, whether a duplicative network is necessary, and whether economic stimulation truly offsets the cost of the subsidy.

While there is clear and positive economic value to providing broadband to the residential population that has need for the service, the precise economic benefit derived from *ubiquitous* residential broadband is difficult to quantify. It might be argued that more citizens are retained in communities with high-quality education and with better infrastructure or that a larger population is attracted to an environment where they can work more easily from home or benefit from access to socially-desirable resources. Still, most of the data available in the public domain indicate that even the poorest members of the population have access to broadband in schools, libraries and other public venues. The question is whether targeted aid is a better use of a community's resources in accomplishing a specific set of goals rather than expending significant resources to ensure ubiquitous geographic coverage. The economic argument, in short, begs for more analysis to determine whether the costs involved in providing ubiquity or duplicating the private network are offset by specific and quantifiable benefits. It appears that no such disciplined study exists at the present.

Serving the public interest

Final pro-municipal argument is narrowly drawn as if no partnership might exist between public and private interests.

Municipalities and other government-sponsored, natural-monopoly utilities pride themselves on their pro-consumer focus and socially-conscious concerns, a viewpoint that appears justified in the vast majority of cases. In the increasingly strident debate over communications services, however, the positions appear to have polarized around claims that distract from what appears to be the fundamental issue—concerning whether another full-service network should be provided. On the one hand, the private competitors sometimes argue the inefficiency of government organizations, precipitating the pushback that history is clear about the effectiveness of many public-owned utility services.⁶⁸ Proponents of public services rejoin that they are more concerned about the consumer while private enterprise is less centered on the consumer and is focused on profitability. The lines—regarding social services and efficiencies—get drawn sharply in a way that overlooks collaboration and sidetracks the discussion from the question about whether a municipality should offer the services if private enterprise is functioning effectively.

⁶⁷ TechNet Releases *State-by-State Ranking of Broadband Deployment Policies*, TechNet (July 17, 2003), available at http://www.technet.org/press/Press_Releases/?newsReleaseId=2527.

⁶⁸ See APPA, *Community Broadband: Separating Fact from Fiction*, p. 21; see also Energy Information Administration, Form EIA-861, which tabulates electric rates and other statistics. See, Bast, *Municipally Owned Broadband Networks: A Critical Evaluation*, p. 2, which argues the ineffective operations of government-run services.

The conflict, according to more thoughtful parties, does not have to result in reduplication of private networks, but can be accomplished in targeted use of capital together with a functioning private sector to accomplish specific social goals. While there are studies about efficiencies of government-owned services, policymakers should be clear that the efficiency or service to specific community interest groups is not the pivotal consideration in the decision about whether to provide full-blown municipal broadband products. *The foundational question is whether to foster or to disadvantage a competitive broadband marketplace since the consumer is likely best served by a healthy competitive market rather than by a concentrated government service – if it can be rightly assumed that competition can develop within a pro-competitive environment. Again, there may be social goals that should also be met, and in such a case, it may be possible to provide incentives or support payments to the private sector to ensure meeting those goals – without having to construct an entirely duplicative network.*

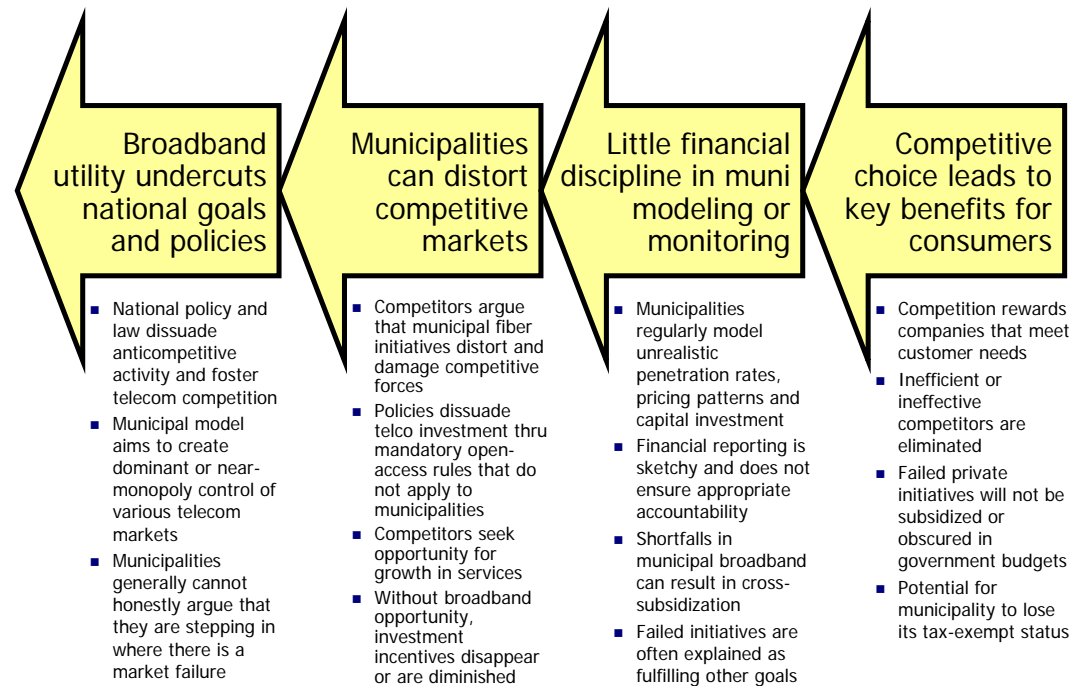
Argument against government-owned communications services

Some of the arguments against the government-owned broadband initiatives were included under the section concerning testing the municipal rationale. The arguments are summarized in this section, and there is also a testing of the anti-municipal argument. The key points of the anti-municipal position are depicted in **Figure 5** and summarized below.

Private-sector rationale based on four arguments.

- Government-sponsored interventions undercut national goals that are pro-competitive and are clearly designed to avoid excessive concentration of key assets;
- Municipalities are positioned to distort the competitive marketplace by using their advantages in terms of tax-avoidance, low-cost access to capital where the loans are secured against other municipal assets, anti-competitive awarding of government contracts, and misuse of the government's position as regulator, among others;
- There is the potential for financial waste since municipalities can cross-subsidize their services and then claim that the economic shortfalls are simply part of the charge to offer social services for which there is a lesser or negative financial return; it should be noted that a major effect of municipal ownership is to shift the significant risk of the communications market from investors to taxpayers; and
- Competitive choice leads to more benefits for consumers.

Figure 5: Argument against government-sponsored broadband networks



Source: Balhoff & Rowe, LLC.

Testing the anti-municipal rationales

The forces aligned against municipal broadband services argue that damage to the competitive marketplace can occur. They cite the potential misuse of municipal advantages as the central negative argument, but they also state the principle that government should not intervene when private markets are functioning or have the capability of functioning effectively.

National policy is pro-competitive but the Telecom Act included no specific rules regarding municipals.

Undercuts national policy

The Telecom Act of 1996 was primarily directed toward fostering a competitive environment for local telecommunications. The subsequent FCC Orders and state deliberations were designed to ensure that no incumbent local telephone company was able to use its market power to damage the competitive opportunities of other telecommunications providers. The primary tools used by the FCC were interconnection rules that ensured competitors' rights of connectivity and wholesale pricing of incumbent telephone facilities. The rules applied to seven so-called "network elements" that included switching and wired connections to homes and businesses.

Today, the incumbent carriers—cable and local telephone companies—are now arguing that they are concerned that municipalities will use their government-based “market power.” Municipals are countering that they are ensuring that essential networks are built and that they plan to make their networks, in many instances, available to any competitors through wholesale pricing. The municipals represent that they want to compete fairly and that the incumbents are trying to enact anti-competitive laws. The cable and telephone companies respond that the special advantages assigned to municipalities result in an unfair advantage that is anti-competitive without appropriate protections.

The Telecom Act is not conclusive on the specific issue of municipal intervention, likely because such a scenario was not contemplated. The simple reality, however, is that telecom policy is intended to be pro-competitive where competition is efficient, which means that strict rules are applicable if service is concentrated. The rules have been designed to ensure that private, incumbent carriers do not misuse their position, but no such rules were *officially* articulated for new entities that are also capable of concentrating and controlling services. It might be argued that the spirit of the law is clear that concentrations of market power can damage the public interest, but there is no explicit national prohibition today. The pending bills before Congress and a related Supreme Court case will be described in Chapter Five.

There are concerns about the potential use of municipal advantages, including tax-avoidance, regulatory controls and other conflicts of interest.

Distorts competitive markets

Opponents to municipal broadband services focus many of their arguments on competitive parity questions. If a community wants true and vigorous competitive activity, the argument goes, the township cannot advantage one of the players without creating market distortions. “Competitive parity” never totally exists, as one provider of service will have more pervasive presence or better plant or superior systems. However, government leaders are probably on shaky policy grounds when they ensure that one provider, including the municipality itself, is systemically advantaged by virtue of policy rules that might damage competitive forces.

The local telephone companies have argued forcefully that they have specific obligations that disadvantage them against other carriers. The local telcos are required to provide their “network elements”—switches, transport, lines to the homes or businesses at purportedly “below-cost” rates to competitors, while the other operators—cable, satellite, and municipalities—do not have comparable obligations. The arguments also abound that taxes and fees on telephone companies and MSOs are assessed on their operations, while exempting other nascent technologies or alternative providers of services, thereby picking winners and losers. Systemic inconsistencies create misshapen investment-policies and other competitive outcomes.

Strategic concerns of private carriers include the potential distortion of all telecom products as the municipal provides the entire bundle of services.

The “parity” argument goes farther, however, noting that the municipalities have further advantages that can lead to abuse in the marketplace in damaging the position of all non-municipal broadband providers. Municipalities have tax-exemption rules designed to reduce governmental costs for essential services, or they are positioned to steer contracts for anchor tenants (the municipals and other government services), or they can employ low-cost governmental funding that pledges or relies upon other taxpayer assets, or they can cross-subsidize discounted broadband services by using other public service monies. These advantages and conflicts of interest cause the private sector to fear that the risk in a competitive market has ratcheted higher still.

The concerns are also strategic. The private carriers need to generate an acceptable return for their investors, but the municipality may be able to invest without the same accountability or discipline. And the private carriers recognize full well that broadband investment is table-stakes for survival, since voice, video and other data services are coalescing on IP-enabled networks. The fear is that, if broadband is removed from the “mix” or diminished as an opportunity for the competitors, the competitive landscape—for telephony, video, and data—could be seriously damaged. Further, it is apparent that a municipality that enters the broadband market will soon discover that it is not possible to offer broadband alone and justify the capital and operating costs. The municipality, like the cable operator and the telephone

company, will have to target the entire range of services, including telephony, video and data. Accordingly, the strategic concern is that the near-term “distortion” will undercut the integrated communications set of products with long-term consequences.

One of the fundamental questions, then, for municipal leaders is whether it is good policy to destabilize current competitive forces or alter the potential for competitive activity in a marketplace that is not naturally a monopoly. While a few communities may not be able to sustain multiple providers, the shifting technologies using different media – copper wire, coaxial cable, fiber, unlicensed wireless spectrum – should provide choice in most markets.

A review of the data reveals that . . .

- The core issue in this first anti-municipal argument turns on whether the government owner of networks is able to use its privileged position to damage the competitive marketplace;
- There are not yet studies of the specific damage to public policy that might be occasioned by municipal entry into the communications markets, although an emerging study from Columbia University suggests that the denser markets can only support about 2.5 broadband networks, which would mean that only one competitor to the municipality might be possible in many markets;⁶⁹
- The Telecommunications Act of 1996 is somewhat ambiguous and has been litigated continuously since 1996, but the principle of the Act is that network providers with special market power should be subject to special limitations lest they harm market growth; and
- State public utility commissions and the FCC have worked to eliminate any anti-competitive advantages that would damage the competitive marketplace, and would likely view anti-competitive practices as destructive of national policy.

Municipals have little financial discipline or inadequate monitoring

Opponents highlight the potential for economic waste in terms of high investment, tolerance for operating losses, and the ability to cross-subsidize.

Some of the anti-municipal argumentation contains claims that municipal operations have poor financial discipline. The truth is that some municipal utility operations are well-run as evidenced by the proofs from APPA and other organizations. However, communications is a challenging business for cable operators, for satellite providers, for CLECs (competitive local exchange carriers), for ILECs, and for government organizations. In the halting history of communications services, investors and entrepreneurs have regularly underestimated the difficulties in providing and supporting services. In fact, the CLEC graveyard is populated with stories of managements that built excellent networks, but were unable to provision the backoffice operations or market the services. The argument that there is little financial discipline is probably too harsh in many cases, but it does point to the extraordinary challenge associated with communications where significant levels of discipline are required. Further, virtually all the studies on the financial performance of municipal broadband initiatives highlight the meaningful shortfalls of those businesses and, in some cases, the wasted public resources.⁷⁰ The motives of the authors of those

⁶⁹ See Robert Atkinson and Eli Noam, *Are Multiple Broadband Infrastructures Sustainable?* at <http://www.citi.columbia.edu/research.htm>.

⁷⁰ See Guppy, Paul, *When Government Enters the Telecom Market: An Assessment of Tacoma's Click!*; for the budget of Tacoma, including Click! revenues, see www.cityoftacoma.org/default.asp?main=/54budget; see also Lenard, pp. 11-30; Bast, Joseph L., *Municipally Owned Broadband networks: A Critical Evaluation* (Revised Edition); Tuerck, David, and Barrett, John, *Municipal Broadband in Concord: An In-Depth Analysis*, Beacon Hill Institute, (March 2004), esp. pp. 30-32, at <http://www.beaconhill.org/BHISudies/ConcordCable.pdf>.

studies are clear, that is, they wish to highlight the problematic issues. Still, no other data-specific resources are apparently available that refute those arguments, and, in fact, the financial model that is presented later in this report further highlights the high financial bar associated with broadband investment.

The challenges encountered by municipalities have typically fallen into four categories. First, the capital costs have been regularly underestimated so that investment is often twice the level projected in the original plan, and the ongoing capital investments have proven far higher than was contemplated. Second, the realized penetration rates are frequently well below expectations in terms of timing and target levels (often near 50%), usually because the municipality—which contends that it is filling a competitive void—finds that there are formidable competitors in the market and those competitors respond forcefully with improved services and lower prices. The municipal argument often changes at that point when civic leaders contend that the municipal operation, which is losing money, has created a desirable social outcome in improving competition. Third, the pricing or rates for services are below expectation because the municipality must take share from incumbent companies and must respond to more aggressive pricing that unfolds. Fourth, the ongoing costs for operations are generally higher than expected.

Municipals can shift risk to citizens from investors and raise the total level of risk in the market.

It is important to note that municipal ownership—where competition already exists—has effectively shifted and changed the real risk in building and running networks. At the very least, municipal intervention is imposing risk that was previously borne alone by investors and is placing it on the public. With a possible exception in a pure wholesale fiber model, the already-significant level of risk in high-technology communications is further increased across the entire local market as private enterprise competes with municipalities for the same customer base in a higher-stakes strategic battle. Finally, the risk is elevated in a possibly inequitable manner when taxpayers have not individually chosen to accept the obligations, and have less access to information about the municipal operations in which they are effectively invested. The Securities and Exchange Commission does not ensure that taxpayers or ratepayers receive detailed and regular reports on what is effectively a private-sector investment by a public entity.

Private sector believes it can better provide consumer benefits, but municipals might partner to achieve specific public goals.

The net effect of a difficult model and, in some instances, weak modeling, as well as potentially insufficient preparation for competition and high capital costs is that no municipal broadband operation in this study appears close to a positive net present value.⁷¹ The municipality may have financial discipline to a greater or lesser extent, but the net result is that higher risk is absorbed by public citizenry.

Private-enterprise is better suited to generating consumer benefit

The proponents of private markets contend that they are better suited to provide for consumer benefits, since competition focuses on what the consumer needs, innovates to create differentiation, and sets prices for its services at levels that will attract the highest number of customers. Further, a competitive marketplace, by nature, is ruthless in eliminating companies that are inefficient or waste capital resources. By contrast, a government-sponsored entity can survive longer under the rubric that its services are subsidizations necessary for social goals.⁷²

⁷¹ See Lenard, p. 2; “None of the municipally-owned entrants [Bristol, Kutztown, and Ashland] is able to cover costs without being subsidized. The subsidies are conservatively estimated to range from \$350 per customer to over \$1,000 per customer, excluding any capital costs. . . . There seems to be very little prospect of any of the municipalities paying off its initial investment. Indeed, in all the cases, it looks as if the telecommunications ventures will be an indefinite drain on the city’s taxpayers.” It should be noted, in fairness to Bristol, that Lenard’s analysis did not account for OptiNet’s high legal expenses in 2003 when the company had one-time expenses in defending its right to offer broadband services.

⁷² For example, see Hilke, John, *Cost Savings from Privatization: A Compilation of Study Findings*, Reason Foundation (1993), available at <http://www.rppi.org/htg06.pdf>; Hilke contends that “over 100 independent studies typically found cost reductions of 20 percent to 50 percent that resulted from privatization and, more importantly, increased competition”; Hilke, p. 1.

A second point made by some opponents to municipal entry is that there are generally stricter reporting rules for private carriers, and those rules make it possible to track the success or failure of private enterprises. It is very difficult to find hard data on many of the municipal broadband operations because they are obscured by reporting conventions, which may or may not require distinct presentations of the revenues, but provide little detail on costs, modest or no insight into capital expenditures, and often distorted reporting of financing costs.⁷³ Private carriers have fewer means of concealing the results of their operations, and are generally swiftly punished for poor investments and service.

A third and new issue was raised in a recent study. While the tax obligations of private enterprise are relatively clear, there may be questions about the tax liabilities of municipal broadband providers. The authors of that recent study suggest that the nonprofit status of municipal broadband operations and possibly of the sponsoring utility (e.g., the electric parent) could be at risk by virtue of engaging in a section 503-prohibited transaction that makes the public operator subject to the federal Unrelated Business Income Tax (UBIT).⁷⁴ It is not possible here to analyze that risk, but the suggestion is that municipalities should review their legal liabilities so their cost structures are not materially altered in terms of taxation on the new operations, or, if those authors are correct, altered even for the municipality's other utility operations. Apparently, the determination is to be made by the IRS in light of six criteria pursuant to ensuring that tax-exempt organizations do not lend their tax advantages to substantial and unrelated commercial activities.⁷⁵

Is it a fair comment to criticize municipal operations? The answer is that municipals clearly are capable of running efficient utility operations and they also have other social motivations that may allow them to serve specific segments of the population as well or better than private enterprise. At the same time, communications services are changing rapidly, with extraordinary demands imposed on the service provider to innovate, achieve scale and integrate a wide range of services. Because of the pace of change, public and private companies will fail over the next decade as they find they have the wrong networks, elevated cost structures and inadequate services. Communications services appear to be a high-risk proposition that is not diminished because the network provider is public. Further, services-companies over the last century have also realized that they had to control the network—whether cable or satellite or long-distance or local telephony—to be successful. *All of this suggests that the appropriate response is that there should be a public-private coordination to ensure that the high-risk network choices generally belong to the private sector and that social goals should be targeted through incentives available to private enterprise. Cooperation appears to be a much lower-risk approach in achieving the specific goals of the public servant, rather than attempting to co-opt networks in a rapidly changing marketplace.*

⁷³ See the candid discussion of the problem in a government-oriented study that was compelled to change its goals because of the paucity of data; Georgia Centers for Advanced Telecommunications Technology, *Municipal Advanced telecommunication Infrastructure Project (MuniTIP)*, (April 2003) at <http://www.gcatt.org/otp/papers/MuniTIP.pdf>.

⁷⁴ See Tuerck, esp. pp. 30-32; IRC, Section 503(b); also RIA U.S. Reporter, Reg. Section 1.503(b)-1, Para. 5032.01.

⁷⁵ *Ibid*, p. 31, "A tax-exempt utility engages in a prohibited transaction when it: 1) lends any part of its income or corpus, without the receipt of adequate security and a reasonable rate of interest, to; 2) pays any compensation, in excess of a reasonable allowance for salaries or other compensation for personal services actually rendered, to; 3) makes any part of its services available on a preferential basis to; 4) makes any substantial purchase of securities or any other property, for more than adequate consideration in money or money's worth, from; 5) sells any substantial part of its securities or other property, for less than an adequate consideration in money or money's worth, to; or 6) engages in any other transaction which results in a substantial diversion of its income or corpus to; the creator of such organization."

Summary comments

The arguments for and against municipal entry into communications services have become increasingly strident. The observer should be careful in reviewing the arguments as there are additional issues and data that require assessing the nuances of the arguments. Without the necessary digging, some arguments appear far more compelling than they prove to be upon closer review.

A careful reflection on the arguments leads back to the comments at the start of this section. Most of the motivations can be better understood by following the money. In the case of municipalities, the arguments about absence of competitors and social goals prove less applicable in most of the deployments. In the case of the opponents, the public policy arguments are simply other ways of saying that there are concerns about “advantaged” competitors that draw from the public “till” to distort the fundamental economics.

Chapter 4: Key Financial Factors

This report attempts to analyze several critical elements in light of a forward-looking financial framework.

Most of the previously published research on municipal broadband networks has focused on the performance of already-established wired broadband solutions or on the issues related to policy. This report attempts to add a *forward-looking financial framework* that highlights several critical elements in the analysis. Such a prospective analysis is especially important as larger and highly-competitive markets are the targets for municipal involvement, as the issues related to economic tradeoffs or subsidies become more sharply defined, and as the inquiry shifts toward wireless operations for which there are no satisfactory historical data.

It is clear that communications is a complex industry and the number of variables in a financial model can alter the outcomes dramatically. The experience of most investors in the industry – shareholders, company entrepreneurs, and utilities – over the last ten years is testimony to that complexity, as the shifting variables have often resulted in unforgiving outcomes rather than upside surprises. The reasons are that the technological opportunities continue to change at a remarkable pace, marketing requires focus and constant innovation, scale is critical in leveraging the platform, and consumers are seeking to pay less while demanding more in terms of capacity, convenience and integration.

Two fundamental models are analyzed—one for fiber networks and the other for wireless networks.

Because municipalities are evaluating both wired and wireless broadband networks, this section analyzes two fundamental models with very different financial characteristics. The wireline model has high capital investment costs and high financing obligations, but is expected to have a broader set of products and relatively lower ongoing operating expenses compared with the wireless model. In short, the wired model is likely to be more “future-proof,” if there is any such thing in communications. By contrast, the wireless model should have relatively lower *initial* capital investment and financing costs but will have a more restricted set of products, somewhat higher ongoing operating costs because of customer support, and expanding capacity requirements. The wireless model has the potential to bring the added benefit of mobility, but the fixed wireless model does not enjoy the same advantage. There are also risks that the fixed wireless platform will be rendered as obsolete if the consumer wants significantly more bandwidth than the spectrum allows. Further, some of the internal analyses at the large telephone companies suggest that the wireless capital investment costs are likely to be higher than most people expect because of the need to manage limited spectrum and cope with interference issues. Those analyses have precipitated additional experimentation about the number of cell sites and the use of spectrum in providing reliable fixed wireless services.

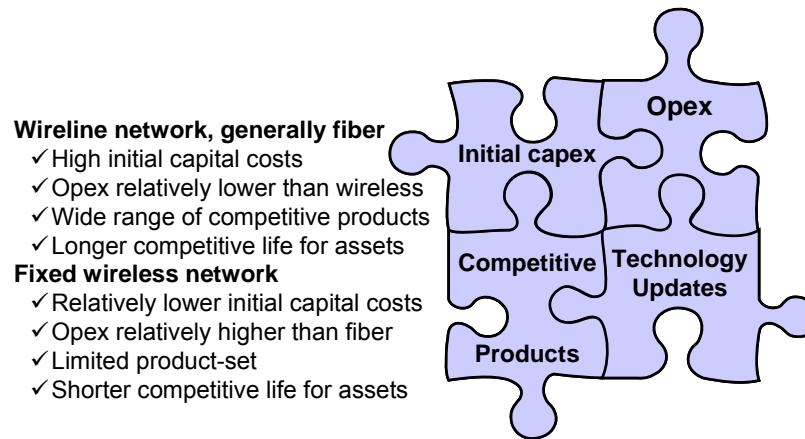
This section attempts to capture the drivers, valuations and sensitivities related to forward-looking models so the municipality or citizen can better understand the choices and risks. Again, the variables in the models are multiple, but the simple messages in this section might be distilled to the following key points.

Summary insights include the differences between fiber and wireless models, the critical importance of scale in achieving competitive operations.

- *Fiber models are expensive* in terms of the initial investment and success-based capital commitments. Unless significant levels of penetration are achieved, a full range of services is provided, and operating expenses are leveraged to achieve a low per-sub level, *the net present value of the models is generally negative* based on a ten-year cash flow model (and are likely negative using a twenty-year model).
- *Fixed wireless models have the appeal of relatively lower initial investment costs, but are commitments to a more limited set of products, with lower revenue potential, and the possibility of a disadvantaged marketing position in terms of bundles.* Further, wireless products are likely to result in higher support and maintenance costs than are wired products. Fixed wireless models may fail to achieve projected penetration levels because of the customers' desire for reliability, security, mobility and bundled services that are not included in the less mobile, unlicensed spectrum model.
- In terms of financial performance over the next decade, *communications success is likely to be achieved by service providers that have scale, broad and integrated sets of products, sophisticated marketing organizations, and technologically flexible network architectures.* It may be possible for other network providers to be successful by focusing on niches or markets that have certain unique characteristics, but the patterns have already begun to emerge. *The scale required will almost certainly be larger than a municipality, since the operator will need sufficient market power to drive down the pricing of equipment, the ability to demand support for standards, the possibility of leveraging costly customer back-office operations, and the capacity to engage in technology-testing.* The product set will almost certainly require all or some combination of data, video, telephony and possibly wireless mobility. The marketing programs will demand constant monitoring of alternative competitive plans and innovation in terms of introductions of new services and support. And the network architectures will continue to change with respect to capabilities and cost characteristics.

This financial section will focus on the capital investment issues associated with the two generic models—wired and wireless. Then, the competitive products are evaluated in terms of penetration expectations, churn and pricing. The third subsection outlines prospective operating expenses and profitability. There will be some brief commentary on the sensitivities in the models—upside opportunity and downside risk—to highlight important drivers in the models, including ongoing changes to the network platform. And, finally, there will be summary comments on the lessons that might be drawn from this exercise.

In reviewing the historical plans and the current projections regarding broadband services, it is apparent that much of the municipal modeling focuses on one or a few of the financial factors, but gives short shrift to other elements of the analysis. For example, a municipality may concentrate on initial capital expenditures and overlook the challenge of ongoing operational expenses. Or other plans provide superficial analyses of the marketing challenges and the costly turnover that occurs in a competitive market. And frequently the models suggest high initial capital expenditures and discount the necessity of upgrading the platform on a regular basis. **Figure 6** illustrates some of those elements that contribute to financial success. The figure also provides a high-level contrast of fixed wireless models with wired networks.

Figure 6: Financial factors core to a broadband analysis

Source: Balhoff & Rowe, LLC.

With this introductory perspective, this chapter turns to providing capital and operating insights for both wired and wireless network services as the prelude to presenting financial models.

Capital investment

Fiber investment is substantially higher per subscriber compared with wireless.

Capital investment remains a critical determinant in the valuation of communications networks. The wired model, which is generally fiber or hybrid-fiber-coax, is more costly to install, as the current investment, including electronics, to a customer is generally \$1,500–\$2,000. The investment costs can be higher or lower, but the averages appear to be relatively consistently in that range. Unless the operator is able to gain a large customer base and a low-cost position, the models below suggest that the initial investment for a fiber model can result in a net present value that is negative roughly at a level that reflects the initial capital cost. This suggests that the service provider should focus most especially on minimizing the initial cost. The wireless model has the advantage of relatively lower initial cost, but also has notable limitations, including higher operating costs and a more constrained target set of products.

Fiber capital investment

The cable television companies have invested nearly \$100 billion to upgrade their wired networks, so that they are generally capable of providing digital video services and high-speed data products with downstream throughputs that usually range from 3 Mbps to 10 Mbps. The regional Bell operating companies have publicly committed to relatively aggressive capital investment plans that require significant capital commitment to fiber, again with an expensive wired commitment to upgrade from copper loops. While there have been

Fiber models are attractive as they allow the carrier to offer a full range of services and can reduce operating costs to relatively low levels.

announcements about Wi-Fi and WiMAX initiatives at local telephone companies, the focus of the major providers—cable and telco—has been on wired networks that are capable of the so-called “triple-play” of telephony, video and data.

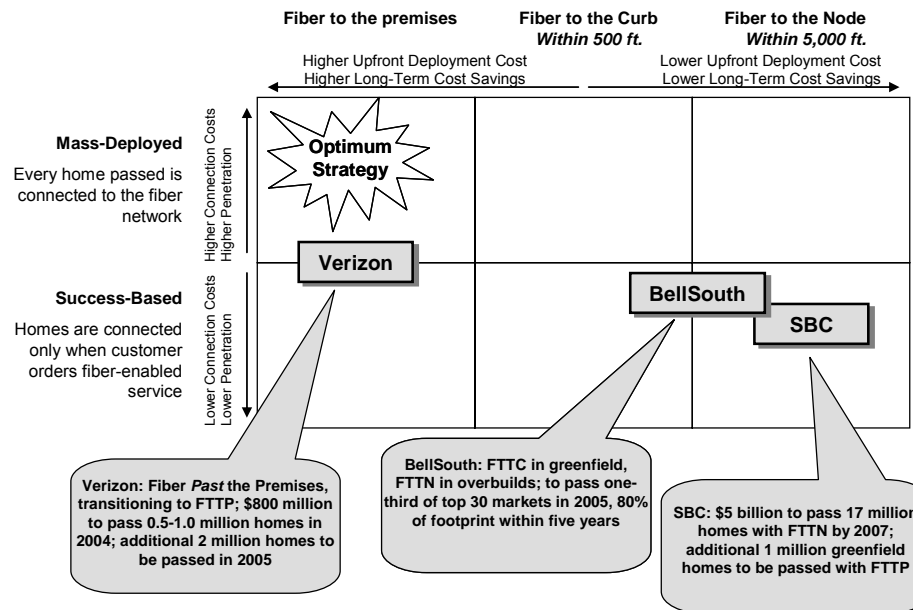
Bernstein Research provided a recent detailed analysis related to the RBOC fiber build-outs including the differentiation among the approaches of the three major players.⁷⁶ The report noted that Verizon, SBC and BellSouth have been able to use the scale of their potential networks to get attractive pricing, which is estimated to range from a low of \$1,000 per household for SBC and BellSouth to a high of \$1,600 for Verizon, assuming the carriers achieve high target penetration levels.⁷⁷ The difference in capital investment costs is because of Verizon’s plan to build fiber to the premises, whereas SBC and BellSouth are constructing fiber to the node and curb, respectively. Verizon’s plan involves higher initial capital costs, which is a greater risk, but appears to have the potential for long-term lower operating costs compared with the approaches adopted by SBC and BellSouth. The capital commitment in the case of the Bells is illustrated in **Figure 7** to graphically represent the commitments to higher or lower investment and higher or lower ongoing operating costs. Verizon’s initial plan involves approximately \$845–\$974 per premise in capital, followed by approximately \$450 per premise to provision the electronics (\$240 for optical termination equipment, \$160 for installation charges, and \$50 in set-top boxes and gateway equipment.)⁷⁸

⁷⁶ Jeff Halpern, *The Couch Potato Wars*, Bernstein Research (May 2005).

⁷⁷ *Ibid.*, p. 65.

⁷⁸ *Ibid.*, pp. 65-67.

Figure 7: Broadband capital investment strategies of the RBOCs



Source: Corporate reports and Bernstein Research

Large regional companies can gain volume-based equipment and labor costs that are 20% lower than those incurred by smaller operators including municipals.

For purposes of this prospective model, the RBOC figures, specifically Verizon's, are adopted as a guide. This is because the municipalities considering fiber/cable builds for their communities have consistently adopted a fiber-to-the-premise construct, or one most closely resembling Verizon's. Additionally, it is generally assumed that the Bell companies have the scale to gain more attractive pricing for equipment and labor, driving down per-unit costs by 20%+. The model in this report does not assign such a benefit to the municipality, and the assumption of slightly higher capital costs appears valid as reflected in the fiber commitments outlined in the second section of this report. The model summarized below assumes that initial capital of \$1,155 per premise is deployed to pass homes and businesses and that incremental capital costs are incurred when the business or home subscribes to the municipality's service. The incremental costs are comprised of a one-time per-premise cost of \$300 for optical termination equipment and installation and customer premise equipment charges of approximately \$260 incurred each time a subscriber orders a service. For comparison purposes, UTOPIA in Utah assumes \$1,171 per home passed, but the investment, still excluding electronics, rises above \$2,000 per home in several of the communities and above \$3,000 in one municipality.

Table 24 reflects a simple model for a community of 10,000, with 1,000 business lines and 9,000 households, which is a typical proportion in more rural areas and consistent with the UTOPIA data presented in Table 15 of Chapter 2. In urban areas, the proportions are closer to one-third business and two-thirds residential. After initial capital expenditures of \$11.55 million, the model provides for the addition of further

capital to serve businesses and residences. The capital expenditures in year 1 rise by another \$740,000 to accommodate the 1,946 premises served. The depreciable life is assumed to be a blended 15 years, with the fiber having a longer life of 20+ years and the electronics with a life near 7-10 years. For simplicity sake, the number of homes and businesses are left unchanged in the model, as modest growth does not appreciably change the analysis, and it is assumed that some line loss is occurring to offset any gain from economic growth.

Table 24: Fiber capital expenditures and depreciation

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
|-------------------------|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Businesses | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Homes | 9,000 | 9,000 | 9,000 | 9,000 | 9,000 | 9,000 | 9,000 | 9,000 | 9,000 | 9,000 |
| Adds | | | | | | | | | | |
| Business telephony | 175 | 31 | 27 | 23 | 19 | 15 | 12 | 9 | 7 | 6 |
| Business data | 140 | 27 | 25 | 23 | 21 | 19 | 17 | 15 | 13 | 11 |
| Residential telephony | 450 | 158 | 170 | 174 | 171 | 161 | 147 | 131 | 115 | 98 |
| Residential data | 608 | 371 | 380 | 434 | 472 | 493 | 498 | 488 | 467 | 438 |
| Residential video | 574 | 238 | 205 | 220 | 229 | 233 | 232 | 227 | 219 | 208 |
| Wholesale | - | - | - | - | - | - | - | - | - | - |
| Total | 1,946 | 823 | 808 | 874 | 912 | 921 | 906 | 870 | 821 | 762 |
| Plant (in \$000) | | | | | | | | | | |
| Total capital plant | 12,861 | 13,155 | 13,446 | 13,760 | 14,087 | 14,416 | 14,738 | 15,046 | 15,337 | 15,605 |
| Capital plant less dep. | 12,432 | 11,859 | 11,263 | 10,671 | 10,069 | 9,448 | 8,798 | 8,114 | 7,391 | 6,629 |
| Acc depreciation | 429 | 1,296 | 2,183 | 3,089 | 4,018 | 4,968 | 5,940 | 6,932 | 7,945 | 8,977 |
| Additional investment | 741 | 294 | 291 | 314 | 327 | 329 | 322 | 309 | 290 | 268 |

Source: Balhoff & Rowe, LLC.

Model assumes high initial investment and then ongoing commitments to expand the subscriber base.

The majority of the capital investment clearly occurs in the first two years, when the network passes the majority of homes and businesses in the community and initial outlays on corporate infrastructure are made. The investment pattern is that there is high incremental investment, followed by lesser commitments so that total plant in service rises from \$12.9 million at the end of the first year to about \$15.6 million at the end of the tenth year. The model assumes no significant refurbishing of the electronics in the installed plant, which is almost certainly too aggressive, but the crucial point is still evident—that fiber overbuilds are very expensive for small installations unless there is near-certainty that high penetration can be achieved with low operating costs, or unless a larger scale can be achieved.

Wireless capital investment

Because fiber and other wired technologies are expensive and require more time to deploy, municipalities have been evaluating two kinds of wireless networks. The first is Wi-Fi, which is short for “wireless fidelity” based on the IEEE standard that is 802.11 a/b/g. Wi-Fi transmits approximately 300 feet and was developed for and is intended for use in homes and indoor hot-spots such as airports, bookstores, coffee shops and the like. The second is WiMAX which uses the 802.16 standard and will use 802.20, an emerging standard that theoretically permits transmission up to 30 miles and is more suitable for a community deployment.

Wireless models of municipals focus on low initial capital costs but overlook ongoing costs to cope with demand and changing technologies.

The enthusiasm for wireless is because of the appeal of lower initial capital costs. However, over the longer term, actual costs are not yet clear. Wi-Fi's shorter range, that is constrained by power generation and will be challenged by interference and overloads, likely requires that additional, perhaps unanticipated, cell sites in closer proximity to each other. WiMAX promises fewer nodes, as a result of superior coverage, but the technology is still developing, and investment analysts are somewhat less sanguine about WiMAX, noting the high costs associated with customer premise equipment, chip sets in low volume, need for multiple towers, likelihood of interference, and the difficulties in controlling unlicensed spectrum.⁷⁹

Specifically, a new mesh Wi-Fi network deployment requires capital for the following components: purchases for and construction of a network operations center (NOC), purchases and installation of a large number of Wi-Fi cells throughout the service area, purchases and installation of network elements to transport traffic within the mesh and to backhaul traffic to the NOC, and finally installation of customer premise equipment.

The model below reflects a sample community of approximately 60,000 people dwelling in 25,000 homes and supporting 2,500 small businesses. The community is representative of the type of community actively considering municipally-sponsored wireless networks. While both smaller and considerably larger (e.g., Philadelphia) markets have active proposals for Wi-Fi networks, as evidenced in Chapters 1 and 2, most of the communities have been smaller and the model in this chapter reflects characteristics typical of a such a community.

Illustrative model reflects a community in which there is sufficient size, but little competition.

Specifically, such characteristics include:

- a community large enough to support an alternative broadband network but not large enough or profitable enough to have compelled significant private investment in a next-generation network to-date,
- a substantial percentage—70%—of the community's businesses are small and therefore, arguably more open to a fixed wireless broadband solution,
- a community with an active transient population (e.g. hotel visitors, etc.), and

⁷⁹ Luke, Tim, *Layers of Opportunity in New Broadband Standards*, (May 25, 2005) Lehman Brothers; for example, on the high cost of CPE, Luke notes at pp. 12-13; "We believe the price of a typical macro cell site base station is approximately \$50,000. We acknowledge that this price varies widely across geographies, technical standards, and implementation configurations, among other factors. Supporters of the WiMAX standard have indicated that the availability of a commodity baseband chip and a well specified standard would allow a significantly lower cost. Intel has suggested that a base station could be available for as little as \$20,000-\$25,000. We do not believe WiMAX base stations are likely to benefit from these advantages. Economies of scale are likely to work against WiMAX rather than for it for the foreseeable future. The number of CDMA2000 or W-CDMA base stations is likely to be significantly larger. We have also observed that efforts to improve interoperability through tightened standards in the cellular community have generally not fared well. These efforts have included the Open Base Station Architecture Initiative (OBSAI). We believe carriers often prefer to introduce specific network design features to provide competitive differentiation. This would of course mitigate the advantages of scale. The WiMAX Forum itself has estimated a base station cost of approximately \$50,000. Economies of scale may work against WiMAX rather than for it for the foreseeable future. We also believe the customer premise equipment, either a standalone receiver or a chip built into a laptop, is unlikely to reach the economies of scale offered by CDMA2000 or W-CDMA baseband chipsets. The CDMA2000 family of chipsets is likely to reach approximately 175 million in 2005, and W-CDMA may reach more than 50 million in 2005 and 100 million unit shipments in 2006. We recognize that each of these standards support several variants, which mitigates economies of scale. Nevertheless, we believe the cellular volumes are likely to exceed WiMAX CPE volumes by a sufficient margin to ensure scale advantages despite varying standards. CPE price estimates from the WiMAX Forum begin at \$250 for a retail self-installing unit. We believe that Sierra Wireless and Novatel Wireless currently offer CDMA2000 1xEVDO data cards to Verizon's CDMA2000 for approximately \$200. The most aggressive WiMAX CPE forecast we have seen has been \$125 per unit by 2008. We believe CPE pricing will need to be at least in this area in order to offer a cost advantage over cellular."

- ✦ a community that, excepting a few multi-dwelling unit properties, has a property base of primarily two-story buildings that do not cause significant spectrum interference problems.

Financial model will change from one community to the next, but this illustration allows some insights.

As with all prospective and non-specific projections, changes to assumptions alter the outcomes, sometimes significantly. Accordingly, alternative scenarios are discussed below. Additionally, as with all modeling of this kind, choices regarding technological and physical network configurations impact the results, and those sensitivities will also be explained further.

The model below assumes that capital investment for a Wi-Fi network is about \$100 per potential household in the first year, consistent with the capital commitment disclosed in the Chaska, MN, wireless mesh network, with incremental capital per residential subscriber set at \$50 for installation and/or CPE and incremental capital per business subscriber set at \$350 for installation and/or CPE. **Table 25** summarizes the Wi-Fi capital commitments and depreciation, assuming depreciable life is significantly shorter, possibly around 3 years given the advent of WiMAX and other 4G solutions.

Table 25: Wireless capital expenditures and depreciation

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|
| Coverage area (sq. miles) | 12 | 12 | 12 | 12 | 12 |
| Cells per sq. mile | 16.0 | 19.2 | 23.0 | 27.6 | 33.2 |
| T1 backhaul required | 19.0 | 38.0 | 49.0 | 59.0 | 67.0 |
| Homes passed | 24,614 | 24,614 | 25,352 | 26,113 | 26,896 |
| Businesses passed | 2,327.5 | 2,327.5 | 2,443.9 | 2,566.1 | 2,694.4 |
| Guestrooms passed | 6,200.0 | 6,200.0 | 6,510.0 | 6,835.5 | 7,177.3 |
| Subscribers with CPE | | | | | |
| Residential | 1,108 | 2,534 | 3,242 | 3,640 | 3,942 |
| Standard business | 114 | 207 | 250 | 294 | 322 |
| Transient | 38 | 61 | 79 | 92 | 98 |
| Business HSIA | 118 | 187 | 237 | 272 | 292 |
| Municipal subscribers | 323 | 333 | 343 | 353 | 364 |
| Total | 1,701 | 3,322 | 4,151 | 4,651 | 5,018 |
| Capital expenditures | \$2,359,050 | \$360,336 | \$335,240 | \$317,180 | \$313,465 |
| Accumulated capex | \$2,359,050 | \$2,719,386 | \$3,054,626 | \$3,371,806 | \$3,685,271 |
| Depreciation | \$724,183 | \$927,658 | \$1,082,325 | \$376,167 | \$400,167 |
| Acc. depreciation | \$724,183 | \$1,651,842 | \$2,734,167 | \$3,110,333 | \$3,510,500 |
| Capex per mile | \$196,588 | \$226,616 | \$254,552 | \$280,984 | \$307,106 |

Source: Balhoff & Rowe, LLC.

Capital expenditures in this model rise from about \$2.4 million at the end of the initial year to about \$3.7 million at the end of the fifth year. Depreciation rises at a rapid rate due to the short depreciable life of the assets and, by the fifth year, almost all of the capital investment has been depreciated, begging the question, on an asset basis, about the underlying value of the municipal network.

Capital expenditures occur over the life of the Wi-Fi network, and the network life might be as short as three to five years.

While the initial capital investment requirements may be lower than the investment in the fiber model, the wireless model realistically requires reinvestment to keep pace with technological change. To clarify the sensitivities, a less aggressive depreciable life of five years results in accumulated depreciation of \$2.1 million in year five and a depreciable life of seven years results in accumulated depreciation of \$1.5 million in year five. However, the knowledgeable industry observer recognizes that WiMAX is likely to be adopted as a broadly-employed wireless standard when it is commercially deployed in 2007/2008, meaning that the municipality may more realistically have to use a 36-month depreciable life. *In summary, a service provider that adopts Wi-Fi standards for network deployment in 2005 may find itself with a book basis for assets equal to 40% of its total invested capital by mid-2007 and may be compelled to reconfigure the network to respond to technological change. The total cost of the network would then be 1.6x its anticipated cost. Importantly, municipalities that outline their capital costs as the price of initial equipment alone are failing to assess the challenge in a technologically fast-paced industry that requires adaptation lest the services prove outmoded.*

Using industry information, the prospective model and coverage estimates suggests that the capital required to deploy a robust network across 100 square miles—for a larger city—might be \$19.7 million in year one and \$30.7 million through year 5. These estimates are consistent with the JupiterResearch findings drawn from actual wireless deployments, although it is well short of the capex committed in Corpus Christi.⁸⁰ The authors’ assumptions and model for a Wi-Fi network are detailed in **Table 26**, and applied to a regional network. The table should not be interpreted as a design for any specific community, as the number of cells and capex per cell can vary depending on interference and other factors, but the table provides a reasonable perspective based on real-world data.

Table 26: Model and assumptions for Wi-Fi capex

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---------------------------|--------------|--------------|--------------|--------------|--------------|
| Coverage area (sq. miles) | 100 | 100 | 100 | 100 | 100 |
| Cells per sq. mile | 16.0 | 19.2 | 23.0 | 27.6 | 33.2 |
| Spare parts | 5% | 5% | 5% | 5% | 5% |
| Total number of cells | 1,680 | 2,016 | 2,420 | 2,904 | 3,484 |
| Per Wi-Fi cell capex | 7,550 | 7,550 | 7,550 | 7,550 | 7,550 |
| Capex per mile | 196,723 | 30,108 | 27,989 | 26,457 | 26,138 |
| Total capex | \$19,672,292 | \$3,010,771 | \$2,798,935 | \$2,645,727 | \$2,613,838 |
| Cumulative capex | \$19,672,292 | \$22,683,063 | \$25,481,997 | \$28,127,725 | \$30,741,562 |

Source: Balhoff & Rowe, LLC.

Penetration rates, churn and pricing

Market share is a critical factor in the business plans for network providers, and has been a problem with various municipal deployments as outlined in the second section of this report. Again, most of the municipal models over the last ten years assumed certain penetration rates, and then fell short in a competitive market where the incumbent carrier responded aggressively to municipal entry. The shortfall in penetration appears to be related to two fundamental factors, the most important of which may be that not all customers are interested in subscribing to the product, while the second major factor is the competitive response of other carriers.

⁸⁰ See *Municipal Wireless*, JupiterResearch (June 14, 2005), pp. 6 and 16.

Penetration rates, turnover of the customer base, and pricing are all difficult to estimate, and are likely different in a fiber versus a wireless model.

In thinking about market share issues, a municipality should note that penetration rates should be significantly different in the case of a fiber network compared with those rates achieved through a wireless network. It appears to be a reasonable assumption that penetration rates will be higher in the fiber model than in the wireless model. A municipal service provider with a fiber network can compete effectively in all segments of the market (excluding cellular voice service) with a suite of services more suited to its customers than can a wireless provider. For residential customers, fiber allows for the delivery of video and for the “bundling” of services. This places the municipal service provider on a more competitive footing with both the incumbent telephony and cable service providers now and in the foreseeable future. For the business subscriber, fiber allows for an enhanced suite of telephony and data services including private networks, security, and other managed services. The cautionary comment in this case is that large businesses will increasingly use and maintain their own internal systems unless the service provider can provide very low-cost support and products. Fixed wireless models have other limitations because they are not capable of providing the same breadth of services, there are security and privacy concerns, and some wireless users will find more utility in mobile platforms that work at higher speeds and across broader regions.

Fiber model

Table 27 summarizes a scenario for the 10,000-premise community where fiber services are available. The penetration rates are the authors’ estimates based on the analyses of various public and private models, but it should be noted that every community is different in terms of competition and demand for services. Notably, no wholesale revenues are built into the model as will be explained below.

Table 27: Fiber penetration rates

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
|------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Penetration rates for: | | | | | | | | | | |
| Business telephony | 18% | 21% | 23% | 26% | 27% | 29% | 30% | 31% | 32% | 32% |
| Business data | 18% | 21% | 23% | 26% | 28% | 30% | 31% | 32% | 33% | 34% |
| Residential telephony | 5% | 7% | 9% | 11% | 12% | 14% | 16% | 17% | 19% | 20% |
| Residential data | 15% | 21% | 26% | 31% | 37% | 42% | 47% | 53% | 57% | 62% |
| Residential video | 8% | 11% | 13% | 16% | 18% | 21% | 24% | 26% | 29% | 31% |
| Wholesale | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Subscribers for: | | | | | | | | | | |
| Business telephony | 175 | 206 | 233 | 256 | 274 | 290 | 302 | 311 | 318 | 324 |
| Business data | 140 | 167 | 192 | 216 | 237 | 256 | 272 | 287 | 300 | 311 |
| Residential telephony | 450 | 608 | 778 | 952 | 1,122 | 1,283 | 1,430 | 1,562 | 1,676 | 1,775 |
| Residential data | 608 | 978 | 1,358 | 1,792 | 2,265 | 2,758 | 3,256 | 3,745 | 4,212 | 4,651 |
| Residential video | 574 | 811 | 1,016 | 1,236 | 1,464 | 1,697 | 1,929 | 2,155 | 2,374 | 2,582 |
| Wholesale | - | - | - | - | - | - | - | - | - | - |
| Total: | 1,946 | 2,769 | 3,577 | 4,451 | 5,363 | 6,284 | 7,189 | 8,060 | 8,880 | 9,642 |

Source: Balhoff & Rowe, LLC.

The penetration rates proposed in the model reflect a competitive market, where services are priced at retail rates, and where incumbent service providers, for both telephony and cable, exist in the marketplace. The best opportunity for a new municipal entrant in such a

It is difficult to achieve more than a fair share of a specific market.

marketplace appears to be residential data, since businesses will often have well-established partnerships with communications providers and longer-term commitments. In small markets, such as the one modeled above, it is assumed that the commercial community is underserved in terms of high-speed data offerings. While residents have access to cable, dial-up access and/or DSL service, residents in smaller communities may not have access to more robust services, including products supporting speeds greater than 1 Mbps. In the suburbs or urban centers, by contrast, the cable and telephone companies are pushing the throughput above 3 Mbps, and changing the value proposition so that fiber is not as compelling a product in the near term. In smaller communities, the municipality may have a first-provider opportunity that is not possible in larger markets where there appears rarely to be the likelihood of gaining more than 35% of a subscriber-based marketplace. The 35% figure that is based on total subscribers translates to about 10% of the total residential market. However, residential high-speed data, provided in a bundled “triple play” solution, over a state-of-the-art network, even priced at market rates, might perform somewhat better in a smaller community. Still, even municipalities from smaller markets should note the weak penetration levels outlined in the second section of this report. *More directly stated, it is difficult to achieve differentiation and a marketing position to take more than a fair share of a market, and the projected market should be realistically sized to exclude subscribers who do not yet need broadband or who choose alternative methods to gain access—through major incumbents or pure business suppliers, or using dial-up, work/school/library substitutes, etc.*

Turnover—or “churn”—is a costly component in a competitive market.

A further point on penetration relates to the costs in adding and subtracting customers in a competitive market. Penetration of competitive markets does not generally occur in a simple linear pattern. There is also a costly turnover in the customer-base, some because of simple dropouts and others because of competitors. Monopoly markets are generally not affected by the costs associated with loss and the subsequent attempt to re-win customers—what is dubbed “churn.” In fact, churn is an important factor in the business plans of network providers, and has been a problem in the various municipal plans outlined in the second section of this report. Churn can be expensive as it involves costs in disconnecting service, marketing to re-win, pricing of new services to recapture lost customers at lower margins, and reinstallation—problems that most municipal utilities have been spared with water or electric service. The problem in some of the modeling has been the too-simple assumption that there will be little churn anticipated by the municipal providers, and that the growth will be constant with margins consistently improving. As noted in Chapter 3, communications differs significantly from other monopoly utility services where there is little churn. However, communications products have far more costs of this kind, and the phenomenon is particularly important in wireless models. The prospective models outlined in this section anticipate churn of 2.5% - 3.0% per month and expect additional customer acquisition costs and reduced revenues accordingly. Again, the costs can be significant. For example, at the lower churn rate of 2.5%, a service provider can lose 26 of every 100 subscribers over the course of a year at a cost of approximately 3.7x - 7.0x the monthly average revenue per user (ARPU). With a monthly average revenue per user (ARPU) of about \$43.00, an average cost factor of 4.8x and 26 lost subscribers per year, churn costs about \$5,400 in customer acquisition costs and about \$7,700 in lost revenue, or 25% of the annual revenues generated by the initial 100 subscribers. **Table 28** illustrates the calculation of churn in this example, but the costs can vary widely.

Table 28: Calculation of the cost of churn

| | Month 1 | Month 2 | Month 3 | Month 4 | Month 5 | Month 6 | Month 7 | Month 8 | Month 9 | Month 10 | Month 11 | Month 12 |
|---------------------------|-------------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|----------|
| Initial subscriber base | 100 | 98 | 95 | 93 | 90 | 88 | 86 | 84 | 82 | 80 | 78 | 76 |
| Churn | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% |
| Remaining subscribers | 98 | 95 | 93 | 90 | 88 | 86 | 84 | 82 | 80 | 78 | 76 | 74 |
| Lost customers | 3 | 5 | 7 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 |
| Incremental | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Avg. rev. per user (ARPU) | \$42.86 | \$42.86 | \$42.86 | \$42.86 | \$42.86 | \$42.86 | \$42.86 | \$42.86 | \$42.86 | \$42.86 | \$42.86 | \$42.86 |
| Sub acquisition cost/ARPU | | | | | | | | | | | | |
| Business telephony | 4.4x | | | | | | | | | | | |
| Business data | 5.2x | | | | | | | | | | | |
| Residential telephony | 4.4x | | | | | | | | | | | |
| Residential data | 5.2x | | | | | | | | | | | |
| Residential video | 4.7x | | | | | | | | | | | |
| Average cost | 4.8x | | | | | | | | | | | |
| Customer acq. costs | 513 | 500 | 488 | 475 | 464 | 452 | 441 | 430 | 419 | 408 | 398 | 388 |
| Cumulative | 5,376 | | | | | | | | | | | |
| Lost revenues | 1,286 | 1,149 | 1,018 | 894 | 794 | 678 | 566 | 460 | 359 | 262 | 171 | 83 |
| Cumulative | 7,721 | | | | | | | | | | | |

Source: Balhoff & Rowe, LLC.

Pricing is likely to remain under pressure in telecom services, particularly with the introduction of VoIP.

Pricing is the last critical factor in the business plans for network providers, and again has been a problem with various municipal plans outlined in the second section of this report. As with most competitive markets, and specifically with those that offer commoditized services that are subject to rapid innovation, such as communications, *price compression is a natural dynamic*. The model in this section includes modest price compression for telephony and high-speed access services, but it should be recognized that the pace of competition is increasing and rates for data services have been falling about 20% annually, making it likely that pricing could decline more steeply than modeled. Further, *the pricing for telephony appears poised to contract precipitously with the introduction of VoIP services*, as average monthly revenue per line could slide from \$50, with the downward pressure applied by VoIP rates of \$35, \$30, or even as low as \$15. Many municipal models do not include price compression, as the architects of those models appear to be using regulated rate-of-return pricing or naturally occurring inflation adjustments to price.

Wireless model

In contrast with the penetration rates that might be forecasted for a fiber-based network, the wireless model has a very different profile. First, video services are not part of the product bundle. Neither a Wi-Fi nor a WiMAX network is today capable of delivering the amount of bandwidth necessary for video services. Second, small businesses may be inclined to use some wireless data capabilities, but telephony is

Compared with fiber-based services, wireless services should be assumed to be relatively less suited to video services and to business services.

not likely to be a major factor for businesses that require reliability and security. Third, the residential markets may not be attracted to telephony products on a fixed wireless network since robust mobile services are already available and the wired—copper, coax or fiber-based— networks provide higher reliability. Further, monthly rates in rural regions are frequently low compared with those in urban regions, so the value proposition will be different depending on geography. The primary service delivered by a fixed wireless network, therefore, is high-speed access.

The major advantages for the network provider deploying a fixed wireless network is the reduction of capital costs, permitting high-speed Internet access (HSIA), retail rates that are lower than wireline data services, and higher residential penetration rates for price-sensitive consumers. *Still, it is important to note that a municipality that uses fixed wireless is making a choice to narrow the services provided to the subscriber and to remain disadvantaged compared with other competitive choices that offer more reliability, security, bandwidth or mobility.*

The prospective model in this report assumes monthly data charges of \$17.00, a rate that compares favorably with wireline fees of \$30 charged by the incumbents and a rate that is competitive with dial-up fees that range from as low as \$9.99 to \$19.00 per month. As a result, the model in **Table 29** was designed to support attractive pricing, gain solid penetration of the residential data market, appeal to the transient market and, obviously, and gain support of the municipal-controlled market.

Table 29: Wireless penetration rates

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---------------------------|--------|--------|--------|--------|--------|
| Penetration rates for: | | | | | |
| Residential HSIA | 9% | 20% | 25% | 27% | 28% |
| Business fixed wireless | 5% | 8% | 10% | 11% | 11% |
| Hospitality guestrooms | 12% | 19% | 23% | 25% | 26% |
| Other (marinas /hotspots) | 5% | 10% | 12% | 13% | 15% |
| Business HSIA | 8% | 12% | 15% | 18% | 19% |
| Municipal HSIA | 100% | 100% | 100% | 100% | 100% |
| Subscribers for: | | | | | |
| Residential HSIA | 2,215 | 5,068 | 6,483 | 7,279 | 7,883 |
| Business fixed wireless | 114 | 207 | 250 | 294 | 322 |
| Hospitality guestrooms | 744 | 1,205 | 1,575 | 1,824 | 1,959 |
| Other (marinas /hotspots) | 1,425 | 2,793 | 3,567 | 4,136 | 4,749 |
| Business HSIA | 392 | 622 | 790 | 905 | 971 |
| Municipal HSIA | 323 | 333 | 343 | 353 | 364 |
| Total: | 5,213 | 10,228 | 13,008 | 14,791 | 16,248 |

Source: Balhoff & Rowe, LLC.

Churn is a factor in the wireless financial analysis, again assumed to be about 2.5% per month, as there does not appear to be a valid argument for the subscriber base to be “less sticky” than the subscriber base profiled in the fiber model. The customer base is assumed in the wireless model to be, first, product-specific (buying data but not buying a bundle), and second, price-sensitive. It should also be noted that,

because the subscriber base is upgrading from alternative data products (e.g., dial-up), the churn rates could be higher and the operating costs might be understated.

Finally, as with wired services, wireless products will be subject to price compression, consistent with the experience in cellular markets. Some municipalities modeling the wireless opportunity appear to have anticipated this dynamic and appear to have internalized the price-sensitive nature of this subscriber base into their projections. For this model, 5% annual price compression is assumed.

Operating models

As there was a significant difference in the capex characteristics of the fiber and wireless models, there is a sharp contrast in the profiles of the operating models as well. The fiber model is built for the long haul. It is a robust network deployment that enables a full suite of services and its most expensive elements are designed to be generally “technology-proof.” Such investment, however, requires significant economies of scale in order to be profitable and, by and large, the individual municipalities considering deployments do not seem to have the kind of scale to achieve significant operating leverage. In contrast, the wireless model is somewhat more flexible, but has limitations, some of which have been noted above. Wireless permits fast, cost-effective deployment of a more specific set of products to a limited and price-conscious subscriber base and is subject to technology risks and price competition.

Fiber operating model

Fiber model is assumed to be a trade-off of high initial costs for longer-term operating efficiencies.

The fiber model remains the gold standard of networks. For incumbent service providers, large upfront investments of capital are expected to be rewarded over the long term by lower operational costs and superior product offerings, with less frequent network overhauls. However, for smaller municipalities across the U.S., the fiber model remains more financially tenuous. The fiber model in this report suggests that smaller communities will not generate positive EBITDA until Year 5 and, given the high levels of depreciation, does not generate positive operating income (EBIT) during the projected 10-year period. The problem does not rest solely with the network’s capital intensity. In fact, as a percentage of revenue, depreciation is the only expense that declines significantly. The major problem is also *not* the conservative assumptions about penetration rates, subscriber acquisition, or even pricing. The model suggests that the problem is that the municipality does not have sufficient operational scale to generate the efficiencies necessary to overcome the high initial investments. The fiber commitment in a smaller community is therefore more likely to be a subsidization that may be chosen for goals other than financial returns. There are other costs that the municipalities must absorb, including backhaul and interconnection charges, all of which are relatively higher costs in more rural regions compared with urban communities. Accordingly, the modeled community, which is more rural in character, is unlikely to achieve enough scale to peer with other networks or to realize other critical cost savings. Similarly, while the model incorporates meaningful video service adoption, the aggregate size of a municipality’s subscriber base does not warrant volume discount pricing on content. In the municipality’s expenses, line-item after line-item, it is scale that remains problematic. The specific items affected by scale are the following:

Assumptions about municipal models include relatively high video content costs.

- Video content costs are presumed to be 15% higher for a municipality compared with those incurred by large MSOs, but in line with satellite providers (the RBOCs are expected to have similar problems at least in the near term);

- Customer care costs for both business and residential high-speed Internet access are 15% and 20% of monthly revenues, respectively, amortized over the subscriber base; while lower for telephony, care costs are still significant at about \$4.50 per subscriber, or 9% and 13% of revenues, respectively; and
- Access and interconnection charges for telephony as well as backhaul charges are high, modeled at \$14.50 per subscriber. In contrast, Cablevision with a half million subscribers realizes a per-sub monthly cost of about \$12.50 and Vonage with a subscriber base of 1 million realizes a cost of about \$8.00; the RBOCs, due to scale and aggregation, can have costs per subscriber of about \$2.00 in urban areas.

Model highlights the sensitivity in valuation to upfront capital costs.

The fiber model summarized below in **Table 30** is built on the assumptions outlined above. Again, the caveat is that no model precisely reflects each and every situation, but a good model aids the financial analysis of the key pressure points and risks. The model in the table reflects a fiber-based commercial operation focused on business and residential services, with products that include video, telephony and data. No wholesale revenues are modeled, but non-retail services could add revenues per subscriber at a rate of \$9-\$15 monthly. For example, the Lafayette, Louisiana, model assumes wholesale rates of approximately \$8-\$9 monthly. While the total revenues could be increased by wholesale sales, they could just as well be diminished if wholesale revenues were to replace retail revenues. Further, the model reflects operating expenses that, as discussed, are not entirely variable, so the higher percentage of retail subscribers is designed to maximize the margin in this illustration, in part to drive home the challenge in achieving a positive net present value. The final line of the table preceding the margins notes that the present value of the cash flows in the model is approximately a negative \$18.5 million.

Table 30: Fiber income statement and cash flows

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |
|-----------------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Revenues | | | | | | | | | | |
| Bus. telephony | \$105,000 | \$119,674 | \$131,320 | \$139,919 | \$145,741 | \$149,197 | \$150,731 | \$150,763 | \$149,656 | \$147,710 |
| Business data | 84,000 | 95,171 | 104,215 | 111,052 | 115,805 | 118,714 | 120,071 | 120,168 | 119,278 | 117,633 |
| Res. telephony | 189,000 | 247,496 | 307,290 | 364,840 | 417,312 | 462,824 | 500,427 | 529,952 | 551,785 | 566,660 |
| Residential data | 255,150 | 390,252 | 514,883 | 645,460 | 774,772 | 896,404 | 1,005,373 | 1,098,368 | 1,173,693 | 1,231,015 |
| Residential video | 304,868 | 448,326 | 583,943 | 738,502 | 910,233 | 1,097,030 | 1,296,685 | 1,507,080 | 1,726,327 | 1,952,849 |
| Wholesale | - | - | - | - | - | - | - | - | - | - |
| Total Revenues | \$938,018 | \$1,300,919 | \$1,641,651 | \$1,999,773 | \$2,363,864 | \$2,724,169 | \$3,073,287 | \$3,406,331 | \$3,720,739 | \$4,015,866 |
| Expenses -- Variable | | | | | | | | | | |
| Content/program. | 149,527 | 222,002 | 291,937 | 372,758 | 463,857 | 564,424 | 673,562 | 790,379 | 914,067 | 1,043,949 |
| Backhaul/other | 74,418 | 103,513 | 130,868 | 159,532 | 188,494 | 216,864 | 243,945 | 269,247 | 292,479 | 313,515 |
| SG&A | 282,610 | 383,282 | 480,594 | 580,611 | 679,350 | 773,420 | 860,254 | 938,160 | 1,006,249 | 1,064,296 |
| Plant expend. | 93,802 | 130,092 | 164,165 | 199,977 | 236,386 | 272,417 | 307,329 | 340,633 | 372,074 | 401,587 |
| Oth. op. support | 93,802 | 130,092 | 164,165 | 199,977 | 236,386 | 272,417 | 307,329 | 340,633 | 372,074 | 401,587 |
| Depreciation | 428,690 | 867,188 | 886,700 | 906,877 | 928,235 | 950,080 | 971,780 | 992,809 | 1,012,768 | 1,031,388 |
| Expenses -- Fixed | | | | | | | | | | |
| SG&A | 500,000 | 510,000 | 520,200 | 530,604 | 541,216 | 552,040 | 563,081 | 574,343 | 585,830 | 597,546 |
| Total expenses | 1,622,848 | 2,346,170 | 2,638,629 | 2,950,337 | 3,273,924 | 3,601,663 | 3,927,280 | 4,246,204 | 4,555,541 | 4,853,869 |
| Operating profit | (684,831) | (1,045,251) | (996,978) | (950,564) | (910,060) | (877,493) | (853,993) | (839,873) | (834,802) | (838,002) |
| Interest expense | 624,203 | 593,029 | 560,609 | 526,892 | 491,826 | 455,358 | 417,430 | 377,986 | 336,964 | 294,301 |
| Taxes | - | - | - | - | - | - | - | - | - | - |
| Net profit | (1,309,033) | (1,638,280) | (1,557,587) | (1,477,456) | (1,401,886) | (1,332,851) | (1,271,423) | (1,217,859) | (1,171,766) | (1,132,304) |
| Cash Flows | | | | | | | | | | |
| EBITDA | (256,140) | (178,063) | (110,278) | (43,687) | 18,175 | 72,587 | 117,787 | 152,936 | 177,966 | 193,386 |
| Interest inc. (exp) | (624,203) | (593,029) | (560,609) | (526,892) | (491,826) | (455,358) | (417,430) | (377,986) | (336,964) | (294,301) |
| Capex | (12,860,709) | (294,208) | (291,153) | (314,168) | (326,567) | (328,792) | (322,204) | (308,657) | (290,130) | (268,475) |
| Total cash flow | (13,741,052) | (1,065,301) | (962,040) | (884,747) | (800,218) | (711,563) | (621,848) | (533,707) | (449,127) | (369,390) |
| Net present value | (18,456,721) | | | | | | | | | |

Source: Balhoff & Rowe, LLC.

Municipals should understand the importance of capex costs to valuation.

Importantly, the model suggests that the negative net present value exceeds the capital investment in the network. Some communities like to use the analogy of railroad growth in the mid-1800s to contend that it is necessary to build sooner rather than later. They argue that the townships are at risk if they allow the broadband opportunity to pass them by. However, *the financial models suggest that the communities may be more at risk if they commit too early or at too elevated a price.* Importantly, consumer bandwidth requirements are not high at this time, and electronics and other costs are expected to fall with large scale RBOC commitments to specific technology platforms. Thus, *if the network investment is at a premium to the competitors' investment, the net effect is that an operator with high costs either will have to maintain high rates to*

subscribers or absorb the losses to remain competitive. The models tell a story that is diametrically-opposed to the railroad analogy, as it is possible that wealth can be wasted when alternative broadband is possible or when capital costs are falling steeply.

Wireless operating model

Wi-Fi has different advantages and shortfalls compared with WiMAX, but both are commitment s to a more limited set of products.

Wireless has appealing features and significant risks. The longer-term wireless solution appears to favor WiMAX or some more robust technology, but this report models a Wi-Fi network, since that technology has attracted the most attention among municipalities over the last year. The principles highlighted in the Wi-Fi model might easily be applied to other wireless technologies, too, as there are currently for all wireless opportunities a more constrained set of market opportunities, elevated competition with other wireless and wired technologies, and higher relative costs in terms of support and network management.

Communities considering wireless broadband initiatives are, for the most part, evaluating Wi-Fi deployments because the standards, software and equipment exist in volume to achieve success by some measurements. By contrast, proponents of WiMAX technologies argue that WiMAX is intended for far-larger geographies and better suited for larger scale deployments, whereas Wi-Fi has a reach that is too limited (100 to 300 feet) and in-building penetration that is too uncertain. However, the fact remains that Wi-Fi is attracting the most interest in various controversial initiatives in multiple communities, raising the question about whether the storyline is overwhelming more fundamental analyses.

Again, as with the fiber model, a wireless model can be designed to reflect very different market opportunities. Wi-Fi network equipment choices, such as whether the radios purchased are sectorized or non-sectorized, can alter the capital intensity of a service provider's model shifting costs away from or toward expense items (e.g., additional backhaul). The density of the market and the geography will also affect the number of sites, backhaul design, spectrum management costs, competitive assumptions and other factors. With the understanding that the model will be used to highlight important principles, illustrative operating results for a Wi-Fi wireless municipal service provider are reflected in **Table 31**.

Table 31: Wireless income statement and cash flows

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|--|-------------|-------------|-------------|-------------|-------------|
| Revenue | \$2,005,600 | \$2,868,394 | \$3,535,221 | \$3,966,369 | \$4,234,498 |
| Operating expenses | | | | | |
| Network | | | | | |
| Backhaul total (cell - POP) | 108,000 | 123,120 | 136,458 | 166,674 | 175,933 |
| Peering (Internet access) connectivity | 227,219 | 439,976 | 552,878 | 622,732 | 674,283 |
| POP / NOC facilities lease | 13,800 | 13,800 | 13,800 | 13,800 | 13,800 |
| Cell mounting expense | 69,120 | 82,944 | 99,533 | 119,439 | 143,327 |
| Leases | - | - | - | - | - |
| Maintenance | - | 256,702 | 299,341 | 353,553 | 418,089 |
| Provisioning and deployment | 187,500 | 196,875 | 206,719 | 217,055 | 227,907 |
| Total | 605,639 | 1,113,417 | 1,308,729 | 1,493,253 | 1,653,340 |
| Customer Support | | | | | |
| NOC and call center expenses | 312,500 | 403,313 | 388,162 | 514,409 | 528,341 |
| Engineering | 75,000 | 78,000 | 81,120 | 84,365 | 87,739 |
| Total | 387,500 | 481,313 | 469,282 | 598,774 | 616,081 |
| Sales and Marketing | | | | | |
| Product marketing expenses | 150,000 | 154,500 | 79,568 | 81,955 | 84,413 |
| Product marketing staff | 80,000 | 41,200 | 21,218 | 21,855 | 22,510 |
| Customer acquisition | 186,500 | - | - | - | - |
| Marketing/advertising | 345,568 | 302,314 | 283,705 | 293,843 | 329,589 |
| Sales staff | 275,000 | 283,250 | 145,874 | 150,250 | 154,757 |
| Total | 1,037,068 | 781,264 | 530,365 | 547,902 | 591,270 |
| G&A | | | | | |
| Bad debt expense | 79,403 | 141,743 | 175,034 | 196,540 | 209,893 |
| G&A | 40,112 | 57,368 | 70,704 | 79,327 | 84,690 |
| Total | 119,515 | 199,111 | 245,739 | 275,867 | 294,583 |
| Total operating expense | 2,149,721 | 2,575,105 | 2,554,114 | 2,915,796 | 3,155,274 |
| EBITDA (revenue - opex) | (144,121) | 293,290 | 981,106 | 1,050,573 | 1,079,224 |
| EBITDA margin | -7.2% | 10.2% | 27.8% | 26.5% | 25.5% |
| Total depreciation (straight line) | 724,183 | 927,658 | 1,082,325 | 376,167 | 400,167 |
| EBIT (revenue - opex - depreciation) | (868,304) | (634,369) | (101,219) | 674,406 | 679,057 |
| Net income | (868,304) | (634,369) | (101,219) | 674,406 | 679,057 |
| Capital expenditures | 2,359,050 | 360,336 | 335,240 | 317,180 | 313,465 |
| Free cash flow (w/o working capital) | (2,503,171) | (67,047) | 645,866 | 733,393 | 765,759 |
| Net present value | (638,405) | | | | |

Source: Balhoff & Rowe, LLC.

It should be noted that significant expenses for the municipality lie in peering/internet access, customer support and network maintenance and customer acquisition/retention. Notably, the prospective model generates positive EBITDA in year 2 and positive free cash flow (without working capital) in year 3 and realizes modest EBITDA margins over a five year life. The model suggests that there is a modest

\$638,405 negative return on investment to the municipality over the five-year period if a subsidized “municipal” cost of capital (4%) is assumed. Using a market cost of capital (12%), the net present value slips to a negative value that is slightly worse than \$928,000, keeping all else the same. Notably, there are no taxes or payments to government in the model. Further, this model reflects no debt payments, which would obviously be drawn from cash flows and would further depress the valuation.

Insights from the models and sensitivities

There are several insights that are notable in this exercise. The two fundamental models have very different characteristics in terms of the services provided to consumers, financial risks incurred, and long-term competitive positioning.

Fiber model is very sensitive to capital investment and cost of capital.

The fiber model involves significant capital expense and the net present value calculations are uniformly negative, generally matching the amount of the initial capital commitment. Changes of 10% in capital expenditures results in a 22% change in net present value, explaining some of the importance of scale as large cable operators and telephone companies are able to leverage their market positions to reduce costs associated with their builds. Another means to drive present value toward a positive return is through operating efficiencies that are generally based on a scale not possible in a regional model. Price changes of 10% or comparable cost changes alter the net present value by 12%. Still, the retail pricing appears to be under pressure for the foreseeable future, particularly as promotional DSL pricing has been dropping in 20% annual increments. The combinations of factors that might move against municipalities have a compound result on value. For example, the effect of a 1% increase in capital financing costs and 10% increase in capital expenditures results in a 33% decline in net present value. *The primary insight is that the fiber model provides a technological future-proofing but is very sensitive to scale.*

Wireless model is premised on low capex, but the margins are thin because of competitive limitations.

The wireless model is quite different. It enjoys the advantage of a substantially lower upfront capital commitment. But the services it supports are limited, as bandwidth is more constrained and video services are unlikely. Accordingly, the competitive position of a municipal wireless provider could be disadvantaged. Further, the costs associated with wireless services are likely higher than most municipals have modeled in terms of capital commitments, including ongoing investments and resolution of interference problems. However, one of the most important insights relates to operating costs as backhaul expenses and support are drivers of the model. Further, there is greater likelihood that substantial portions of, or all, the infrastructure will need to be replaced within five to seven years to maintain competitive positioning. For perspective, the operating margin per sub appear to be approximately \$2-\$3 monthly in a smoothly-run Wi-Fi operation. However, *backhaul expenses can vary substantially and are highly dependent on distance and numbers of customers. The potential for a negative return is very high if subscriber counts are not maintained, which is more problematic in a model with higher turnover and a more price-sensitive customer base.*

The short summary is that the financial models are very sensitive to the assumptions and to the competitive forces that are unfolding. Municipalities should carefully weigh the costs and risks so they understand the precise shape and magnitude of the risks. As suggested above, municipalities may choose to commit to broadband models to accomplish goals other than a positive financial return. However, it is important that they understand the risks and the costs in such a commitment.

Summary

Prospective models were designed to reflect two municipal communities that offer wireless and fiber-based broadband network services. The models suggest the following:

Financial factors remain important as communities assess their use of limited public resources.

- A municipality considering constructing and/or operating a broadband network should be assessing its risks. In addition to the important policy risks, the municipality should understand the financial factors associated with broadband models, since there are limited public resources available to communities. The financial “pressure points” include capital expenditures, operating costs, customer demand factors, and ongoing technology updates.
- The financial factors should be realistically assessed and differentiated on the basis of the kind of network deployed. This section highlighted that fiber models have high capex, relatively more modest operating expenses, a more attractive product set and relatively lower technology upgrades over an extended plant-life. Fixed wireless models have lower initial capex, somewhat higher support and backhaul costs, appeal to a more limited customer base, and will likely have to be significantly refurbished within five years.
- A community may discern that no private company is willing to provide adequate services, and that the financial risks should be borne by the municipality. However, it appears appropriate to inform the citizens about the other goals to be achieved, the financial risks, and the expected levels of subsidization, if any. Up to this point, the nominal rates paid monthly by citizens are frequently not the actual rates paid since the cross-subsidizations ultimately are contributed by the citizens, including those not using the communications network.
- Unless significant levels of penetration are achieved on the municipal fiber network, a full range of services is provided, and operating expenses are leveraged to achieve a low per-sub level, *the net present value of the models is generally negative* based on a ten-year cash flow model (and are likely negative over the life of the project).
- Fixed wireless models have the appeal of relatively lower initial investment costs, but have other limitations that should be understood by the municipality and the citizenry. Fixed wireless models appear, at this point, likely to achieve more modest penetration levels, probably because of issues arising from competitive factors such as reliability, security, mobility and bundled services.
- In terms of financial performance over the next decade, communications success is likely to be achieved by service providers that have scale, broad and integrated sets of products, sophisticated marketing organizations, and technologically flexible network architectures.

Chapter 5: Legal and Policy Issues

Deep chasms exist between thoughtful people on both sides in the municipal debate.

This fifth section seeks to report and distill the legal developments related to municipal broadband networks. The authors believe that, as with all things political, reasonable people can differ about rational policy. Even a cursory reading of the literature on municipal broadband reveals such a remarkably deep chasm between thoughtful people committed to municipal intervention and similarly capable individuals who oppose it. A more careful reading reveals various inconsistencies in the argumentation that seem not to matter . . . because they frequently *do not matter* when the goal—municipal-intervention or alternatively the avoidance of government duplication of private enterprise—is a fundamental tenet in a person’s belief-structure. Accordingly, this section’s presentation of legislation and judicial decisions is simply an effort to, without bias, (1) highlight the relevant issues, and (2) reflect a framework that appears to be emerging.

The legal issues surrounding broadband—private and public—are evolving, but they appear to be set against the backdrop of federal policy that is articulated in the Telecommunications Act of 1996 (“Telecom Act”). The individual states add complexity to the process as they have a role in interpreting and applying policy within their respective jurisdictions.

Federal or national communications policy and law

The operative communications law of the land, at least fundamentally, is the Telecommunications Act of 1996. The legislation, passed in February 1996, had several purposes, including the creation of competitive markets in local telecommunications, the encouragement of the deployment of advanced services, and the preservation and support for universal service (generally interpreted as comparable rates and comparable services even in high-cost regions).

The Telecom Act of 1996 and the emerging changes in competition

The Telecom Act is interpreted and applied in various Orders issued by the Federal Communications Commission (FCC) to foster the growth of competitive services through interconnection rules, new incentives and protections related to broadband services, and re-defined systems in support of universal service. State public utility commissions are also charged with establishing more specific and complementary implementation rules, within the context of the FCC’s policies, creating a further patchwork of regulation. The interpretation process has

been painful, halting, litigious, convoluted and, in many cases, extraordinarily destructive of capital. However, competitive forces appear to be taking root in the form of rapid technological evolution and intermodal services.

Fundamental changes are occurring in telecom, precipitating competitive and policy evolutions.

Traditional voice telephony in the U.S. is now provided over more 140 million phone lines, with the number of lines contracting at a 4% -5% annual rate. There are also more than 170 million wireless phones, with the number of subscribers expanding at a rate near 10 percent annually. At the same time, even more fundamental changes are emerging. Cable operators have invested \$95 billion in their networks over the last several years, and serve 60% of the more than 100 million households. The local telephone companies are preparing for a sharp increase in their capital commitments to fiber-based networks. The statistics are not marshaled as a defense of incumbent providers, but to point up a remarkable shift that is underway as cable and telephony, as well as wireline and wireless are colliding. Consumer behavior is compelling radical changes in investment, services, bundles, pricing and cost structures. The reality is that competition is accelerating as the various communications industry players make new investments in “next generation” infrastructure capable of providing voice, video, and data services.

The statistics also signal another fundamental evolution. Many industry participants and policymakers believe that the Telecom Act is increasingly outmoded, not because it was based on an inappropriate paradigm, but because the paradigm is itself changing—competition is actually occurring, but in ways not contemplated by the law. There is a fundamental breakdown in systems that, for example, regulate telephony in one form, but provide little regulation of IP service providers, that maintains interconnection rules that impose obligations on some carriers but not others, that collects universal service monies from one set of providers but not from the emerging competitors or others who benefit from the network, and that continue to tax cable and telephony while exempting other service providers. The challenge, accordingly, is to level the playing field so that market-based competitive forces are not skewed in ways that favor one form of communications services over another.

Municipal broadband and national law

In the midst of the telecommunications ferment, the municipal broadband debate is heating up at the national level. There are several motives. Some municipalities want to diversify their revenue opportunities. Some are concerned about the need to make their community more attractive to their citizens. Others are attracted by what appears to be an opportunity to provide less expensive wireless broadband services, both for governmental and commercial purposes. And as the interest in municipal broadband initiatives has grown, some states have begun to consider policy issues, in part because incumbent carriers advanced their concerns. The most notable instance that had national implications occurred in Missouri.

Supreme Court has upheld that states have the right to establish laws controlling their subdivisions including towns.

In 1997, Missouri legislators passed a law that prohibited political subdivisions in the state from offering telecom services. The law was challenged by a group called the “Missouri Municipal League” and by the Missouri attorney general. The challenge was based on the petitioners’ contention that the Telecommunications Act of 1996 stated that no state or local statute can limit “any entity” from providing interstate or intrastate telecom services. In response, the U.S. Supreme Court ruled in March 2004 that states could—contrary to the Missouri League’s views—impose laws precluding municipal interventions, effectively upholding the practice in approximately a dozen states, where state law forbade municipal provision of communications services. The Supreme Court’s 8-to-1 decision, written by Justice Souter, declared that the class of entities contemplated under the Telecom Act “does not include the state’s own subdivisions” and the Court went on to reject the League’s claim that allowing municipalities to offer telecom services would necessarily enhance the public interest by promoting

competition for those services.⁸¹ Justice Souter wrote that allowing municipalities to sell telecommunication services could lead to "strange and indeterminate results" in interpreting the law.

The Supreme Court was careful to note that the decision turned only on whether the Telecom Act could be interpreted to preempt a state's rights to regulate itself and its subdivisions. The Supreme Court's ruling therefore does not address whether municipalities are actually harmful to the system or whether such approaches are appropriate uses of public assets.

Congress has pending legislation—pro and con—regarding municipal broadband services.

More recently, at the national level, on May 26, 2005, U.S. Representative Pete Sessions of Texas introduced federal legislation to bar municipal broadband networks in areas across the country where private companies offer broadband services. While grandfathering existing government-sponsored operations, HR 2726 ("Preserving Innovation in Telecom Act of 2005") proposes "neither any State or local government, nor any entity affiliated with such a government, shall provide any telecommunications, telecommunications service, information service, or cable service in any geographic area within the jurisdiction of such government in which a corporation or other private entity that is not affiliated with any State or local government is offering a substantially similar service."⁸²

A pro-municipal website—Save Muni Wireless—rejoined about Sessions' draft that "[t]he bill bans a state or local government from providing any telecom service, whenever a private corporation is offering "substantially similar service" "in any geographic area within the jurisdiction of such government . . . in an underserved urban neighborhood that has no access, but has neighbors a few blocks away that do have access [and] in a rural area where a small part of a county has broadband and the rest of the county is dark."⁸³

In a more formal response to the Sessions bill, on June 22, 2005, U.S. Senators John McCain of Arizona and Frank Lautenberg of New Jersey introduced the "Community Broadband Act of 2005" that would permit municipalities to offer broadband services.⁸⁴ Congressional sources indicated that the senators hope to remove all barriers to broadband deployment by striking down laws that are now in force in 14 states that restrict municipalities from establishing broadband systems. The contention is that, in removing these "barriers," the bill would foster more ubiquitous affordable broadband availability.

⁸¹ See Supreme Court of the United States, *Nixon, Attorney General Of Missouri V. Missouri Municipal League et Al. Certiorari To The United States Court Of Appeals For The Eighth Circuit No. 02-1238*. Argued January 12, 2004—Decided March 24, 2004, available at <http://a257.g.akamaitech.net/7/257/2422/24mar20041200/www.supremecourtus.gov/opinions/03pdf/02-1238.pdf>.

⁸² The proposed bill reads in full, "To prohibit municipal governments from offering telecommunications, information, or cable services except to remedy market failures by private enterprise to provide such services. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, SECTION 1. SHORT TITLE. This Act may be cited as the 'Preserving Innovation in Telecom Act of 2005'. SEC. 2. PROHIBITION ON MUNICIPAL SERVICES.

(a) Amendment- Section 253 of the Communications Act of 1934 (47 U.S.C. 253) is amended by adding at the end the following new subsection:

`(g) Provision of Services by State and Local Governments and Their Affiliates-

`(1) PROHIBITION- Effective 60 days after the date of enactment of the Preserving Innovation in Telecom Act of 2005, neither any State or local government, nor any entity affiliated with such a government, shall provide any telecommunications, telecommunications service, information service, or cable service in any geographic area within the jurisdiction of such government in which a corporation or other private entity that is not affiliated with any State or local government is offering a substantially similar service.

`(2) GRANDFATHER PROVISION- Paragraph (1) shall not prohibit a State or local government or affiliated entity thereof from providing in any geographic area within the jurisdiction of such government any service that such government or entity was providing on the date of enactment of the Preserving Innovation in Telecom Act of 2005.'

(b) Conforming Amendment- Subsection (f) of section 621 of the Communications Act of 1934 (47 U.S.C. 541(f)) is repealed."

⁸³ "Why the Sessions Bill is Misleading," (June 1, 2005) Save Muni Wireless available at <http://savemuniwireless.org>.

⁸⁴ *McCain, Lautenberg Take on Telco Firms Over Broadband* (June 22, 2005), CongressDaily.

Summary national framework

To summarize the national legal framework, the Telecom Act and the FCC have committed to creating competition in the local telephony market and have provided incentives for the deployment of advanced services. More recently, legislators in Congress have become increasingly concerned that the Telecom Act should be rewritten to provide systems to cope, not with failed competition, but with rapidly emerging competitive forces. The clear rule imposed in the Telecom Act and the motivation in the movement toward a legislative re-write is that communications markets should not be damaged by anti-competitive factors – historically interpreted as an incumbent using its position of market dominance.

A second important legal development is the Supreme Court’s decision that a state legislature has the right to regulate itself and its subdivisions, and, at least in this instance, the municipalities do not have rights that supersede those outlined by the state legislatures. In light of the Supreme Court’s ruling, the activity in the various state legislatures takes on additional importance.

In Congress, there are now two opposing bills that, on the one hand, would limit municipalities from competing where the private sector is providing a service, and, on the other hand, would permit municipalities to offer broadband to foster competition. The congressional activity highlights the fundamental divide about policy, with both camps contending that their bills are pro-competitive.

State communications policies and statutes

There is a significant amount of state activity surrounding municipal broadband services, as summarized in table.

Today twenty-three states have enacted, or are considering, legislation that addresses government-owned communications networks, typically providing restrictions where service is already provided by private enterprise. Twelve of those states – Arkansas, Florida, Minnesota, Missouri, Nebraska, Nevada, Pennsylvania, South Carolina, Tennessee, Texas, Utah, and Washington – now have laws that limit future public broadband projects, while permitting existing initiatives to continue operating. Two states – Maine and Virginia – have passed legislation that generally supports municipal provision of telecommunications and broadband services, with some safeguards. The data on existing state legislation and key summary insights are included below in **Table 32**.

In addition, **Table 33** provides data and summary insights on recently proposed state legislation, including both proposals for new statutes and amendments to existing legislation. There are currently three active proposals for new state legislation in Michigan, Oregon, and West Virginia, along with a proposed amendment in Illinois (currently delayed by its sponsor).

Table 32: State legislation on municipal broadband

| State | Statute | Summary |
|----------|---|---|
| Arkansas | Ark. Stat Ann. §23-17-409 | Governmental entities may not provide, directly or indirectly, basic local exchange service. Governmental entities owning an electric utility or television signal distribution system may make any telecommunications capacity available to the public only after reasonable notice to the public and a public hearing. However, municipalities may not use such capacity to provide basic local exchange service. |
| Colorado | SB 05-152 - signed by the Governor on June 3, 2005; | Local governments, before providing cable television service, telecommunications service, or advanced service are required to hold an election on the issue of whether to provide the service. Elections are not necessary if no private provider offers the |

| State | Statute | Summary |
|-----------|---|--|
| | creates §§29-27-101 – 304 | services anywhere within the boundaries of the local government and the incumbent will not provide the service. Local governments are also prohibited from granting themselves any undue preference and are required to apply ordinances, rules and policies equally to themselves and private providers. |
| Florida | Fla. Stat. §166.047 SB 1322 – signed by the Governor on June 2, 2005 | A governmental entity proposing to provide a communications service shall hold no less than 2 public hearings, no less than 30 days apart and must consider various factors such as whether the service is currently being offered in the community and, if so, whether the service is generally available throughout the community. The government entity must make available to the public a written business plan containing, among other things, a plan to ensure that revenues exceed operating expenses and payment of debt service within 4 years. The entity may not price any service below cost using cross-subsidies. Separate and accurate books and records must be maintained in accordance with GAAP, and shall be made available for audits. |
| Iowa | Iowa Code Ann. §388.10 | Applies only to local exchange services. Municipal utilities may not : 1) Use general fund moneys for the ongoing support or subsidy of a telecommunications system; 2) Provide any city property or services to provide telecommunications systems or services at a cost less than the reasonable cost of such property or services; 3) Provide any other city service to a telecommunications customer at a cost which is less than would be paid if the person was not a telecommunications customer; 4) Use funds or revenue from electric, gas, water, sewage, or garbage services to cross-subsidize the system or service used to provide LEC services. Municipal utilities must: 1) Maintain records which record the full cost accounting; 2) Adopt rates that reflect the actual cost of providing the service; 3) Comply with all requirements of the city which apply to any other provider of local exchange services. |
| Louisiana | SB 126 – Enacted on 7/5/2005. | Allows a local governing authority to provide certain telecommunications services only if a majority vote of that authority calls an election on whether or not the local government shall provide the proposed services. An election held for authorization to issue bonds to finance such provision shall be sufficient to satisfy the election requirement. If a local government provides such service, any obligation of any other person to provide such service shall be suspended. |
| Maine | LD 1128 – Enacted on May 20, 2005 | Clarifies a municipality's authority to become a provider of wireless Internet access. In addition, several state agencies are directed to study the following: the technology available for creating wireless Internet access throughout rural and urban municipalities in the State and its estimated cost; the various funding resources and strategic partnerships that may be available to municipalities to deliver wireless Internet services to their communities; and the long-term educational and economic benefits that could be derived from municipalities' becoming Internet service providers and the benefits to the State. The final report is due by September 12, 2005. |
| Minnesota | Minn. Stat. §237.19 | Minn. Stat. §237.19 provides that in no case shall a municipality construct or purchase telephone exchange plant until such action is authorized by a majority of electors voting on the proposition at a general election. If the proposal is to build a new exchange where an exchange already exists, 65% of those voting must vote in favor. |
| Missouri | Mo. Rev. Stat. §392.410 | Mo. Rev. Stat. §392.410 provides that no political subdivision shall provide to the public or to a telecommunications provider telecommunications services or facilities for which a certificate of authority is required. However, a political subdivision is not restricted from providing telecommunications services or facilities: (1) For its own use; (2) For 911, E-911 or other emergency services; (3) For medical or educational purposes; (4) To students by an educational institution; or (5) Internet-type services. |
| Nebraska | Neb. Rev. Stat. §§86-575 – 86-577 LB 645, amends the statute – Enacted on June 3, 2005 | Except as provided elsewhere in the statutes, a political subdivision of the state that is not a public power provider shall not provide on a retail or wholesale basis any broadband services, Internet services, telecommunications services, or video services (grandfathered prior to 1/1/05). A public power provider shall not provide these services on a retail basis (grandfathered prior to 1/1/05) or on a wholesale basis (terminates 12/31/07). Nothing prohibits the foregoing entities from providing such services to themselves for their own internal use. In addition, a Broadband Services Task Force is created to study a number of specific issues surrounding the potential provision of any broadband services, Internet services, telecommunications services, or video services by political subdivisions of the state or public power suppliers. The task force is to submit a report on its work by December 1, 2006. |

| State | Statute | Summary |
|----------------|--|---|
| Nevada | Nev. Rev. Stat. §§268.081 – 268.088 | The governing body of an incorporated city whose population is 25,000 or more shall not sell telecommunications service to the general public. The governing body may purchase or construct facilities for providing telecommunications that intersect with public rights-of-way after a study determines it is in the public interest. “Telecommunications” and “Telecommunications service” have the meanings ascribed to them in 47 U.S.C. §153. |
| Ohio | Chapter 1332 – Fair competition in Cable Operations | Provides conditions under which it is permissible for political subdivisions to provide cable services, primarily non-discrimination provisions. Provides for safeguards with respect to spending public money, including the requirement for a financing plan and the opportunity for the electorate to demand majority approval by referendum. Requires political subdivisions owning cable operations to prepare and publish regular financials. |
| Pennsylvania | HB 30 (2004 Session) – Enacted 12/2004 | In general, a political subdivision may not provide to the public for compensation any telecommunications services, including advanced and broadband services, within the service area of a LEC operating under a network modernization plan. The prohibition does not preclude continued provision of services by a political subdivision of the same type and scope as are being offered as of January 1, 2006. In addition, a political subdivision can offer advanced or broadband services if the LEC does not agree to provide data speeds requested by the subdivision (if the LEC agrees, it must provide the services within 14 months of the request). |
| South Carolina | S.C. Code §§58-9-2600 – 58-9-2650 | Regulates the provision of telecommunications services by an agency or entity of the State or a political subdivision of the State. Generally places restrictions, procedural requirements and imputed costs on the provision of retail and wholesale telecommunication services by a government-owned service provider. Government-owned providers must be subject to regulation by the PSC, must not receive anti-competitive financial benefits, and must not receive cross-subsidies from other government activities. In calculating rates, the government-owned provider must impute private sector cost of capital and taxes/licensing fees/taxes/etc. required of private sector providers. There are also requirements to keep separate books and to provide an annual accounting of financial results. |
| Tennessee | Tenn. Code Ann. §§7-52-401 – 7-52-407 Tenn. Code Ann. §§7-52-601 – 7-52-611 HB1403, amending §7-52-604 (approved June 7, 2005) | Tenn. Code Ann. §7-52-402 states that every municipality operating an electric plant may provide telephone, telegraph, or telecommunications services based on authorization by the board or supervisory body having responsibility for the electric plant. Municipalities offering telecommunications services shall not provide subsidies for such services except that they may dedicate a reasonable portion of the electric plant to the provision of such services and they may lend funds to the operations at a rate not less than the highest rate it is earning on invested electric plant funds. In addition, a municipality providing telecommunications services shall make tax equivalent payments with respect to such services in the manner established for electric systems. Tenn. Code Ann. §7-57-601 provides that each municipality operating an electric plant has the power to provide cable service, two-way video, video programming and Internet service; except (i) where a private CATV operator is providing cable service to 6,000 or fewer subscribers, and (ii) where an existing telephone cooperative has been providing cable service for not less than 10 years. In order for a municipality to commence operations there are requirements to file a detailed business plan/cost-benefit analysis, hold a public hearing, and hold a public referendum. There is a prohibition on cross-subsidization. HB1403 adds a new subsection to Section 7-52-604, stating that (with 2 exceptions) after the effective date no additional municipal electric system shall apply for or be granted authorization to provide services under §7-52-601 until February 1, 2006, at which time the general assembly will receive and consider a report from the comptroller evaluating electric systems that offer such services. |
| Texas | Texas Code §§54.201, 54.202 and 54.2025 | A municipality or municipal electric system may not offer for sale to the public a service which requires a certificate of convenience and necessity (i.e. telecommunications services) or nonswitched telecommunications services. The Commission may not grant a certificate of convenience and necessity to a municipality. A municipality or municipal electric system can |

| State | Statute | Summary |
|------------|---|--|
| | | lease its dark fiber on a nondiscriminatory basis. |
| Utah | Utah Code §§10-18-101 - 10-18-306 | Establishes specific requirements for when a municipality may provide cable TV service or public telecommunications service to one or more subscribers. Requirements include: (i) a preliminary public hearing, (ii) a feasibility study, (iii) a determination that revenues will exceed costs in an amount sufficient to cover debt service, (iv) public hearings, and (v) adoption of the feasibility study by resolution of the legislative body. The legislative body can call an election on whether or not to offer these types of services. Municipalities must establish enterprise funds for accounting purposes. A municipality may not cross-subsidize its cable TV or public telecom services. The municipality may not discriminate against the competing providers of the same services. Provides specifies conditions under which municipalities can issue bonds to fund cable TV or public communications operations. |
| Virginia | Code of Virginia §§15.2-2160 and 56-265.4:4 | <p>Section 15.2-2160 provides that any locality that operates an electric distribution system may provide telecommunications services, including local exchange service, upon receiving certification under 56-265.4:4. General provisions include a prohibition against cross-subsidization (unless no services are offered by private providers), annual financial reports, and access to the facilities by for-profit providers.</p> <p>Section 56-265.4:4 allows the Commission, under certain circumstances and after notice and an opportunity for a hearing, to grant any county, city or town that operates an electric distribution system a certificate to furnish local exchange telephone service. Provides for safeguards to protect public interest issues and competition with private providers. Includes safeguards to ensure appropriate pricing and limits on cross-subsidization (unless no services are offered by private providers). Imposes some financial reporting requirements. Recipients of certificates under this section may provide Internet services, data services, and any other communications service; does not include cable TV or other multi-channel video service.</p> |
| Washington | RCW §54.16.330 | A public utility district in existence on June 8, 2000, may own, improve, and/or operate any telecommunications facilities within or without the district's limits for the district's internal telecommunications needs and for the provision of wholesale telecommunications services within the district and by contract with another public utility district. The Code does not authorize public utility districts to provide telecommunications services to end users. For provision of wholesale telecommunications there are safeguards against discriminatory pricing, financial reporting requirements, and fair-dealing provisions. |
| Wisconsin | 2003 Wisconsin Act 278 - Wisconsin Statutes § 66.0422 | Establishes requirements applicable to municipal provision of cable television, telecommunications, or Internet access services. No local government may enact an ordinance or adopt a resolution authorizing the local government to construct, own, or operate any facility for providing cable service, telecommunications service, or broadband service, directly or indirectly, to the public except under limited circumstances. The municipality must (i) conduct a cost-benefit analysis, (ii) make the analysis available to the public, and (iii) hold a hearing. There are provisions prohibiting cross-subsidization and requiring market rates (reflecting the cost of private competitors). Specific exceptions include (i) a municipality with CLEC status and adoption of an advisory referendum, (ii) broadband service provision in the absence of private providers, (iii) nondiscriminatory wholesale broadband service, and (iv) a grandfather clause for 2 existing municipal cable TV systems. |

Source: Balhoff & Rowe, LLC, and state legislatures.

Table 33: Proposed state legislation on municipal broadband

| State | Proposed Legislation | Summary |
|---------------|--|---|
| Illinois | SB 499 – Consideration delayed by sponsor | An amendment was offered that would have prohibited political subdivisions from selling telecommunications services either to the public or to a telecommunications provider. |
| Indiana | HB 1148 – No longer under consideration | HB 1148, if enacted, would have prohibited municipalities that were not providing communications service prior to or on June 30, 2005 from providing such services if the service was already being provided by a private sector entity (or if such an entity indicates an intent to provide such service within 9 months time). The bill would have imposed certain conditions to safeguard against cross-subsidization. |
| Iowa | HF 861 – Failed to pass prior to the end of the legislative session) | The bill would have imposed various requirements on a municipal planning to provide telecommunications service. The requirements included conducting a cost-benefit test and approval by the city voters . |
| Michigan | HB 4600 and SB 528 - Referred to Committees | Both bills would prohibit a governmental entity from providing a communications service except for the use of the entity itself. |
| Ohio | HB 591 – Not active | This bill would have extended to municipal providers of telecommunications services similar restrictions and requirements that currently apply to municipal providers of cable services. |
| Oregon | HB 2445 | Would impose requirements on local governments with respect to provision of telecommunications service by local government. Requirements include cost-benefit projection, a hearing and a vote. |
| Texas | HB 789 & SB 21 – Passed the House in Special Session | The broad telecom reform bill, as passed, appears not to have extended and broadened the existing statutory barrier to limit municipal provision of telecom, information technology or broadband services. |
| Virginia | HB 2395 – Died in committee | Would have allowed any locality to establish wireless authorities to provide any communications services not generally available from at least three private-sector providers. |
| West Virginia | SB 740 – Substitute bill passed Senate and is in House committee | Electronic Telecommunication Open Infrastructure Act (ETOPIA), as amended, calls for the creation of a task force to study methods to stimulate broader availability of competitive or advanced services. A report is due by 11/1/05. |

Source: Balhoff & Rowe, LLC, and state legislatures.

There are several points of note in the current legislation and the proposed laws:

- The states with laws that generally prohibit or restrict municipalities from owning or running communications services (including telecommunications, Internet, broadband, or cable television) and providing retail and/or wholesale service or facilities are Arkansas, Missouri, Nebraska, Nevada, South Carolina, Texas, Utah, Washington and Wisconsin.

- The states with laws that generally provided limited authorization for municipal provision of communication services (including telecommunications, Internet, broadband, or cable television), typically with safeguards, are Iowa, Maine, Ohio, Pennsylvania, Tennessee, Utah and Virginia.
- The states that require a distinct process involving elections or hearings are Colorado, Florida, Louisiana, Minnesota, Ohio, Tennessee and Utah.
- Most states that have passed legislation, whether restricting, limiting or allowing municipal provision of telecommunications, cable TV or broadband services, provide limitations to prohibit anti-competitive behavior on the part of the municipality (i.e. cross-subsidization, below-market rates, and regulatory parity).
- The proposed legislation in Michigan would generally prohibit governmental entities from providing communications service, while the proposed Oregon legislation can be characterized more as allowing limited authorization with restrictions; the bill in West Virginia calls for a creation of a task force to study the issues, and the proposed Illinois amendment would add restrictions on the ability of municipalities to provide telecommunications services or facilities.
- Maine and Nebraska, as part of a legislative mandate, established task forces to explore the issues surrounding municipal provision of telecommunications, cable TV, and/or broadband services, with reports due by September 12, 2005 and December 1, 2006, respectively. In addition, a recently passed Tennessee bill calls for a report from the Comptroller evaluating the provision of cable services by municipal electric systems, with the report due on February 1, 2006.
- Based on this brief outline, it might be further summarized that state legislation is focused on . . .
 - Requiring the deliberations of citizenry concerning a governmental activity—communications service—that is controversial,
 - Imposing clear rules that prohibit use of anti-competitive advantages, and
 - Where municipal interventions are allowed, establishing financially-independent operations that do not rely on cross-subsidization.

State legislatures are concerned about distortions to the marketplace, and have introduced laws focused on protecting citizens' rights to vote on the new initiatives, and protections against use of anti-competitive advantages.

If conclusions can be drawn from the legislative texts and the proposed statutes, it is that legislatures are increasingly concerned about distortions to the marketplace. Municipal proponents regularly describe the legislative lobbying of the incumbent carriers as “anti-competitive” in limiting municipal operations. However, the laws that have been enacted and those that under consideration often could be represented as pro-competitive in requiring the vote of citizens about expensive and relatively higher-risk “utility” expansions, and in mandating that the municipality not distort the marketplace by using special advantages.

While there are clearly many more issues to be probed concerning policy in this debate, this brief review highlights that the policies are confused as the polar opposite positions appear to claim the same moral high-ground—promotion of competition. The political debate will likely prove an interesting study as the Supreme Court has staked out a “states’ rights” policy that suggests that the states have the right to

determine whether their municipalities will be permitted to provide communications services, while the McCain-Lautenberg bill appears to have a “municipal rights” orientation. The pro-municipal bills are apparently based on the belief that it is appropriate for municipalities to compete with the private sector, and they effectively permit municipalities to make choices and assume responsibilities for the successful or failed outcomes. The financial and policy consequences are assumed to be the longer-term correctives in the pro-municipal framework.

Chapter 6: Policy-Based Decision-Making

Civic leaders and citizens are faced with a confusing set of questions about government-sponsored broadband services. There are technology choices, policy questions, opportunities for new revenues, and hardened positions for and against municipal entry into broadband services. The debate is nearly always complex and often emotional, and the effect is sometimes paralyzing.

This section suggests that it is necessary and responsible that municipal leaders consider the broadband benefits for their communities, but there are fundamental issues more basic than whether to build or not build a network. Accordingly, this section focuses on developing an organized approach to policy-based decision-making about stimulating broadband growth within communities. The process begins with policy principles and moves through a graduated set of tactical approaches or commitments that might follow defined patterns.

Principles for decision-making

Municipals should develop frameworks for evaluating broadband initiatives, based on principles.

Principles appear to be the appropriate starting point in developing a framework for policymakers who are considering broadband challenges. While not all municipal leaders will agree, the authors have attempted to distill insights from the previous sections and, in particular, the legislative perspectives from Chapter 5. The principles are the following:

- Government generally should support, and should avoid competing with, a functioning private sector;
- Government should dedicate itself to improving competitive systems and behaviors, particularly in a world emerging from often outmoded monopoly systems;
- Government should minimize the risk to public assets by considering graduated commitments to solving problems; and
- Governmental intervention should involve targeted solutions to more specific community goals such as resolving concerns about the “digital divide” or other social issues (education, healthcare, etc.).

Support rather than compete with the private sector

The public sector should avoid duplicating services provided by private enterprises.

A widely-held principle is that the public sector should avoid duplicating services that are relatively well provided by the private sector. The simple view is that there are limited assets available to businesses or governments, and, short of market failures, competition with a functioning private sector is effectively wasteful of resources that might be committed to education, healthcare, the underprivileged, and other social goals. *The legislation in the previous section highlighted the growing concern of lawmakers that public intervention represents a threshold event, particularly when there is already effective competitive communications activity.* The constructive practical insight from the legislation is that citizens should be consulted before so important a step is taken. The principle is founded on the insight that something is occurring that is fundamentally different from the fulfillment of other municipal obligations. Citizens should be informed and allowed to consider so significant a transition.

If there are multiple providers of services, and networks are expanding, while prices are falling and the value proposition is rising, it appears that government intervention is less justifiable and risk is increased. Not all parties will agree with this principle, as noted in the previous section, but the principle appears correct in a free-enterprise system, unless there is a clear and continuing market failure. As private-sector activity increases, government interventions that might once have made sense become harder to justify. The first principle, therefore, is that municipalities should do all in their power to support rather than directly compete with the private sector.

Foster improved competitive systems and behaviors

As monopoly systems break down, municipals have the opportunity to create new incentives for the private sector.

Among the fundamental challenges today, policymakers recognize that old monopoly-based regulatory systems are breaking down or, worse, are impeding appropriate investment. Governmental agencies have many systems that should be revisited to determine whether they provide meaningful incentives or impose disincentives on long-term growth. Examples include licensing and franchising rules, taxation schemes that apply unevenly, burdensome regulatory filings, rights-of-way assignments, access to “vertical” municipal plant for antennae, and many others.

Competitive law and policy regarding governmental intervention have clear objectives. Government has traditionally responded to market failures, to abuses of market power, and to the need for promoting economic growth. However, government today finds itself coping with rapid change to its legacy policy systems so that it can appropriately set rules, regulations, fees, access and standards, all in a way that provides correct market signals. Matthew Spitzer, Dean of the University of Southern California Law School is reported as saying that “I worry about the political economics of it [a government communications network]. Once the city gets into a business that's directly competitive with private companies, there are temptations to regulate the private companies in ways that disadvantage them.”⁸⁵

Minimize risk to public assets through graduated strategies

A fundamental principle for individuals, for private enterprise, and for the public sector is that risk should be managed. In the case of municipal public networks, the proponents sometimes suggest that there is risk in *not* committing to economic development through the

⁸⁵ Jim Hu and Marguerite Reardon, “Cities brace for broadband war,” May 2, 2005, Political Connections of News.com at http://news.com.com/Cities+brace+for+broadband+war/2009-1034_3-5680305.html?tag=nl.

sponsorship of broadband systems. However, if the public goals for broadband can be achieved with lesser risk, it seems that the public interest is served more prudently. Government, therefore, should consider how to accomplish its goals through approaches that graduate the degree of risk borne by its citizens.

In private enterprise, investors are paid a higher premium to assume risk. For private enterprises subject to economic regulation, risk assessment is used to set authorized rates of return, and regulators attempt to mitigate other risks, as through “ring fencing” separate affiliate requirements. And, in the private sector, regulated or unregulated, investors often suffer the negative consequences or enjoy the benefit of the commitments they made and for which they are directly compensated. *Investors are therefore risk-takers with appropriate returns assigned by regulators or the markets on the basis of significant informational disclosures protected by various securities agencies. By contrast, there is no effective equivalent – in terms of disclosure or direct financial benefit – to the taxpayer or ratepayer in municipal operations.* Ultimately, either the customer, through increased charges or diminished service, or the taxpayer must bear the risk that would otherwise be borne by investors.

Taxpayers and ratepayers should bear the least amount of risk, consistent with the public interest.

The issue of risk is particularly important in light of the recent history of telecommunications that has been roiled by changing technologies, operating failures and shifting product sets. There are clearly opportunities in the space, or investors would have totally abandoned the industry, but the financial failures of municipalities and of private enterprise have meted out important lessons, particularly over the last seven or eight years. The reality is that communications is a highly volatile marketplace. The volatility arises from the high costs of networks, huge customer care obligations, shifting consumer needs, competitive responses, and other ongoing operating factors. Municipalities should be asking whether there are alternatives to achieve their goals, while minimizing the risks imposed on its citizens.

The economic insight is spelled out by Alan Deardorff of the University of Michigan. He notes that society is best served by optimal use of resources, which, in principle, could be achieved by a central planner, but “[i]n any realistically complex economy, . . . so many different interrelated things are going on at once that to calculate the optimal levels of all of them would be extremely difficult, and to gather the information needed to do this would very likely be impossible. Instead, a market economy acts automatically as a sort of computer that does this calculation without any planner having to get involved.”⁸⁶

Focus public resources on goals that the private sector cannot or will not independently target

Municipals should target aid and programs to serve the social goals of the community, while working to avoid unnecessary conflicts.

Municipalities cite various goals that are not necessarily the same as those of private enterprise. The governmental sponsors of fiber and wireless networks point to concerns about the “digital divide” and the needs of underprivileged inner city residents who require access to electronically-based educational sources. The concerns are clearly important, and merit the attention of municipalities. However, the more precise question is about the most effective methods by which to meet those needs. Building competitive networks in communities where there is already competition may not be the most effective use of public resources and may actually create new and unnecessary problems. It appears to be a wise principle that communities should focus on specific objectives in a way that defines social or economic goals. Then the community should consider the various methods whereby those goals can be met, while minimizing other risks and problems. For example, demand-side strategies focused on under-participating elements of society, or targeted wireless or wired access in specific geographies, or economic incentives for private enterprise appear to be more dedicated approaches in accomplishing the specific objectives. There is less likelihood of waste or conflict if the precise governmental interest is targeted, rather than creating a full competitive network that could raise the possibility of unintended consequences, including anti-competitive policy or increased financial obligations.

⁸⁶ Alan Deardorff, *The Economics of Government Market Intervention, and Its International Dimension*, University of Michigan (February 10, 2000), p. 7.

Specific tactical alternatives available to communities

Using the principles outlined above, communities should recognize that there are more than two fundamental options. Their choices are not confined to choices about whether to build or not build some sort of broadband network. The reality is that there are a wide range of alternative policy choices that could include more efficient use of assets and minimization of municipal risk.

MIT study paper suggests a tactical framework based on government's roles as broadband user, regulator, financier and network developer.

In a study paper in 2003 prepared by the Massachusetts Institute of Technology, for example, Sharon Gillett, William Lehr and Carlos Osorio proposed four general approaches by which government might provide incentives for broadband services in their communities.⁸⁷

- *Government as broadband user* works to attract private-enterprise broadband investment through demand-side policies. This approach involves governmental leadership using their opportunity as a major telecommunications customer to evaluate, plan, stimulate or aggregate demand.
- *Government as regulator or rule-maker* enacts or reforms local regulations that could affect private-enterprise activities, including rights-of-way, utility pole attachments, construction codes, cable franchise agreements, and others.
- *Government as financier* can enable subsidies for private broadband networks, including planning or equipment grants, tax or other incentives.
- *Government as infrastructure developer* commits to supply-side policies in which a municipality sponsors some or all the elements of the network provision.⁸⁸

Using the structure from the MIT paper, this section outlines specific approaches that appear consistent with the principles of support for private enterprise, sponsorship of improved competitive systems, graduated commitment to risk, and targeted public interest projects.

Government as broadband user

Local governments concerned about wider availability of broadband services have the opportunity to direct investment in various ways. Among the most effective approaches is to use demand-side incentives and strategies as outlined in **Table 34**. The chart divides the governmental intervention into three categories, which group the potential tactics in terms of demand measurement, stimulation and aggregation. The net effect of the demand-side initiatives is that the private providers can be better informed, while benefiting from a wider market opportunity with reduced risks and lower marketing costs.

⁸⁷ Gillett, Sharon, Lehr, William, Osorio, Carlos, *Local Government Broadband Initiatives* (Massachusetts Institute of Technology) December 3, 2003, available at <http://itc.mit.edu/itel/docs/2003/localgovbrbd.pdf>

⁸⁸ *Ibid.*, pp. 6-7.

Table 34: Government as broadband user—demand-side interventions

| Demand-side intervention | Examples |
|--------------------------|--|
| Measure demand | ▶ Demand assessment to clarify need |
| Stimulate demand | ▶ “Extension” programs to train businesses about Internet usage ▶ Community technology centers--training citizens ▶ Sectoral pilots (E-government, distance education, telemedicine, etc.) ▶ Community information services (Web pages for local business/community groups) |
| Aggregate demand | ▶ Buying Cooperative (Group pricing) ▶ Anchor Tenant (Government’s telecom contract in exchange for broader infrastructure commitment) |

Source: Gillett, Lehr, Osorio *Local Government Broadband Initiatives* (MIT); Balhoff & Rowe, LLC.

A municipality can commit to studies to clarify the level of demand, so it can inform potential private sector companies and attract investment in broadband activities. Government can pay for or provide incentives to profile the needs and the opportunity. Using this approach, a governmental body is effectively using its position as a clearinghouse of information, such as occurred in 1997 when the State of Massachusetts provided seed funding for a survey of Berkshire County. Nebraska is also providing \$2,500 mini-grants in support of planning for technology initiatives.⁸⁹

Municipals can focus on four kinds of demand-side intervention.

The table offers four specific approaches within the second category of demand-side intervention—stimulation of commercial interest. The first suggests that the government should provide incentives or actual training of businesses and other public agencies about use of the Internet. Governments could work with private enterprise that would then teach community groups to more effectively use electronic sources. The second approach involves educating citizens about the use of technology, including underprivileged persons or those without computers.⁹⁰ In such a case, the community may choose to provide computers or incentives to purchase computers to eligible parts of the population (Philadelphia aspires to make computers available as part of a more extensive proposal). Maine Governor Angus King proposed setting aside \$50 million from the state’s revenue surplus to provide every seventh grader a laptop, partially subsidize the teachers’ laptops, and provide technical training and curriculum support.⁹¹ A third strategy is to develop specialized and efficient electronic media for informing the public about government, providing educational resources, and aiding in the development of telemedicine services.

The final demand-side category involves the aggregation of purchasing-activities to make the opportunity more attractive to broadband investors. The most obvious aggregation of demand involves concentrating government’s communications contracts in exchange for commitments by private providers to supply government and private services. The concessions might include commitments to meet social

⁸⁹ See the University of Nebraska’s Technologies Across Nebraska (TAN) initiative in partnership with NITC’s community council, which offers mini-grants to support technology initiatives; <http://www.apt.org/publica/lab/4.html>.

⁹⁰ For example, Ohio’s eVantage program, aids small business owners in learning eBusiness techniques designed to “boost their bottom line”; Ohio small businesses can enroll for \$500 for 36 instructional hours and 30 hours of individualized implementation assistance from Ohio’s Small Business Development Centers; see <http://www.evantage-ohio.com/homepage.htm>.

⁹¹ Hon. Angus King, *From Lunchboxes to Laptops: Give Our Kids Computers Changes Their Future and Maine’s*, (March 2000), available at http://www.papert.org/articles/laptops/lunchboxes_laptops.html. See also, Greg McDonald, *Maine Computer Project Engages Students*, (3 September 2002), available at <http://www.stateline.org/live/ViewPage.action?siteNodeId=136&languageId=1&contentId=14949>.

needs such as those in inner cities. The other suggestion in the table is that government may facilitate cooperative purchasing that could result in lower group-pricing.

Demand-side interventions minimize the cost and risk for communities.

A demand-side focus is especially consistent with the general recognition that advanced networks are being deployed more broadly every year. State utility regulators who focus on broadband issues have for years observed a shift from supply-side to demand-side issues. *Broadband Services in the United States: An Analysis of Availability and Demand (October 2002)*, prepared by the Florida Public Service Commission, is divided into consideration of availability (by technology) and demand-related issues.⁹² The report includes case studies and descriptions of both public-private partnerships and government-sponsored projects. Recommended governmental approaches include avoiding regulations that would undermine market outcomes; providing regulatory certainty through a consistent regulatory scheme; expanding e-government; supporting grass roots efforts, aligning public sector interests with those of broadband providers, and implementing various best practices; equipping those who are not on-line with necessary knowledge and resources; and, pursuing various outreach and support activities at the state level.⁹³ A focus on demand-side strategies appears especially appropriate based on the Federal Communication Commission's release of year-end 2004 data on high speed Internet access, reporting that 95 percent of zip codes had at least one high speed provider and that 99 percent of the nation's population lives in those zip codes.⁹⁴

It is important to note that demand-side initiatives generally minimize the cost and the risk for municipalities, while directing more concentrated commercial activity. Gillett and her colleagues note that "[t]he contract between the government and the private-sector partner needs to be worthwhile for the commercial provider, but at the same time not be so long and exclusive that the government's goal of stimulating competitive deployment is subverted by the creation of a new de facto monopoly for the government's own business."⁹⁵

Government as regulator

Government has the opportunity to reduce costs and regulatory burdens through its role as rule-maker.

One of the principles highlighted at the beginning of this section was that government has a special position as regulator or rule-maker. The responsibility has always been important, but has become more complex as regulatory systems are increasingly in transition. As a result, the complicated schematic that governed telecommunications and cable operators (especially in the urban areas most interested in municipal broadband projects) is now in the process of evolving from monopoly controls to market controls. In this transition, government has the opportunity to use its position as manager to eliminate costly monopoly rules and provide appropriate incentives to businesses. With respect to municipal networks, this strategic approach also raises the question about the conflicts and risk when government is both regulator and service provider. **Table 35** is a short summary of the insights from the MIT study, noting three kinds of policy reform. Those reforms include access to local facilities, coordinated planning efforts with other municipal or government services, and the ability to work with industry-specific regulations that are currently evolving.

⁹² Prepared by the Florida Public Service Commission for the Federal State Joint Conference on Advanced Services, and available at http://www.fcc.gov/jointconference/services_study-oct2002.pdf. The Joint Conference was formed by the Federal Communications Commission in 1999 to help fulfill the vision of Section 706 of the 1996 Telecommunications Act (concerning access to advanced telecommunications capabilities) and includes both FCC and state public utility commissioners.

⁹³ *Id.*, pp. 54-57.

⁹⁴ *High-Speed Connections to the Internet Increased 34% During 2004 for a Total of 38 Million Lines in Service*, (July 7, 2002), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-259870A1.doc.

⁹⁵ Gillett et al., p. 10.

Table 35: Government as regulator—policy reform

| Policy reform | Examples |
|------------------------------|---|
| Access to Local Facilities | <ul style="list-style-type: none"> ▶ Franchising/licensing and rights of way (use of streets and other public property) ▶ Utility pole attachment (rules for adding wires and equipment) ▶ Zoning (rules for facilities placement, esp. wireless antennas) |
| Coordinated planning | <ul style="list-style-type: none"> ▶ Conduit installation during road construction ▶ Antenna siting |
| Industry-specific regulation | <ul style="list-style-type: none"> ▶ Negotiation of cable franchise agreement (Cable system upgrades, networks for public's use) |

Source: Gillett, Lehr, Osorio *Local Government Broadband Initiatives* (MIT); Balhoff & Rowe, LLC.

The table summarizes issues related to the government’s ability to make its community more attractive to private enterprise. Regulatory reform can lower cost, diminish risk, and reduce the time required for private-sector commercial build-outs. The first category of potential policy reform points to the use of public property to support the transmission plant of private-sector broadband networks. After lengthy approval processes, wireless antennae are frequently sited on elevated community towers or buildings, or conduits are often used or installed along roads, in sewers, or on utility poles. Governments can improve the business case of private companies by shortening the permit application processes and considering alternative fee-structures for the use of public property.

A second policy reform might involve more coordination in using city facilities. In May 2005, New Orleans began installation of fiber along with the restoration of its sewer system.⁹⁶ The alternative might have been to allow private enterprise to install fiber or conduit, thereby offloading the business risk, such as occurred in New York City, which opened its conduit to private providers.⁹⁷ The process would involve publication of restoration programs related to distribution facilities that could be used by private enterprise. The city could charge for access or provide the conduit to any private contractor, thereby creating incentives to accomplish its goals, all with a financial risk lower than what is incurred in installing municipally-owned network.

Arguably as important as other policy reforms is the need for the regulators to find pro-competitive systems that streamline industry-specific rules. The legacy regulatory systems have controlled and channeled services in industry-silos. However, it is becoming clear that providers of one or several services including video, data and telephony are competing for the same consumer. Intermodal competitive rules have not been properly reconciled in terms of taxation, franchising, or regulatory reporting.⁹⁸ The regulatory uncertainties and the lack of parity effectively raise the cost of capital and send confused signals to the private sector.

⁹⁶ Press release, May 16, 2005, *Mayor, Sewerage and Water Board Take Next Step With Fiber Optics, Modern Pipe Replacement*, available at <http://www.swbno.org/051605fiberoptics.html>.

⁹⁷ John Mazur, *Commentary: Cities need bandwidth*, CNET (June 2001), available at <http://news.com.com/2009-1033-269131.html>.

⁹⁸ Michael J. Balhoff, *The Current State of Competition in the Communications Marketplace*; Subcommittee on Telecommunications and the Internet, (February 4, 2004), available at <http://energycommerce.house.gov/108/Hearings/02042004hearing1164/Balhoff1850.htm>.

Government as financier

Governments have the opportunity to aid in easing the economic burden associated with building broadband networks. **Table 36** outlines support payments that can be dedicated to providers of services, users that have specific needs, and community groups. The efforts of governments are also critical in reducing regulatory costs, as outlined above. When government uses its role as financier, it intervenes to reduce costs or to offer some specific, usually modest, financial supports or incentives.

Table 36: Government as financier—targeting subsidies

| Subsidies | Examples |
|------------------|---|
| Providers | <ul style="list-style-type: none"> ▶ Grants ▶ Loans (typically at lower-than-market interest rates) ▶ Tax Incentives |
| Users | <ul style="list-style-type: none"> ▶ Equipment ▶ Service (typically for a limited time) |
| Community Groups | <ul style="list-style-type: none"> ▶ Planning grants ▶ Training ▶ Non-profit deployments |

Source: Gillett, Lehr, Osorio *Local Government Broadband Initiatives* (MIT); Balhoff & Rowe, LLC.

Government can direct grants, loans, and other incentives to promote specific goals.

For private network providers, governments can offer grants or loans or tax-advantaged incentives. For example, the U.S. Department of Agriculture’s Rural Utilities Service provides both grants—about \$8.9 million annually—and low-interest funding of approximately \$2.1 billion in support of broadband builds.⁹⁹ Additionally, communities may choose to offer one-time waivers for right-of-ways or for licensing fees. Pennsylvania has a \$3.3 million digital divide grant program that administers federal funds from the Temporary Assistance to Needy Families (TANF) program. In Michigan, Governor Jennifer M. Granholm announced in 2004 that the state would sponsor a new broadband grant program to provide affordable high-speed Internet service to low and moderate income families, based on a grant approved by the U.S. Department of Housing and Urban Development (HUD).¹⁰⁰ Administered jointly by the Michigan Broadband Development Authority, the Michigan Economic Development Corporation, and the Michigan State Housing Development Authority, the program allocated more than \$12 million to-date in loans to broadband providers that invested in regions with 51% or more of low and moderate income families.

Government as infrastructure developer

Government may also provide the infrastructure but does not always have to compete with the private sector. **Table 37** divides the network deployment issues into six categories: (1) targeted users, (2) type of infrastructure, (3) technology issues, (4) services to be provided, (5) government responsibility in the network build and operation, and (6) business model

⁹⁹ See Rural Utilities Services, at <http://www.usda.gov/rus>.

¹⁰⁰ *Michigan to Test New Broadband Grant Program*, Government Technology (September 27, 2004), available at <http://www.govtech.net/news/news.php?id=91573>.

Table 37: Government as infrastructure developer

| Government network deployment | Examples |
|-------------------------------|--|
| Targeted users | <ul style="list-style-type: none"> ▶ Government (including schools, municipal facilities) ▶ Businesses ▶ Residents |
| Type of infrastructure | <ul style="list-style-type: none"> ▶ Ducts or conduit (possibly with dark fiber) ▶ “First mile” network (connections to customer premises) ▶ Interconnection point(s) (e.g. neutrally administered “carrier hotel”) ▶ “Middle mile” connection (backhaul links to other locations) |
| Technology | <ul style="list-style-type: none"> ▶ Wireless (unlicensed or licensed) ▶ Wired (copper, hybrid fiber-coax, fiber) |
| Services | <ul style="list-style-type: none"> ▶ Broadband (Internet access, other data communications) ▶ Video (cable TV) ▶ Voice (telephony) ▶ Data |
| Government responsibility | <ul style="list-style-type: none"> ▶ Finance (bonds: special issue or general obligation) ▶ Build (may contract to private sector) ▶ Operate (may contract to private sector) |
| Business model | <ul style="list-style-type: none"> ▶ Wholesale (local government sells capacity to carriers, or leases, or open access to ISPs) ▶ Retail (local government sells higher-level services to end users) |

Source: Gillett, Lehr, Osorio *Local Government Broadband Initiatives* (MIT); Balhoff & Rowe, LLC.

Communities may choose to provide various broadband services, supporting government services for police, fire personnel, schools and municipal services. The incremental commitment to provide for businesses and residences is a higher-risk undertaking. The infrastructure decisions may involve limited commitments in providing dark fiber for other network providers, or more expensive commitments at \$1,500 to \$3,000 per-premise to deploy the access fiber connections to the residences and businesses in the service area, middle-mile backhaul or carrier hotel services that require relatively higher capacities to justify the expense.

Municipals can support development of networks through cooperative use of public assets or can deploy new assets if the lesser-risk strategies do not work.

The technologies and the operating costs have been examined in Chapter 4 where it was explained that there are tradeoffs between wired—fiber or coaxial—networks and wireless systems. The lower capital expenditures associated with wireless networks result in relatively higher support and operating expenses, but the target market is narrower due to the network’s unsuitability for video and large business services.

Government will be required to make decisions about the financing of the networks, including the possibility of revenue bonds, which are more expensive since they rely on the project’s operating performance and therefore reflect the risk of the undertaking. In the case of general obligation bonds, the government entity is spreading its risk over the public assets which could, by adding higher-risk communications debt, have the effect of raising the cost of other municipal capital.

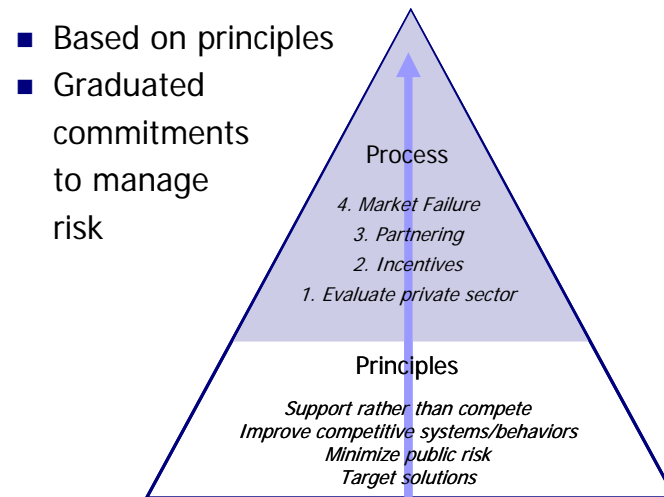
The business model will vary from wholesale to retail, and will include a wide range of rates and penetration assumptions. The wholesale models represented by Lafayette and Philadelphia suggest significantly different assumptions about rates and services, although the business plans remain sketchy in both cases. Alternatively, the model may be a pure retail service as so many of the legacy broadband operations

have been, with rates that may or may not be subsidized. The intention to avoid subsidizations, however, does not ensure that no subsidy will be allocated as is proved in the cases of many the communities outlined in Chapter 2.

A possible decision schematic

This study assumes that a careful and graduated decision process is desirable before a community commits to building its own broadband network and operating that network in competition with private enterprise carriers. Because of the high risk associated with long-term policy and the financial factors in a rapidly changing market, it is proposed that there be a four-stage evaluation process. **Figure 1** provides a graphic representation of principles that serve as the base, and a sequential process that follows four steps.

Figure 8: A possible decision-schematic



Source: Balhoff & Rowe, LLC.

The four sequential steps are summarized in the bullets below, and are consistent with the findings of this report.

- ➔ **Evaluation of whether there is a functioning broadband private sector.** A community should begin by determining whether private-enterprise providers are offering broadband services or whether they are likely to offer broadband services in the near future. The municipality should evaluate the level of broadband services today, trends in pricing, and probable demand for services over the foreseeable future. If there are providers or if it appears that those private-sector businesses are likely to offer the necessary

services, the municipality should attempt to support their efforts, or even consider incentives in exchange for accomplishing social goals and wider deployments. The community should not compete with a functioning private sector, but may choose to further channel the private sector activities through incentives.

A community should commit to a sequential evaluation process to determine whether there is the potential for private-sector competition in the market or, as a final resort, whether it is necessary to own and operate a network.

- **If private sector facilities exist, but are underdeveloped or underutilized, the community should consider incentive strategies.** What combination of public, private, and non-profit strategies might a community employ to provide incentives for increasing use and availability of services? These incentives might include provision of laptops or CPE; longer hours at libraries or more accessible public access sites; community training programs; greater provision of government information and service on-line; and, development of applications and content of greater interest or utility to under-utilizing groups. If there are no private enterprise providers, it should be determined whether the municipality can stimulate a private-enterprise solution—to generate a competitive private enterprise environment and services, while minimizing the risk to the public. In this case, some of the strategies outlined earlier in this chapter might be contemplated, including demand-side stimulation, regulatory incentives and approaches to support the necessary financial business proposition. The incentives should be competitively-neutral unless there is a single provider, and then there might be a time-limit imposed on the municipal-private partnership to ensure that potential future competitors are not excluded from the market.
- **If a private sector company will not serve the community on its own, the municipality should consider a pro-competitive partnership.** If there are no likely scenarios by which private enterprise can be attracted to provide service, it should be evaluated whether some partnership might occur, including the possibility of shared assets or a pro-competitive build involving wholesaling a community network. The municipality will then be offering some of the basic infrastructure while avoiding an anti-competitive exclusion of other providers.
- **Finally and as a last resort, the municipality might choose to incur the risk of owning and/or operating a broadband network.** If lesser-risk options are not possible, the municipality should evaluate whether to assume the responsibility for building and operating its own dedicated network. This scenario is most likely to occur in relatively smaller communities in which no private provider is willing to incur the risk or the subsidy. The community may choose to absorb the risk and even the likelihood that some subsidization occurs, but the best policy appears to involve engaging an informed public that understands the risk and opportunity associated with the commitment.

Summary

Policymakers generally recognize that there are diverse and sometimes competing public interest issues in communications. Broadband is important and government leaders have roles that are far more basic than simply determining whether to build networks. The policy issues clearly include a commitment to create a truly competitive marketplace. However, there are other public interest factors including the responsibility to minimize risk to the taxpayer or ratepayer monies, appropriate use of limited funding sources for distinctly public goals, transparent accountability to the public in representing multiple interests, and protection or stimulation of the economic base. It is suggested here that there are complex and graduated approaches to accomplishing the public interest regarding broadband. The proposed schematic points to a sequential, graduated assessment of whether the public entity is competing with an effectively functioning private sector, whether

incentives might attract more private sector activity, whether partnerships are possible with the private sector, and whether in the last resort it is necessary to build some or all of a broadband network.

Chapter 7: Summary Conclusions and Observations

This study represents an attempt to gather the data and major insights related to the broadband debate.

This study has been an attempt to propose a more disciplined financial and policy view in the hotly-contested debate about whether municipalities should be involved in competing with the private sector. Because of the importance of the topic, municipalities will increasingly be required to dig more deeply into their fundamental roles, into the underlying trends and the likely consequences of their decisions. It is suggested that there are two primary lenses through which a municipality must view a commitment to broadband services. The first focuses on the effects on policy that supports productive competitive commitments. And the second should clarify whether the community's goals merit the specific commitment of capital, with the related financial risks and opportunity costs. Several points might be made in summary.

- Municipalities have a significant role in directing and controlling the flow of capital into their communities. They can focus private sector activity, channel commitments to socially-desirable goals, protect against anti-competitive behaviors, and facilitate incentive programs. This role appears to be the most fundamental role of government, as outmoded communications regulations and incentives are redirected toward economically productive goals.
- Municipal fiber initiatives are most often motivated by the desire to diversify a municipal utility's revenues and reduce costs, which appears to be a business rather than policy motive; policy factors should be carefully weighed as there is the potential for introducing significant anti-competitive factors that could damage the public interest in the future.
- The financial case for municipal fiber is difficult to justify if the municipality owns no other utility assets, as the investment costs appear very high at this time. The financial case for fiber based on the municipality's utility assets is not as clear as many utilities suggest, and the historical data highlight those financial risks. The overwhelming majority of municipalities offering commercial fiber services are reporting operating losses, and virtually all the municipalities evaluated by the authors of this study appear to have operations that will prove to be negative in terms of net present value. The communities may believe that they derive other benefits from those operations, but the negative valuation suggests that there are subsidizations borne by the ratepayers or taxpayers. Those subsidies should be understood and should be explicit commitments by the general citizenry.

Alternatives exist for achieving broadband goals while managing financial and policy risks.

- The positive case for broadband wireless (particularly Wi-Fi) is less clear than many observers assume, as the technologies, investment costs, and public appetite for services are currently evolving. However, there are marketing and operating risks that are likely greater than are modeled in the business cases of municipalities. It is very possible that Wi-Fi networks will prove problematic in the near term but it is more probable that they will prove competitively weak over the next three to five years, in light of alternative technologies.
- Other reasons exist for deploying municipal fiber or wireless broadband, such as a region's economic development or the need to provide for market failures – but those rationales appear less defensible in larger communities in light of the evidence, which is that (1) the economic risks, including damage to competition, likely outweigh any verifiable economic improvement and (2) broadband competitors exist in most of the markets in question (and respond in a manner that usually significantly alters the municipality's business plan).
- The potential for distorting the competitive marketplace is an important factor, particularly in light of the fact that broadband is (1) fiercely competitive and not a natural monopoly in most markets, notably including areas where larger municipal projects have been undertaken or are being considered, (2) can be deployed at a later time without material disadvantage to a municipality and may actually advantage a region if investment costs fall further and technologies grow richer, and (3) can be concentrated at reduced risk by the community leadership through its purchasing power, licensing, and tax advantages, among others.
- Capital investment costs are important, but are part of a financial set of factors that must be analyzed. The other factors include probable operating costs, market demand, and subsequent updates to technologies.
- The widespread demand for speed and capacity is not yet pervasive, and most studies suggest that the “lesser technologies” are meeting the demand in most U.S. markets through graduated deployments that manage capital costs (such as slower rate asynchronous DSL evolving to two way higher speed connections) .
- Alternatives exist for accomplishing a community's goals related to broadband, while managing the financial and other important policy risks (damage to the national goal to create competitive communications markets); those alternatives include governmental incentives related to conduit, reforms of municipal permitting and fee processes, government “anchor tenant” procurement processes, tax incentives, low-interest loans to service providers, reduced charges for other municipal services, etc. The report suggests a graduated and sequential approach that minimizes the policy and financial risks.

Appendix One: Financial Reports of Select Municipal Operations

Ashland Fiber Network

90 North Mountain Avenue
Ashland, Oregon 97520
www.ashlandfn.org

Company Description:

Ashland Fiber Network (AFN) provides connectivity products and services for broadband, data, video, Internet, video conferencing and voice applications in the Ashland area. The high-speed fiber-based network was developed and installed by the City of Ashland Department of Electric Utilities. AFN's cable television franchise agreement became effective in March, 1999, with network construction begun in February, 2000. Construction of the network was completed in July, 2003. AFN's primary competitor in its service region is cable operator Charter Communications.

Recent Developments:

AFN began its network build with \$5.2 million in capital from a bank loan and the municipal electric utility. At that time, the network was expected to require capital outlays of approximately \$6 million. It is estimated that the actual cost was approximately \$8 - \$8.5 million. AFN revised its business plan in 2001 as result of revenue shortfalls and expenses / capital outlays exceeding the initial plan.

In June of 2005, the Ashland City Council unanimously agreed to form a task force to explore options for AFN, to include an outright sale, investing in new technology, developing new product offerings, or keeping the service as is. The Ashland finance department noted that, even assuming a 10% per year revenue growth rate, AFN will not be able to meet payments on the 15-year, \$15.5 million loan the city provided in 2004 to finance construction and operational costs. In May, 2005, the city agreed to subsidize AFN with city electric department revenues.

| Operating Stats | | | | |
|----------------------------|---------------|---------------|---------------|------------|
| | FYE June 30, | | | As of |
| | 2002 | 2003 | 2004 | 12/31/2005 |
| Customer Counts: | | | | |
| Cable TV | 2,499 | 2,961 | 3,100 | 3,209 |
| Residential ISP | 2,323 | 3,040 | 3,435 | 3,718 |
| High Speed Data (Business) | 40 | 34 | 32 | 30 [1] |
| Bulk CATV Service | 139 | 140 | 143 | 145 [1] |
| Net Customer Additions: | | | | |
| Cable TV | | 462 | 139 | 109 |
| Residential ISP | | 717 | 395 | 283 |
| High Speed Data (Business) | | (7) | (1) | (3) |
| Bulk CATV Service | | 1 | 3 | 1 |
| Financial Overview | | | | |
| | FYE June 30, | | | |
| | 2002 | 2003 | 2004 | |
| Revenues | \$ 1,345,369 | \$ 1,981,360 | \$ 2,352,631 | |
| Expenses | 2,971,027 | 3,547,487 | 3,655,359 | |
| Net Profit | \$(1,625,658) | \$(1,566,127) | \$(1,302,728) | |
| Growth Rates: | | | | |
| Revenues | | 47.3% | 18.7% | |
| Expenses | | 19.4% | 3.0% | |
| Net Profit Margin | -120.8% | -79.0% | -55.4% | |

[1] 2005 counts reflect Balhoff & Rowe estimate.

Braintree Electric Light Department Broadband

150 Potter Road
 Braintree, MA 02184
www.beld.com

Company Description:

Braintree Electric Light Department (BELD) is a non-profit public power utility owned and operated by the citizens of Braintree, MA, supplying electric, Internet, and cable television service to the town. BELD was founded in 1892. In 1998, BELD began installation of a HFC system in conjunction with an automated meter-reading project. In December of 1998, the company began offering ISP services to residential and business customers over this fiber-based network. In 2000, BELD was granted a license to provide cable television service in the town. This CATV service is provided over the same HFC network used by the ISP. BELD's network currently serves approximately 95% of the town, with plans to complete the network build in the near-future.

| Operating Stats | | | | |
|--|-------------------------|-----------------|-----------------|--------------|
| | FYE December 31, | | | |
| | 2001 | 2002 | 2003 | 2004 |
| Customer Counts: | | | | |
| Cable TV | 4,000 | | | 5,000 |
| Residential ISP | | 3,500 | | |
| Net Customer Additions: | | | | |
| Cable TV, avg. per yr. | | | | 333 |
| 3-yr. CAGR - CATV Net Adds | | | | 7.7% |
| Financial Overview | | | | |
| | FYE December 31, | | | |
| | 2001 | 2002 [1] | 2003 [2] | 2004 |
| Revenues | \$ 2,230,746 | \$ 4,198,704 | \$ 4,786,028 | \$ 5,338,512 |
| Operating Expenses | 1,914,387 | 3,661,183 | 4,176,519 | 4,286,903 |
| EBITDA | 316,359 | 537,521 | 609,509 | 1,051,609 |
| Depreciation | 444,524 | 557,977 | 502,542 | 526,740 |
| Operating Profit | (128,165) | (20,456) | 106,967 | 524,869 |
| Interest & Other Expense | 173,130 | 260,466 | 204,414 | 163,998 |
| Net Profit | \$ (301,295) | \$ (280,922) | \$ (97,447) | \$ 360,871 |
| Growth Rates: | | | | |
| Revenues | | 88.2% | 14.0% | 11.5% |
| EBITDA | | 69.9% | 13.4% | 72.5% |
| Operating Profit | | NMF | NMF | 390.7% |
| Net Profit | | NMF | NMF | NMF |
| Margins (% of Revenues): | | | | |
| EBITDA Margin | 14.2% | 12.8% | 12.7% | 19.7% |
| Operating Profit Margin | -5.7% | -0.5% | 2.2% | 9.8% |
| Net Profit Margin | -13.5% | -6.7% | -2.0% | 6.8% |
| Selected Balance Sheet Items: | | | | |
| Cash | \$ 1,296,969 | \$ 593,187 | \$ 645,845 | \$ 558,047 |
| Fixed Assets, net | 5,905,717 | 5,701,395 | 4,455,203 | 4,426,938 |
| Total Debt | 5,000,000 | 4,650,000 | 4,150,000 | 3,650,000 |
| [1] In 2002, BELD adopted the provisions of GASB Statements No. 34, Basic Financials Statements for State & Local Governments, making 2002 results not comparable with results for 2001. In addition, BELD Broadband recorded a negative prior period adjustment of approximately \$2.2 million, reflected on the balance sheet as a contra asset in "Investment in Affiliated Company" (the Light Division now holds a \$2.2 million asset in this account). [2] As of year end 2003, Broadband had a \$1.1 million balance in "Advances from Associated Company" (the Light Division holds a \$1.1 million "Investment in Affiliated Companies" current asset). | | | | |

Buffalo Wireless Internet Group

212 Central Avenue
Buffalo, MN 55313
www.bwig.net

Company Description:

Buffalo Municipal Utilities is the locally owned, controlled, and operated utility provider for the city of Buffalo, MN. BMU provides electric, water, lighting, storm sewer, waste water and fiber communications. In addition, through its Buffalo Wireless Internet Group (BWIG), a division of the electric utility, the city provides Wi-Fi wireless broadband access to business (592Kbps & 1.5Mbps services) and residential (192Kbps & 384 Kbps services) customers.

| | FYE December 31, | | | |
|---|------------------|------------|------------|---------------|
| | 2002 | 2003 | 2004E | 2005 Proposed |
| Revenues | \$ 222,189 | \$ 339,996 | \$ 301,830 | \$ 258,000 |
| Expenses [2] | 347,311 | 296,091 | 222,337 | 223,523 |
| Est. Operating Profit | (125,122) | 43,905 | 79,493 | 34,477 |
| Growth Rates: | | | | |
| Revenues | | 53.0% | -11.2% | -14.5% |
| Est. Operating Profit | | NMF | 81.1% | -56.6% |
| Margins (% of Revenues): | | | | |
| Est. Operating Profit Margin | -56.3% | 12.9% | 26.3% | 13.4% |
| <p>[1] Estimated based on City of Buffalo Minnesota, 2005 Capital & Operating Budget (published Dec. 2004); BWIG financials above reflect only revenues & expenses directly allocated to BWIG in Electric Fund historical and budgeted financial report; it is possible that additional indirect costs would be allocated to BWIG in a formal accounting of the operations; excludes revenue & expenditure items grouped under "Fiber Optics" as these are reported independently from BWIG.</p> <p>[2] Includes expenditures labeled "BWIG Mdse for Sale" assuming that this represents COGS, not inventory; excludes the following expenditures labeled "BWIG Capital Outlay" assuming these are capex:</p> | | | | |
| | 2002 | 2003 | 2004E | 2005 Proposed |
| Capital Outlay | - | 18,326 | 15,833 | 20,000 |

BVU OptiNet

15022 Lee Highway
PO Box 8100
Bristol, VA 24203-8100
www.bvu-optinet.com

Company Description:

Bristol Virginia Utilities is a municipally owned provider of electric, water, wastewater and fiber optic service to the greater Bristol, VA, area. BVU OptiNet, the municipality's communications subsidiary, began building its fiber-optic network in 1999. Initially, the service was offered to local schools and government. Upon surveying customers in 2001, OptiNet began pursuing the ability to offer phone, cable TV, and Internet solutions to residential and business customers in its region. Telephone and high-speed Internet services were approved in December 2002, while the company began offering cable TV services in July 2003. Competitors include Sprint, Comcast, Charter Communications, DirecTV and Dish Network.

| | FYE June 30, | | |
|--------------------------------------|----------------|----------------|----------------|
| | 2002 | 2003 | 2004 |
| Revenues | \$ 409,878 | \$ 754,192 | \$ 4,654,103 |
| Operating Expenses | 1,367,409 | 3,073,952 | 4,728,672 |
| EBITDA | (957,531) | (2,319,760) | (74,569) |
| Depreciation | 193,186 | 803,369 | 1,736,444 |
| Operating Profit | (1,150,717) | (3,123,129) | (1,811,013) |
| Interest & Other Expense | 156,763 | 1,290,794 | 1,508,985 |
| Net Profit | \$ (1,307,480) | \$ (4,413,923) | \$ (3,319,998) |
| Growth Rates: | | | |
| Revenues | | 84.0% | 517.1% |
| EBITDA | | NMF | NMF |
| Operating Profit | | NMF | NMF |
| Net Profit | | NMF | NMF |
| Margins (% of Revenues): | | | |
| EBITDA Margin | -233.6% | -307.6% | -1.6% |
| Operating Profit Margin | -280.7% | -414.1% | -38.9% |
| Net Profit Margin | -319.0% | -585.3% | -71.3% |
| Selected Balance Sheet Items: | | | |
| Cash | \$ 13,582,117 | \$ 430,265 | \$ 116,930 |
| Fixed Assets, net | 6,867,711 | 22,919,789 | 31,141,296 |
| Total Accrued Int., Advances & Debt | 21,467,369 | 27,154,791 | 43,081,864 |
| Net Assets (Equity) | (2,220,877) | (6,333,800) | (8,604,729) |

Covington FiberNet/Cable TV/CableNet

1167 Pace Street
 P.O. Box 1527
 Covington, GA 30015
www.covingtonfibernet.com

Company Description:

The city of Covington, GA, provides cable television and residential cable modem broadband service through its Covington Cable division. Cable TV services were offered initially in the late Fall of 1980, and cable modem-based Internet access services were initiated in 1998. Two-way broadband cable modem service was offered in late 2002 through the CableNet division. In addition, the city began providing commercial Internet access and high-speed data connectivity to business customers through its fiber-based CLEC, FiberNet, in July 2002.

| Financial Overview [1] | | |
|---|-------------------------|--------------|
| | FYE December 31, | |
| | 2002 | 2003 |
| FiberNet ("Telecomm Fund") | | |
| Revenues | \$ 74,389 | \$ 105,553 |
| Operating Expenses | 321,388 | 259,096 |
| Operating Profit | (246,999) | (153,543) |
| Interest & Other Expense | 6,875 | - |
| Net Profit | \$ (253,874) | \$ (153,543) |
| Growth Rates: | | |
| Revenues | | 41.9% |
| Operating Profit | | NMF |
| Net Profit | | NMF |
| Margins (% of Revenues): | | |
| Operating Profit Margin | -332.0% | -145.5% |
| Net Profit Margin | -341.3% | -145.5% |
| Cable TV / CableNet ("CATV Fund") | | |
| Revenues | \$ 5,201,253 | \$ 5,231,440 |
| Operating Expenses | 4,697,790 | 5,073,964 |
| Operating Profit | 503,463 | 157,476 |
| Interest & Other Expense | 65,586 | 51,191 |
| Net Profit | \$ 437,877 | \$ 106,285 |
| Growth Rates: | | |
| Revenues | | 0.6% |
| Operating Profit | | -68.7% |
| Net Profit | | -75.7% |
| Margins (% of Revenues): | | |
| Operating Profit Margin | 9.7% | 3.0% |
| Net Profit Margin | 8.4% | 2.0% |
| [1] Covington FiberNet provides high-speed Internet access and telecommunications services to commercial customers, Covington Cable TV provides residential cable TV services, & Covington CableNet provides residential broadband internet service over cable modem. | | |

Click! Network - City of Tacoma

3628 South 35th Street
Tacoma, WA 98409
www.click-network.com

Company Description:

Click! Network is provided by Tacoma Power, the more than 100 year old electric utility serving Tacoma, WA. Click! Network offers residential and business cable TV, high-speed Internet, and broadband services to customers in the city limits of Tacoma. The Click! division evolved from a planned HFC network build by Tacoma Power designed to control its substations. The first cable TV customers were connected to the network in 1998, with its wholesale ISP Advantage product launching in December 1999. The Tacoma network was completed in 2002, including 670 miles of fiber and coax along every street

| Financial Overview - Total | | | | |
|---|-------------------------|---------------|---------------|---------------|
| | FYE December 31, | | | |
| | 2000 | 2001 | 2002 | 2003 |
| Revenues | \$ 6,974,567 | \$ 9,457,367 | \$ 11,197,009 | \$ 13,213,334 |
| Operating Expenses | 11,471,737 | 12,377,259 | 14,218,688 | 15,825,479 |
| EBITDA | (4,497,170) | (2,919,892) | (3,021,679) | (2,612,145) |
| Depreciation & Amortization | 5,203,908 | 6,074,376 | 9,845,472 | 9,682,585 |
| Operating Profit | (9,701,078) | (8,994,268) | (12,867,151) | (12,294,730) |
| Growth Rates: | | | | |
| Revenues | | 35.6% | 18.4% | 18.0% |
| EBITDA | | NMF | NMF | NMF |
| Operating Profit | | NMF | NMF | NMF |
| Margins (% of Revenues): | | | | |
| EBITDA Margin | -64.5% | -30.9% | -27.0% | -19.8% |
| Operating Profit Margin | -139.1% | -95.1% | -114.9% | -93.0% |
| Financial Overview - "Commercial Applications" Only [1] | | | | |
| | FYE December 31, | | | |
| | 2001 | 2002 | 2003 | |
| Revenues | \$ 9,457,367 | \$ 11,197,009 | \$ 13,213,334 | |
| Operating Expenses | 8,884,598 | 10,071,041 | 11,283,715 | |
| EBITDA | 572,769 | 1,125,968 | 1,929,619 | |
| Depreciation & Amortization | 1,664,376 | 2,697,660 | 2,624,438 | |
| Operating Profit | (1,091,607) | (1,571,692) | (694,819) | |
| Growth Rates: | | | | |
| Revenues | | 18.4% | 18.0% | |
| EBITDA | | 96.6% | 71.4% | |
| Operating Profit | | NMF | NMF | |
| Margins (% of Revenues): | | | | |
| EBITDA Margin | 6.1% | 10.1% | 14.6% | |
| Operating Profit Margin | -11.5% | -14.0% | -5.3% | |
| [1] In 2001 and years thereafter, Click! Network began reporting results for two divisions - "Power Applications" and "Commercial Applications"; "Power Applications" generates no revenues, but is allocated a substantial percentage of operating expenses and the majority of D&A. | | | | |

EPB Telecom

536 Market Street

PO Box 182255

Chattanooga, TN 37422-7255

www01.epb.net**Company Description:**

EPB is a non-profit agency of the City of Chattanooga, established in 1935 to provide electric utility services. EPB's Telecom division was launched in early 2000, to provide local businesses with a variety of telecommunications services. EPB Telecom has grown to serve more than 2,300 customers (~14,000 lines) over its more than 100 miles fiber-based network. It is now the 2nd largest local business phone provider in its service area. In late 2003, the company introduced an all-fiber business Internet solution, providing access to up to 500Mbps of bandwidth.

| EPB Telecom | | | | | | | |
|--|---------------------|----------------|----------------|---|---------------------|-------------|-------------|
| Summary Operating & Financial Statistics | | | | | | | |
| Operating Stats - Telecommunications System | | | | Operating Stats - Internet System | | | |
| | FYE June 30, | | | | FYE June 30, | | |
| | 2002 | 2003 | 2004 | | 2002 | 2003 | 2004 |
| Lines | 11,004 | 13,487 | 14,529 | Customers | - | - | 139 |
| Fiber Miles | | 50 | 70 | | | | |
| Employees | | 35 | 35 | | | | |
| Net Additions: | | | | | | | |
| Lines | | 2,483 | 1,042 | | | | |
| Fiber Miles | | | 20 | | | | |
| Employees | | | - | | | | |
| Financial Overview - Telecommunication System | | | | Financial Overview - Internet System | | | |
| | FYE June 30, | | | | FYE June 30, | | |
| | 2002 | 2003 | 2004 | | 2002 | 2003 | 2004 |
| Revenues | \$ 6,047,000 | \$ 8,811,000 | \$ 10,582,370 | Revenues | \$ - | \$ - | \$ 78,000 |
| Operating Expenses | 6,070,000 | 7,992,000 | 8,807,000 | Operating Expenses | 37,000 | 134,000 | 134,000 |
| EBITDA | (23,000) | 819,000 | 1,775,370 | EBITDA | (37,000) | (56,000) | (56,000) |
| Depreciation | 1,110,000 | 1,404,000 | 1,576,000 | Depreciation | - | 6,000 | 6,000 |
| Operating Profit | (1,133,000) | (585,000) | 199,370 | Operating Profit | (37,000) | (62,000) | (62,000) |
| Interest & Other Expense | 1,577,000 | 1,511,000 | 1,488,000 | Interest & Other Expense | 1,000 | 3,000 | 3,000 |
| Net Profit | \$ (2,710,000) | \$ (2,096,000) | \$ (1,288,630) | Net Profit | \$ (38,000) | \$ (65,000) | \$ (65,000) |
| Growth Rates: | | | | Growth Rates: | | | |
| Revenues | | 45.7% | 20.1% | EBITDA | | | 51.4% |
| EBITDA | | NMF | 116.8% | Operating Profit | | | NMF |
| Operating Profit | | NMF | NMF | Net Profit | | | NMF |
| Net Profit | | NMF | NMF | | | | |
| Margins (% of Revenues): | | | | Margins (% of Revenues): | | | |
| EBITDA Margin | -0.4% | 9.3% | 16.8% | EBITDA Margin | NA | NA | -71.8% |
| Operating Profit Margin | -18.7% | -6.6% | 1.9% | Operating Profit Margin | NA | NA | -79.5% |
| Net Profit Margin | -44.8% | -23.8% | -12.2% | Net Profit Margin | NA | NA | -83.3% |
| Selected Balance Sheet Items: | | | | Selected Balance Sheet Items: | | | |
| Cash | \$ 36,000 | \$ 83,000 | \$ - | Cash | \$ - | \$ - | \$ - |
| Fixed Assets, net | 12,269,000 | 12,312,000 | 12,460,000 | Fixed Assets, net | - | - | 56,000 |
| Total Accrued Int. & Notes Payable | 22,459,000 | 24,307,000 | 25,497,000 | Total Accrued Int. & Notes Payable | 38,000 | 166,000 | 166,000 |
| Net Assets (Equity) | (10,470,000) | (12,566,000) | (13,830,630) | Net Assets (Equity) | (38,000) | (103,000) | (103,000) |

Franklin Public Utility District - Broadband

1411W. Clark
PO Box 2407
Pasco, WA 99302-2407
broadband.franklinpud.com

Company Description:

Franklin Public Utility District is the electric utility serving Franklin County, WA. The District has deployed and continues to deploy a fiber optic backbone in its service area for internal use by the electric utility. Since 2001, upon connecting its network to a regional fiber optic communications system, the PUD has made excess capacity available on a wholesale basis to retail telecom and Internet service providers. This fiber-based wholesale broadband coverage is also being complemented by the deployment of a Wi-Fi network, with a pilot successfully

completed in 2003. Retail service providers contract with PUD to provide services to local businesses, public entities, and residents (through Wi-Fi RSPs).

| | FYE December 31, | |
|----------------------------|------------------|--------------|
| | 2003 | 2004 |
| Revenues | \$ 142,051 | \$ 149,977 |
| Operating Expenses | 500,059 | 590,479 |
| EBITDA | (358,008) | (440,502) |
| Depreciation | 157,241 | 304,478 |
| Operating Profit | (515,249) | (744,980) |
| Growth Rates: | | |
| Revenues | | 5.6% |
| EBITDA | | NMF |
| Operating Profit | | NMF |
| Margins (% of Revenues): | | |
| EBITDA Margin | -252.0% | -293.7% |
| Operating Profit Margin | -362.7% | -496.7% |
| Capital Investment: | | |
| Current | \$ 3,739,877 | \$ 1,242,580 |
| Cumulative (since 2000) | 8,832,478 | 10,075,058 |

WaupacaOnline.net

111 South Main Street
Waupaca, WI 54981
www.waupacaonline.net

Company Description:

In 2002, WaupacaOnline.net, a division of the city of Waupaca, began offering wireless high-speed Internet access and point-to-point wide area network connectivity using Wi-Fi technology) for residential and business customers in Waupaca and Weyauwega, WI. Network speeds range from 100Kbps to over 1.0Mbps. Construction of the network is ongoing. Competitors include SBC and Charter Communications.

| | FYE December 31, | | | |
|--|------------------|-------------|------------|--------------|
| | 2002 | 2003 | 2004 | 2005 YTD [1] |
| Revenues | \$ 3,214 | \$ 76,367 | \$ 136,633 | \$ 70,713 |
| Operating Expenses | 80,676 | 106,658 | 111,037 | 48,037 |
| EBITDA | (77,462) | (30,291) | 25,596 | 22,676 |
| Depreciation | 4,720 | 12,915 | 18,509 | 7,986 [2] |
| Operating Profit | (82,182) | (43,206) | 7,087 | 14,690 |
| Interest & Other Expense | (292) | 17,768 | 8,606 | 5,414 |
| Net Profit | \$ (81,890) | \$ (60,974) | \$ (1,519) | \$ 9,275 |
| Growth Rates: | | | | |
| Revenues | | NMF | 78.9% | |
| EBITDA | | NMF | NMF | |
| Operating Profit | | NMF | NMF | |
| Net Profit | | NMF | NMF | |
| Margins (% of Revenues): | | | | |
| EBITDA Margin | NMF | -39.7% | 18.7% | 32.1% |
| Operating Profit Margin | NMF | -56.6% | 5.2% | 20.8% |
| Net Profit Margin | NMF | -79.8% | -1.1% | 13.1% |
| Selected Balance Sheet Items: | | | | |
| Cash | \$ 84,260 | \$ 123,364 | \$ 100,371 | \$ 68,148 |
| Fixed Assets, net | 193,612 | 264,125 | 292,587 | 304,273 |
| Total Debt / Advances from Other Funds | 325,391 | 489,281 | 494,437 | 486,937 |
| Total Fund Equity | (47,383) | (108,357) | (112,269) | (97,182) |
| [1] Through 5/31/05. | | | | |
| [2] No Depreciation was reflected in the YTD financial statements provided by the City Administrator; therefore, the 2005 YTD Depreciation expense was calculated using a percentage of Gross Fixed Assets (based on 2004 Depreciation expense divided by 2004 Gross Fixed Assets), pro rated to reflect 5 months. | | | | |

Appendix Two: State Legislative Texts

Arkansas

23-17-409. Authorization of competing local exchange carriers.

(a)(1)(A) Consistent with the federal act and the provisions of § 23-17-410, the Arkansas Public Service Commission is authorized to grant certificates of convenience and necessity to telecommunications providers authorizing them to provide telecommunications services, including basic local exchange service or switched-access service, or both, to an incumbent local exchange carrier's local exchange area if and to the extent that the applications otherwise comply with state law, designate the geographic areas proposed to be served by the applicants, and the applicants demonstrate that they possess the financial, technical, and managerial capacity to provide the competing services.

(B) No telecommunications provider shall operate as a CLEC in this state without first obtaining from the commission a certificate of public convenience and necessity.

(2) Competing local exchange carriers shall be required to maintain a current tariff or price list with the commission and to make prices and terms of service available for public inspection.

(3) Retail prices of competing local exchange carriers shall not require prior review or approval by the commission.

(b)(1) A government entity may not provide, directly or indirectly, basic local exchange service.

(2) After reasonable notice to the public and a public hearing, a governmental entity owning an electric utility system or television signal distribution system may make any telecommunications capacity or associated facilities that it now owns, or may hereafter acquire, available to the public upon terms and conditions as may be established by its governing authority, except the government entity may not use the telecommunications capacity or facilities to provide, directly or indirectly, basic local exchange service.

(3) Any restriction contained in this subsection shall not be applicable to the provision of telecommunications services or facilities to the extent used solely for 911, E911, other emergency services, educational or medical purposes, or for the provision of telecommunications services or facilities by an educational institution to its students.

(c) A governmental entity that operates an electric utility system may deny any telecommunications provider access to its electric utility poles, ducts, conduits, or rights-of-way on a nondiscriminatory basis when there is insufficient capacity and for reasons of safety, reliability, and generally applicable engineering purposes.

(d)(1) Except to the extent required by the federal act and this subchapter, the commission shall not require an incumbent local exchange carrier to negotiate resale of its retail telecommunications services, to provide interconnection, or to sell unbundled network elements to a competing local exchange carrier for the purpose of allowing the competing local exchange carrier to compete with the incumbent local exchange carrier in the provision of basic local exchange service.

(2) Promotional prices, service packages, trial offerings, or temporary discounts offered by the local exchange carrier to its end-user customers are not required to be available for resale.

(e) The prices for unbundled network elements shall include the actual costs, including an allocation of joint and common costs and a reasonable profit.

(f) As provided in 47 U.S.C. §§ 251 and 252, the commission's authority with respect to interconnection, resale, and unbundling is limited to the terms, conditions, and agreements pursuant to which an incumbent local exchange carrier will provide interconnection, resale, or unbundling to a CLEC for the purpose of the CLEC competing with the incumbent local exchange carrier in the provision of telecommunications services to end-user customers.

(g)(1) As permitted by the federal act, the commission shall approve resale restrictions that prohibit resellers from purchasing retail local exchange services offered by a local exchange carrier to residential customers and reselling those retail services to nonresidential customers, or aggregating the usage of multiple customers on resold local exchange services, or any other reasonable limitation on resale to the extent permitted by the federal act.

(2) The wholesale rate of any existing retail telecommunications services provided by local exchange carriers that are not exempt from 47 U.S.C. § 251(c) and that are being sold for the purpose of resale shall be the retail rate of the service less any net avoided costs due to the resale.

(3) The net avoided costs shall be calculated as the total of the costs that will not be incurred by the local exchange carrier due to its selling the service for resale less any additional costs that will be incurred as a result of selling the service for the purpose of resale.

(h) Incumbent local exchange carriers shall provide competing local exchange carriers, at reasonable rates, nondiscriminatory access to operator services, directory listings and assistance, and 911 service only to the extent required in the federal act.

(i)(1) The commission shall approve any negotiated interconnection agreement or statement of generally available terms filed pursuant to the federal act unless it is shown by clear and convincing evidence that the agreement or statement does not meet the minimum requirements of 47 U.S.C. § 251.

(2) In no event shall the commission impose any interconnection requirements that go beyond those requirements imposed by the federal act or any interconnection regulations or standards promulgated under the federal act.

(j) In the event the commission is requested to arbitrate any open issues pursuant to 47 U.S.C. § 252, the parties to the arbitration proceeding shall be limited to the persons or entities negotiating the agreement.

History. Acts 1997, No. 77, § 9; 2003, No. 1788, § 8.

Colorado

Competition in Utility and Entertainment Services

29-27-101. Legislative declaration. (1) THE GENERAL ASSEMBLY HEREBY FINDS AND DECLARES THAT IT IS THE POLICY OF THIS STATE TO ENSURE THAT CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, AND HIGH SPEED INTERNET ACCESS, OTHERWISE KNOWN AS ADVANCED SERVICE, ARE EACH PROVIDED WITHIN A CONSISTENT, COMPREHENSIVE, AND NONDISCRIMINATORY FEDERAL, STATE, AND LOCAL GOVERNMENT FRAMEWORK.

(2) THE GENERAL ASSEMBLY FURTHER FINDS AND DECLARES THAT:

(a) THERE IS A NEED FOR STATEWIDE UNIFORMITY IN THE REGULATION OF ALL PUBLIC AND PRIVATE ENTITIES THAT PROVIDE CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, AND ADVANCED SERVICE.

(b) MUNICIPAL ORDINANCES, RULES, AND OTHER REGULATIONS GOVERNING THE PROVISION OF CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, AND ADVANCED SERVICE BY A LOCAL GOVERNMENT IMPACT PERSONS LIVING OUTSIDE THE MUNICIPALITY.

(c) REGULATING THE PROVISION OF CABLE TELEVISION SERVICE TELECOMMUNICATIONS SERVICE, AND ADVANCED SERVICE BY A LOCAL GOVERNMENT IS A MATTER OF STATEWIDE CONCERN.

29-27-102. Definitions. AS USED IN THIS ARTICLE, UNLESS THE CONTEXT OTHERWISE REQUIRES:

(1) "ADVANCED SERVICE" MEANS HIGH-SPEED INTERNET ACCESS CAPABILITY IN EXCESS OF TWO HUNDRED FIFTY-SIX KILOBITS PER SECOND BOTH UPSTREAM AND DOWNSTREAM.

(2) "CABLE TELEVISION SERVICE" MEANS THE ONE-WAY TRANSMISSION TO SUBSCRIBERS OF VIDEO PROGRAMMING OR OTHER PROGRAMMING SERVICE, AS WELL AS SUBSCRIBER INTERACTION, IF ANY, THAT IS REQUIRED FOR THE SELECTION OR USE OF THE VIDEO PROGRAMMING OR OTHER PROGRAMMING SERVICE.

(3) "LOCAL GOVERNMENT" MEANS ANY CITY, COUNTY, CITY AND COUNTY, SPECIAL DISTRICT, OR OTHER POLITICAL SUBDIVISION OF THIS STATE.

(4) "PRIVATE PROVIDER" MEANS A PRIVATE ENTITY THAT PROVIDES CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE.

(5) "SUBSCRIBER" MEANS A PERSON THAT LAWFULLY RECEIVES CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE. A PERSON THAT UTILIZES CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE PROVIDED BY A LOCAL GOVERNMENT FOR LOCAL GOVERNMENTAL OR INTERGOVERNMENTAL PURPOSES AND IS USED BY PERSONS ACCESSING GOVERNMENT SERVICES IS NOT A SUBSCRIBER FOR PURPOSES OF THIS ARTICLE.

(6) "TELECOMMUNICATIONS SERVICE" HAS THE SAME MEANING AS SET FORTH IN SECTION 40-15-102 (29), C.R.S.

29-27-103. Limitations on providing cable television, telecommunications, and advanced services. (1) EXCEPT AS PROVIDED IN THIS ARTICLE, A LOCAL GOVERNMENT SHALL NOT:

(a) PROVIDE TO ONE OR MORE SUBSCRIBERS CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE; OR

(b) PURCHASE, LEASE, CONSTRUCT, MAINTAIN, OR OPERATE ANY FACILITY FOR THE PURPOSE OF PROVIDING CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE TO ONE OR MORE SUBSCRIBERS.

(2) FOR PURPOSES OF THIS ARTICLE, A LOCAL GOVERNMENT PROVIDES CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE IF THE LOCAL GOVERNMENT PROVIDES THE CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE TO ONE OR MORE SUBSCRIBERS:

(a) DIRECTLY;

(b) INDIRECTLY BY MEANS THAT INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

(I) THROUGH AN AUTHORITY OR INSTRUMENTALITY ACTING ON BEHALF OF THE LOCAL GOVERNMENT OR FOR THE BENEFIT OF THE LOCAL GOVERNMENT BY ITSELF;

(II) THROUGH A PARTNERSHIP OR JOINT VENTURE;

(III) THROUGH A SALE AND LEASEBACK ARRANGEMENT;

(c) BY CONTRACT, INCLUDING A CONTRACT WHEREBY THE LOCAL GOVERNMENT LEASES, SELLS CAPACITY IN, OR GRANTS OTHER SIMILAR RIGHTS TO A PRIVATE PROVIDER TO USE LOCAL GOVERNMENTAL FACILITIES DESIGNED OR CONSTRUCTED TO PROVIDE CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE FOR INTERNAL LOCAL GOVERNMENT PURPOSES IN CONNECTION WITH A PRIVATE PROVIDER'S OFFERING OF CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE; OR

(d) THROUGH SALE OR PURCHASE OF RESALE OR WHOLESALE CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE FOR THE PURPOSE OF PROVIDING CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE TO ONE OR MORE SUBSCRIBERS.

(3) NOTHING IN THIS ARTICLE SHALL BE CONSTRUED TO LIMIT THE AUTHORITY OF A LOCAL GOVERNMENT TO LEASE TO A PRIVATE PROVIDER PHYSICAL SPACE IN OR ON ITS PROPERTY FOR THE PLACEMENT OF EQUIPMENT OR FACILITIES THE PRIVATE PROVIDER USES TO PROVIDE CABLE TELEVISION, TELECOMMUNICATIONS, OR ADVANCED SERVICES.

29-27-201. Vote - referendum. (1) BEFORE A LOCAL GOVERNMENT MAY ENGAGE OR OFFER TO ENGAGE IN PROVIDING CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE, AN ELECTION SHALL BE CALLED ON WHETHER OR NOT THE LOCAL GOVERNMENT SHALL PROVIDE THE PROPOSED CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE.

(2) THE BALLOT AT AN ELECTION CONDUCTED PURSUANT TO THIS SECTION SHALL POSE THE QUESTION AS A SINGLE SUBJECT AND SHALL INCLUDE A DESCRIPTION OF THE NATURE OF THE PROPOSED SERVICE, THE ROLE THAT THE LOCAL GOVERNMENT WILL HAVE IN PROVISION OF THE SERVICE, AND THE INTENDED SUBSCRIBERS OF SUCH SERVICE. THE BALLOT PROPOSITION SHALL NOT TAKE EFFECT UNTIL SUBMITTED TO THE ELECTORS AND APPROVED BY THE MAJORITY OF THOSE VOTING ON THE BALLOT.

29-27-202. Exemption for unserved areas. (1) A LOCAL GOVERNMENT SHALL BE EXEMPT FROM THE REQUIREMENTS OF THIS PART 2 AND MAY ENGAGE OR OFFER TO ENGAGE IN PROVIDING CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCE SERVICE IF:

(a) NO PRIVATE PROVIDER OF CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE PROVIDES THE SERVICE ANYWHERE WITHIN THE BOUNDARIES OF THE LOCAL GOVERNMENT;

(b) THE GOVERNING BODY OF THE LOCAL GOVERNMENT HAS SUBMITTED A WRITTEN REQUEST TO PROVIDE THE SERVICE TO ANY INCUMBENT PROVIDER OF CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE WITHIN THE BOUNDARIES OF THE LOCAL GOVERNMENT; AND

(c) THE INCUMBENT PROVIDER HAS NOT AGREED WITHIN SIXTY DAYS OF THE RECEIPT OF A REQUEST SUBMITTED PURSUANT TO PARAGRAPH (b) OF THIS SUBSECTION (1) TO PROVIDE THE SERVICE OR, IF THE PROVIDER HAS AGREED, IT HAS NOT COMMENCED PROVIDING THE SERVICE WITHIN FOURTEEN MONTHS OF THE RECEIPT OF THE REQUEST.

29-27-301. General operating limitations. (1) A LOCAL GOVERNMENT THAT PROVIDES CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE UNDER THIS ARTICLE SHALL COMPLY WITH ALL STATE AND FEDERAL LAWS, RULES, AND REGULATIONS GOVERNING PROVISION OF SUCH SERVICE BY A PRIVATE PROVIDER; EXCEPT THAT NOTHING HEREIN SHALL BE CONSTRUED TO AFFECT THE JURISDICTION OF THE PUBLIC UTILITIES COMMISSION WITH RESPECT TO MUNICIPAL UTILITIES.

(2) (a) A LOCAL GOVERNMENT SHALL NOT MAKE OR GRANT ANY UNDUE OR UNREASONABLE PREFERENCE OR ADVANTAGE TO ITSELF OR TO ANY PRIVATE PROVIDER OF CABLE TELEVISION SERVICES, TELECOMMUNICATIONS SERVICES, OR ADVANCED SERVICES.

(b) A LOCAL GOVERNMENT SHALL APPLY WITHOUT DISCRIMINATION AS TO ITSELF AND TO ANY PRIVATE PROVIDER THE LOCAL GOVERNMENT'S ORDINANCES, RULES, AND POLICIES, INCLUDING THOSE RELATING TO:

- (I) OBLIGATION TO SERVE;
- (II) ACCESS TO PUBLIC RIGHTS-OF-WAY;
- (III) PERMITTING;
- (IV) PERFORMANCE BONDING WHERE AN ENTITY OTHER THAN THE LOCAL GOVERNMENT IS PERFORMING THE WORK;
- (V) REPORTING; AND
- (VI) QUALITY OF SERVICE.

29-27-302. Scope of article. (1) NOTHING IN THIS ARTICLE SHALL BE CONSTRUED TO AUTHORIZE ANY LOCAL GOVERNMENT TO:

(a) PROVIDE, DIRECTLY OR INDIRECTLY, CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE; OR

(b) PURCHASE, LEASE, CONSTRUCT, MAINTAIN, OR OPERATE A FACILITY FOR THE PURPOSE OF PROVIDING, DIRECTLY OR INDIRECTLY, CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE.

(2) NOTHING IN THIS ARTICLE SHALL BE CONSTRUED TO APPLY TO A LOCAL GOVERNMENT PURCHASING, LEASING, CONSTRUCTING, MAINTAINING, OR OPERATING FACILITIES THAT ARE DESIGNED TO PROVIDE CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, OR ADVANCED SERVICE THAT THE LOCAL GOVERNMENT USES FOR INTERNAL OR INTERGOVERNMENTAL PURPOSES.

(3) NOTHING IN THIS ARTICLE SHALL BE CONSTRUED TO APPLY TO THE SALE OR LEASE BY A LOCAL GOVERNMENT TO PRIVATE PROVIDERS OF EXCESS CAPACITY, PROVIDED:

(a) SUCH EXCESS CAPACITY IS INSUBSTANTIAL IN RELATION TO THE CAPACITY UTILIZED BY THE LOCAL GOVERNMENT FOR ITS OWN PURPOSES; AND

(b) THE OPPORTUNITY TO PURCHASE AND THE OPPORTUNITY TO USE SUCH EXCESS CAPACITY IS MADE AVAILABLE TO ANY PRIVATE PROVIDER IN A NONDISCRIMINATORY, NONEXCLUSIVE, AND COMPETITIVELY NEUTRAL MANNER.

(4) NOTHING IN THIS ARTICLE SHALL BE CONSTRUED TO LIMIT EITHER THE AUTHORITY OF THE STATEWIDE INTERNET PORTAL AUTHORITY CREATED IN SECTION 24-37.7-102, C.R.S., TO CARRY OUT ITS MISSION OR TO INTEGRATE THE ELECTRONIC INFORMATION DELIVERY SYSTEMS OF LOCAL GOVERNMENTS INTO THE STATEWIDE INTERNET PORTAL AS DEFINED IN ARTICLE 37.7 OF TITLE 24, C.R.S.

29-27-303. Enforcement and appeal. (1) BEFORE AN INDIVIDUAL SUBSCRIBER OR A PRIVATE PROVIDER THAT COMPETES WITH A LOCAL GOVERNMENT IN THE GEOGRAPHIC BOUNDARIES OF THE LOCAL GOVERNMENT MAY FILE AN ACTION IN DISTRICT COURT FOR VIOLATION OF THIS ARTICLE, THAT PERSON SHALL FILE A WRITTEN COMPLAINT WITH THE LOCAL GOVERNMENT. THE FAILURE BY THE LOCAL GOVERNMENT TO ISSUE A FINAL DECISION REGARDING THE COMPLAINT WITHIN FORTY-FIVE DAYS SHALL BE TREATED AS AN ADVERSE DECISION FOR PURPOSES OF APPEAL.

(2) AN APPEAL OF AN ADVERSE DECISION FROM THE LOCAL GOVERNMENT MAY BE TAKEN TO THE DISTRICT COURT FOR A DE NOVO PROCEEDING.

29-27-304. Applicability. THIS ARTICLE SHALL APPLY TO CABLE TELEVISION SERVICE, TELECOMMUNICATIONS SERVICE, AND ADVANCED SERVICE AND TO THE PURCHASE, LEASE, CONSTRUCTION, MAINTENANCE, OR OPERATION OF ANY FACILITY FOR THE PURPOSE OF PROVIDING SUCH SERVICE, FOR WHICH A LOCAL GOVERNMENT HAS NOT ENTERED INTO AN AGREEMENT OR OTHERWISE TAKEN ANY SUBSTANTIAL ACTION PRIOR TO MARCH 1, 2005, TO PROVIDE SUCH SERVICE OR PURCHASE, LEASE, CONSTRUCT, MAINTAIN, OR OPERATE SUCH FACILITIES.

SECTION 2. Safety clause. The general assembly hereby finds, determines, and declares that this act is necessary for the immediate preservation of the public peace, health, and safety.

Florida

166.047¹⁰¹ Telecommunications services.-- A telecommunications company that is a municipality or other entity of local government may obtain or hold a certificate required by chapter 364, and the obtaining or holding of said certificate serves a municipal or public purpose under the provision of s. 2(b), Art. VIII of the State Constitution, only if the municipality or other entity of local government:

- (1) Separately accounts for the revenues, expenses, property, and source of investment dollars associated with the provision of such services;
- (2) Is subject, without exemption, to all local requirements applicable to telecommunications companies; and
- (3) Notwithstanding any other provision of law, pays, on its telecommunications facilities used to provide two-way telecommunications services to the public for hire and for which a certificate is required pursuant to chapter 364, ad valorem taxes, or fees in amounts equal thereto, to any taxing jurisdiction in which the municipality or other entity of local government operates. Any entity of local government may pay and impose such ad valorem taxes or fees.

This section does not apply to the provision of telecommunications services for internal operational needs of a municipality or other entity of local government. This section does not apply to the provision of internal information services, including, but not limited to, tax records, engineering records, and property records, by a municipality or other entity of local government to the public for a fee.

Senate Bill 1322 was signed by the Governor on June 2, 2005¹⁰²:

Be It Enacted by the Legislature of the State of Florida:

Section 8. Communications services offered by governmental entities.--

- (1) As used in this Section, the term:
 - (a) "Advanced service" means high-speed-Internet-access-service capability in excess of 200 kilobits per second in the upstream or the downstream direction, including any service application provided over the high-speed-access service or any information service as defined in 47 U.S.C. s. 153 (20).
 - (b) "Cable service" has the same meaning as in 47 U.S.C. s. 522 (6).
 - (c) "Communications services" includes any "advanced service," "cable service," or "telecommunications service" and shall be construed in the broadest sense.
 - (d) "Enterprise fund" means a separate fund to account for the operation of communications services by a local government, established and maintained in accordance with generally accepted accounting principles as prescribed by the Governmental Accounting Standards Board.

¹⁰¹ http://www.flsenate.gov/statutes/index.cfm?mode=View%20Statutes&SubMenu=1&App_mode=Display_Statute&Search_String=&URL=CH0166/Sec047.HTM

¹⁰² http://www.flsenate.gov/Session/index.cfm?Mode=Bills&SubMenu=1&BI_Mode=ViewBillInfo&BillNum=1322&Year=2005&Chamber=Senate#BillText

(e) "Governmental entity" means any political subdivision as defined in Section 1.01, Florida Statutes, including any county, municipality, special district, school district, utility authority or other authority or any instrumentality, agency, unit or department thereof. The term does not include an independent special district created before 1970 which has been granted express legislative authority to provide a communications service and which does not sell a communications service outside its district boundaries.

(f) "Provide," "providing," "provision," or "provisioning" means offering or supplying a communications service for a fee or other consideration to a person, including any portion of the public or private provider, but does not include service by an entity to itself or to any other governmental entity.

(g) "Subscriber" means a person who receives a communications service.

(h) "Telecommunications services" means the transmission of signs, signals, writing, images, sounds, messages, data, or other information of the user's choosing, by wire, radio, light waves, or other electromagnetic means, without change in the form or content of the information as sent and received by the user and regardless of the facilities used, including, without limitation, wireless facilities.

(2) (a) A governmental entity that proposes to provide a communications service shall hold no less than two public hearings, which shall be held not less than 30 days apart. At least 30 days before the first of the two public hearings, the governmental entity must give notice of the hearing in the predominant newspaper of general circulation in the area considered for service. At least 40 days before the first public hearing, the governmental entity must electronically provide notice to the Department of Revenue and the Public Service Commission, which shall post the notice on the department's and the commission's website to be available to the public. The Department of Revenue shall also send the notice by United States Postal Service to the known addresses for all dealers of communications services registered with the department under chapter 202, Florida Statutes, or provide an electronic notification, if the means are available, within 10 days after receiving the notice. The notice must include the time and place of the hearings and must state that the purpose of the hearings is to consider whether the governmental entity will provide communications services. The notice must include, at a minimum, the geographic areas proposed to be served by the governmental entity and the services, if any, which the governmental entity believes are not currently being adequately provided. The notice must also state that any dealer who wishes to do so may appear and be heard at the public hearings.

(b) At a public hearing required by this sub Section, a governmental entity must, at a minimum, consider:

1. Whether the service that is proposed to be provided is currently being offered in the community and, if so, whether the service is generally available throughout the community.

2. Whether a similar service is currently being offered in the community and, if so, whether the service is generally available throughout the community.

3. If the same or similar service is not currently offered, whether any other service provider proposes to offer the same or a similar service and, if so, what assurances that service provider is willing or able to offer regarding the same or similar service.

4. The capital investment required by the government entity to provide the communications service, the estimated realistic cost of operation and maintenance and, using a full cost-accounting method, the estimated realistic revenues and expenses of providing the service and the proposed method of financing.

5. The private and public costs and benefits of providing the service by a private entity or a governmental entity, including the affect on existing and future jobs, actual economic development prospects, tax-base growth, education, and public health.

(c) At one or more of the public hearings under this sub Section, the governmental entity must make available to the public a written business plan for the proposed communications service venture containing, at a minimum:

1. The projected number of subscribers to be served by the venture.

2. The geographic area to be served by the venture.

3. The types of communications services to be provided.

4. A plan to ensure that revenues exceed operating expenses and payment of principal and interest on debt within 4 years.

5. Estimated capital and operational costs and revenues for the first 4 years.

6. Projected network modernization and technological upgrade plans, including estimated costs.

(d) After making specific findings regarding the factors in paragraphs (b) and (c), the governmental entity may authorize providing a communications service by a majority recorded vote and by resolution, ordinance, or other formal means of adoption.

(e) The governing body of a governmental entity may issue one or more bonds to finance the capital costs for facilities to provide a communications service. However:

1. A governmental entity may only pledge revenues in support of the issuance of any bond to finance providing a communications service: a. Within the county in which the governmental entity is located; b. Within an area in which the governmental entity provides electric service outside its home county under an electric service territorial agreement approved by the Public Service Commission before the effective date of this act; or c. If the governmental entity is a municipality or special district, within its corporate limits or in an area in which the municipality or special district provides water, wastewater, electric, or natural gas service, or within an urban service area designated in a comprehensive plan, whichever is larger, unless the municipality or special district obtains the consent by formal action of the governmental entity within the boundaries of which the municipality or special district proposes to provide service. For consent to be effective, any governmental entity from which consent is sought shall be located within the county in which the governmental entity is located or that county.

2. Revenue bonds issued in order to finance providing a communications service are not subject to the approval of the electors if the revenue bonds mature within 15 years. Revenue bonds issued to finance providing a communications service that does not mature within 15 years must be approved by the electors. The election must be conducted as specified in chapter 100, Florida Statutes.

(f) A governmental entity providing a communications service may not price any service below the cost of providing the service by subsidizing the communications service with moneys from rates paid by subscribers of a noncommunications services utility or from any other revenues. The cost standard for determining cross-subsidization is whether the total revenue from the service is less than the total long-run incremental cost of the service. Total long-run incremental cost means service-specific volume and nonvolume-sensitive costs.

(g) A governmental entity providing a communications service must comply with the requirements of Section 218.32, Florida Statutes, and shall keep separate and accurate books and records, maintained in accordance with generally accepted accounting principles, of a governmental entity's communication service, and they shall be made available for any audits of the books and records conducted under applicable law. To facilitate equitable distribution of indirect costs, a local government shall develop and follow a cost-allocation plan, which is a procedure for allocating direct and indirect costs and which is generally developed in accordance with OMB Circular A-87, Cost Principles for State, Local, and Indian Tribal Government, published by the United States Office of Management and Budget.

(h) The governmental entity shall establish an enterprise fund to account for its operation of communications services.

(i) The governmental entity shall adopt separate operating and capital budgets for its communications services.

(j) A governmental entity may not use its powers of eminent domain under chapter 73, Florida Statutes, solely or primarily for the purpose of providing a communications service.

(k) The governmental entity shall conduct an annual review at a formal public meeting to consider the progress the governmental entity is making toward reaching its business plan goals and objectives for providing communication services. At the public meeting the governmental entity shall review the related revenues, operating expenses, and payment of interest on debt.

(l) If, after 4 years following the initiation of the provision of communications services by a governmental entity or 4 years after the effective date of this act, whichever is later, revenues do not exceed operating expenses and payment of principal and interest on the debt for a governmental entity's provision of communications services, no later than 60 days following the end of the 4-year period a governmental entity shall hold a public hearing at which the governmental entity shall do at least one of the following:

1. Approve a plan to cease providing communications services;
2. Approve a plan to dispose of the system the governmental entity is using to provide communications services and, accordingly, to cease providing communications services;
3. Approve a plan to create a partnership with a private entity in order to achieve operations in which revenues exceed operating expenses and payment of principal and interest on debt; or
4. Approve the continuing provision of communications services by a majority vote of the governing body of the governing authority.

(3)(a) A governmental entity that provides a cable service shall comply with the Cable Communications Policy Act of 1984, 47 U.S.C. 521, et seq., the regulations issued by the Federal Communications Commission under the Cable Communications Policy Act of 1984, 47 U.S.C. 521, et seq., and all applicable state and federal rules and regulations, including, but not limited to, Section 166.046, Florida Statutes, and those provisions of chapters 202, 212, and 337, Florida Statutes, which apply to a provider of the services.

(b) A governmental entity that provides a telecommunications service or advanced service must comply, if applicable, with chapter 364, Florida Statutes, and rules adopted by the Public Service Commission; chapter 166, Florida Statutes; and all applicable state and federal rules and regulations, including, but not limited to, those provisions of chapters 202, 212, and 337, Florida Statutes, which apply to a provider of the services.

(c) A governmental entity may not exercise its power or authority in any area, including zoning or land use regulation, to require any person, including residents of a particular development, to use or subscribe to any communication service of a governmental entity.

(d) A governmental entity shall apply its ordinances, rules, and policies, and exercise any authority under state or federal laws, including, but not limited to, those relating to the following subjects and without discrimination as to itself when providing a communications service or to any private provider of communications services: 1. Access to public rights-of-way; and 2. Permitting, access to, use of, and payment for use of governmental entity-owned poles. The governmental entity is subject to the same terms, conditions, and fees, if any, for access to government-owned poles which the governmental entity applies to a private provider for access.

(4)(a) If a governmental entity was providing, as of April 1, 2005, advanced services, cable services, or telecommunications services, then it is not required to comply with paragraph (2)(a), paragraph (2)(b), paragraph (2)(c), paragraph (2)(d), sub-subparagraph (2)(e)1.c., paragraph (2)(f), or paragraph (2)

(k) in order to continue to provide advanced services, cable services, or telecommunications services, respectively, but it must comply with and be subject to all other provisions of this Section.

(b) If a governmental entity, as of April 1, 2005, had issued debt pledging revenues from an advanced service, cable service, or telecommunications service, then it is not required to comply with paragraph (2)(a), paragraph (2)(b), paragraph (2)(c), paragraph(2)(d), sub-subparagraph (2)(e)1.c., paragraph (2)(f), or paragraph (2)(k) in order to provide advanced services, cable services, or telecommunications services, respectively, but it must comply with and be subject to all other provisions of this Section.(c) If a governmental entity, as of April 1, 2005, has purchased equipment specifically for the provisioning of advanced service, cable service, or telecommunication service, 25 and, as of May 6, 2005, has a population of less than 7500, and has authorized by formal action the providing of an advanced service, cable service, or telecommunication service, then it is not required to comply with paragraph (2)(a), paragraph (2)(b), paragraph (2)(c), paragraph (2)(d), sub-subparagraph (2)(e)1.c., paragraph (2)(f), or paragraph (2)(k) in order to provide advanced service, cable service, or telecommunication service, respectively, but it must comply with and be subject to all other provisions of this Section. This subsection does not relieve a governmental entity from complying with subsection (5).

(5) Notwithstanding Section 542.235, Florida Statutes, or any other law, a governmental entity that provides a communications service is subject to the same prohibitions applicable to private providers under Sections 542.18 and 542.19, Florida Statutes, as it relates to providing a

communications service. This Section does not limit the availability to any party of any remedy or defense under state or federal anti-trust laws.

(6) To ensure the safe and secure transportation of passengers and freight through an airport facility, as defined in Section 159.27(17), Florida Statutes, an airport authority or other governmental entity that provides or is proposing to provide communications services only within the boundaries of its airport layout plan, as defined in Section 333.01(6), Florida Statutes, to subscribers which are integral and essential to the safe and secure transportation of passengers and freight through the airport facility, is exempt from this Section. An airport authority or other governmental entity that provides or is proposing to provide shared-tenant service under Section 364.339, Florida Statutes, but not dial tone enabling subscribers to complete calls outside the airport layout plan, to one or more subscribers within its airport layout plan which are not integral and essential to the safe and secure transportation of passengers and freight through the airport facility is exempt from this Section. An airport authority or other governmental entity that provides or is proposing to provide communications services to one or more subscribers within its airport layout plan which are not integral and essential to the safe and secure transportation of passengers and freight through the airport facility, or to one or more subscribers outside its airport layout plan, is not exempt from this Section. By way of example and not limitation, the integral, essential subscribers may include airlines and emergency service entities, and the nonintegral, nonessential subscribers may include retail shops, restaurants, hotels, or rental car companies.

(7) This Section does not alter or affect any provision in the charter, code, or other governing authority of a governmental entity that impose additional or different requirements on provision of communications service by a governmental entity. Any such provisions shall apply in addition to the applicable provisions in this Section.

Section 15.

Section 364.0361, Florida Statutes, is amended to read:

364.0361 Local government authority; nondiscriminatory exercise.--A local government shall treat each telecommunications company in a nondiscriminatory manner when exercising its authority to grant franchises to a telecommunications company or to otherwise establish conditions or compensation for the use of rights-of-way or other public property by a telecommunications company. A local government may not directly or indirectly regulate the terms and conditions, including, but not limited to, the operating systems, qualifications, services, service quality, service territory, and prices, applicable to or in connection with the provision of any voice-over-Internet protocol, regardless of the platform, provider, or protocol, broadband or information service. This Section does not relieve a provider from any obligations under s. 166.046 or s. 337.401.

Section 21. Paragraph (b) of subsection(1) of Section 199.183, Florida Statutes, is amended to read:

199.183 Taxpayers exempt from annual and nonrecurring taxes.--

(1) Intangible personal property owned by this state or any of its political subdivisions or municipalities shall be exempt from taxation under this chapter. This exemption does not apply to:

(b) Property related to the provision of two-way telecommunications services to the public for hire by the use of a telecommunications facility, as defined in s. 364.02(15), and for which a certificate is required under chapter 364, when the service is provided by any county, municipality, or other political subdivision of the state. Any immunity of any political subdivision of the state or other entity of local government from taxation of the property used to provide telecommunication services that is taxed as a result of this paragraph is hereby waived. However, intangible personal property related to the provision of telecommunications services provided by the operator of a public-use airport, as defined in s. 332.004, for the operator's provision of telecommunications services for the airport or its tenants, concessionaires,

or licensees, and intangible personal property related to the provision of telecommunications services provided by a public hospital, are exempt from taxation under this chapter.

Section 22. SubSection (6) of Section 212.08, Florida Statutes, is amended to read:

212.08 Sales, rental, use, consumption, distribution, and storage tax; specified exemptions.--The sale at retail, the rental, the use, the consumption, the distribution, and the storage to be used or consumed in this state of the following are hereby specifically exempt from the tax imposed by this chapter.

(6) EXEMPTIONS; POLITICAL SUBDIVISIONS.--There are also exempt from the tax imposed by this chapter sales made to the United States Government, a state, or any county, municipality, or political subdivision of a state when payment is made directly to the dealer by the governmental entity. This exemption shall not inure to any transaction otherwise taxable under this chapter when payment is made by a government employee by any means, including, but not limited to, cash, check, or credit card when that employee is subsequently reimbursed by the governmental entity. This exemption does not include sales of tangible personal property made to contractors employed either directly or as agents of any such government or political subdivision thereof when such tangible personal property goes into or becomes a part of public works owned by such government or political subdivision. A determination whether a particular transaction is properly characterized as an exempt sale to a government entity or a taxable sale to a contractor shall be based on the substance of the transaction rather than the form in which the transaction is cast. The department shall adopt rules that give special consideration to factors that govern the status of the tangible personal property before its affixation to real property. In developing these rules, assumption of the risk of damage or loss is of paramount consideration in the determination. This exemption does not include sales, rental, use, consumption, or storage for use in any political subdivision or municipality in this state of machines and equipment and parts and accessories therefore used in the generation, transmission, or distribution of electrical energy by systems owned and operated by a political subdivision in this state for transmission or distribution expansion. Likewise exempt are charges for services rendered by radio and television stations, including line charges, talent fees, or license fees and charges for films, videotapes, and transcriptions used in producing radio or television broadcasts. The exemption provided in this subSection does not include sales, rental, use, consumption, or storage for use in any political subdivision or municipality in this state of machines and equipment and parts and accessories therefore used in providing two-way telecommunications services to the public for hire by the use of a telecommunications facility, as defined in s. 364.02 (15) , and for which a certificate is required under chapter 364, which facility is owned and operated by any county, municipality, or other political subdivision of the state. Any immunity of any political subdivision of the state or other entity of local government from taxation of the property used to provide telecommunication services that is taxed as a result of this Section is hereby waived. However, the exemption provided in this subSection includes transactions taxable under this chapter which are for use by the operator of a public-use airport, as defined in s. 332.004, in providing such telecommunications services for the airport or its tenants, concessionaires, or licensees, or which are for use by a public hospital for the provision of such telecommunications services.

Section 27. This act may not be construed to limit the rights of local government or the duties of providers of cable service to comply with any and all requirements of federal, state, or local law, including, but not limited to, 47 U.S.C. s.541, s. 166.046, and s. 337.401.

Section 29. If any provision of this act or its application to any person or circumstance is held invalid, the invalidity does not affect other provisions or applications of the act which can be given effect without the invalid provision or application, and to this end the provisions of this act are severable.

Section 30. This act shall take effect upon becoming a law.

Iowa

388.10¹⁰³ Municipal utility providing local exchange services.

1. *a.* A city that owns or operates a municipal utility providing local exchange services pursuant to chapter 476 or the municipal utility shall not do, directly or indirectly, any of the following:

- (1) Use general fund moneys for the ongoing support or subsidy of a telecommunications system.
- (2) Provide any city facilities, equipment, or services to provide telecommunications systems or services at a cost for such facilities, equipment, or services which is less than the reasonable cost of providing such city facilities, equipment, or services.
- (3) Provide any other city service, other than a communications service, to a telecommunications customer at a cost which is less than would be paid by the same person receiving such other city service if the person was not a telecommunications customer.
- (4) Use funds or revenue generated from electric, gas, water, sewage, or garbage services provided by the city for the ongoing support of that portion of a system or service used to provide local exchange services.

b. For purposes of this section, "*telecommunications system*" means only that portion of a system or facilities which is used to provide local exchange services.

2. A city that owns or operates a municipal utility providing local exchange services pursuant to chapter 476 or the municipal utility shall do the following:

a. Prepare and maintain records which record the full cost accounting of providing local exchange service. The records shall show the amount and source of capital for initial construction or acquisition of the local exchange system or facilities. This section shall not prohibit a municipal utility from utilizing capital from any lawful source, provided that the reasonable cost of such capital is accounted for as a cost of providing the service.

b. Adopt rates for the provision of local exchange services that reflect the actual cost of providing the local exchange service. However, this paragraph shall not prohibit the municipal utility from establishing market-based prices for competitive local exchange services.

c. Be subject to all requirements of the city which would apply to any other provider of local exchange services in the same manner as such requirements would apply to such other provider.

¹⁰³ <http://www.legis.state.ia.us/IACODE/2003/388/10.html>

3. This section shall not prohibit the marketing or bundling of other products or services, in addition to local exchange services. However, a city shall include on a billing statement sent to a person receiving services from the city, a separate charge for each service provided to the person. This subsection does not prohibit the city from also including on the billing statement a total amount to be paid by the person.

Louisiana

SENATE BILL NO. 126 – Signed by the Governor on July 5, 2004.¹⁰⁴

Section 1. R.S. 45:844.50(A) is hereby amended and reenacted and R.S. 45:844.56 is hereby enacted to read as follows:

§844.50. Referendum

A. A local governing authority by a majority vote shall call an election on whether or not the local government shall provide the proposed covered services, before engaging or offering to engage in providing such services. An election held for authorization to issue bonds to finance the provision of covered services pursuant to any law of this state, and held before engaging or offering to engage in providing the proposed covered services, shall be sufficient to satisfy the requirements of this Section. One election called by the local governmental authority shall satisfy the requirements of this Section.

§844.56. Impact of local government providing covered service, cable television or telecommunications or advanced services

A. When local government provides a covered service pursuant to the provisions of this Chapter, any obligation of any other person to provide such service pursuant to any ordinance, contract, franchise or other means to provide institutional networks; public, educational and governmental access requirements; system rebuild requirements; monetary contribution or any other similar obligation shall be suspended.

B. The suspension required under this Section shall commence on the date the local government announces that the particular covered service or services is operational and available to any citizen within its jurisdictional boundaries.

C. The suspension required under this Section shall remain in full force and effect until such time as the monetary amount of the like obligations provided by the local government equals the monetary amount provided by the private operators for the previous ten years.

D. The suspension of obligations of other persons established by Subsections (A), (B), and (C) of this Section shall not apply to any obligation of such other person with a local governing authority that has held an election pursuant to R.S. 45:844.50(A)..

DIGEST

Present law defines "covered services" as telecommunications services, advanced services and cable television services, individually and collectively, and regardless of the technology used to provide those services.

Present law authorizes a local governing authority to call an election on whether or not the local government shall provide a covered service. Proposed law requires that the authority to call such election prior to providing such service.

¹⁰⁴ <http://www.legis.state.la.us/billdata/streamdocument.asp?did=295133>

Proposed law suspends any obligation of a private provider of covered service, cable television, telecommunications or advanced services pursuant to any ordinance, contract, franchise or other means to provide institutional networks; public, educational and governmental access requirements; system rebuild requirements; monetary contributions or any other similar obligations when a local government provides such a covered service.

Proposed law provides that the suspension begins when the local government's covered service becomes available for use and requires that the suspension remain in effect until the monetary amount of the like obligation provided by the local government equals the monetary amount provided by the private operators for the last ten years.

(Amends R.S. 45:844.50(A); adds R.S. 45:844.56)

Maine

LD 1128 – Enacted May 20, 2005.¹⁰⁵

Sec. 1. 30-A MRS §2101, as enacted by PL 1987, c. 737, Pt. A, §2 and Pt. C, §106 and amended by PL 1989, c. 6, c. 9, §2 and c. 104, Pt. C, §§8 and 10, is further amended to read:

§2101. Purpose

The purpose of this chapter is to implement the home rule powers granted to municipalities by the Constitution of Maine, Article VIII, Part Second. Unless otherwise prohibited by law, nothing in the chapter may be construed to restrict a municipality's authority to become a provider of wireless Internet access.

Sec. 2. Study and report of municipal capabilities to become providers of Internet services. The Executive Department, State Planning Office, in conjunction with the Public Utilities Commission and the Department of Economic and Community Development, shall study the following: the technology available for creating wireless Internet access throughout rural and urban municipalities in the State and its estimated cost; the various funding resources and strategic partnerships that may be available to municipalities to deliver wireless Internet services to their communities; and the long-term educational and economic benefits that could be derived from municipalities' becoming Internet service providers and the benefits to the State. The State Planning Office shall submit a report on its findings to the Joint Standing Committee on Utilities and Energy no later than September 12, 2005. The joint standing committee of the Legislature having jurisdiction over telecommunications matters may report out a bill to the First Regular Session of the 123rd Legislature in response to the report.

¹⁰⁵ <http://www.mainelegislature.org/legis/bills/LD.asp?LD=1128>

Minnesota

237.19¹⁰⁶ Municipal telecommunications services.

Any municipality shall have the right to own and operate a telephone exchange within its own borders, subject to the provisions of this chapter. It may construct such plant, or purchase an existing plant by agreement with the owner, or where it cannot agree with the owner on price, it may acquire an existing plant by condemnation, as hereinafter provided, but in no case shall a municipality construct or purchase such a plant or proceed to acquire an existing plant by condemnation until such action by it is authorized by a majority of the electors voting upon the proposition at a general election or a special election called for that purpose, and if the proposal is to construct a new exchange where an exchange already exists, it shall not be authorized to do so unless 65 percent of those voting thereon vote in favor of the undertaking. A municipality that owns and operates a telephone exchange may enter into a joint venture as a partner or shareholder with a telecommunications organization to provide telecommunications services within its service area.

¹⁰⁶ <http://www.revisor.leg.state.mn.us/stats/237/19.html>

Missouri

392.410. 1.¹⁰⁷ A telecommunications company not possessing a certificate of public convenience and necessity from the commission at the time this section goes into effect shall have not more than ninety days in which to apply for a certificate of service authority from the commission pursuant to this chapter unless a company holds a state charter issued in or prior to the year 1913 which charter authorizes a company to engage in the telephone business. No telecommunications company not exempt from this subsection shall transact any business in this state until it shall have obtained a certificate of service authority from the commission pursuant to the provisions of this chapter, except that any telecommunications company which is providing telecommunications service on September 28, 1987, and which has not been granted or denied a certificate of public convenience and necessity prior to September 28, 1987, may continue to provide that service exempt from all other requirements of this chapter until a certificate of service authority is granted or denied by the commission so long as the telecommunications company applies for a certificate of service authority within ninety days from September 28, 1987.

2. No telecommunications company offering or providing, or seeking to offer or provide, any interexchange telecommunications service shall do so until it has applied for and received a certificate of interexchange service authority pursuant to the provisions of subsection 1 of this section. No telecommunications company offering or providing, or seeking to offer or provide, any local exchange telecommunications service shall do so until it has applied for and received a certificate of local exchange service authority pursuant to the provisions of section 392.420.

3. No certificate of service authority issued by the commission shall be construed as granting a monopoly or exclusive privilege, immunity or franchise. The issuance of a certificate of service authority to any telecommunications company shall not preclude the commission from issuing additional certificates of service authority to another telecommunications company providing the same or equivalent service or serving the same geographical area or customers as any previously certified company, except to the extent otherwise provided by section 392.450.

4. Any certificate of public convenience and necessity granted by the commission to a telecommunications company prior to September 28, 1987, shall remain in full force and effect unless modified by the commission, and such companies need not apply for a certificate of service authority in order to continue offering or providing service to the extent authorized in such certificate of public convenience and necessity. Any such carrier, however, prior to substantially altering the nature or scope of services provided under a certificate of public convenience and necessity, or adding or expanding services beyond the authority contained in such certificate, shall apply for a certificate of service authority for such alterations or additions pursuant to the provisions of this section.

5. The commission may review and modify the terms of any certificate of public convenience and necessity issued to a telecommunications company prior to September 28, 1987, in order to ensure its conformity with the requirements and policies of this chapter. Any certificate of service authority may be altered or modified by the commission after notice and hearing, upon its own motion or upon application of the person or company affected. Unless exercised within a period of one year from the issuance thereof, authority conferred by a certificate of service authority or a certificate of public convenience and necessity shall be null and void.

¹⁰⁷ <http://www.moga.state.mo.us/statutes/c300-399/3920000410.htm>

6. The commission may issue a temporary certificate which shall remain in force not to exceed one year to assure maintenance of adequate service or to serve particular customers, without notice and hearing, pending the determination of an application for a certificate.

*7. No political subdivision of this state shall provide or offer for sale, either to the public or to a telecommunications provider, a telecommunications service or telecommunications facility used to provide a telecommunications service for which a certificate of service authority is required pursuant to this section. Nothing in this subsection shall be construed to restrict a political subdivision from allowing the nondiscriminatory use of its rights-of-way including its poles, conduits, ducts and similar support structures by telecommunications providers or from providing to telecommunications providers, within the geographic area in which it lawfully operates as a municipal utility, telecommunications services or telecommunications facilities on a nondiscriminatory, competitively neutral basis, and at a price which covers cost, including imputed costs that the political subdivision would incur if it were a for-profit business. Nothing in this subsection shall restrict a political subdivision from providing telecommunications services or facilities:

- (1) For its own use;
- (2) For 911, E-911 or other emergency services;
- (3) For medical or educational purposes;
- (4) To students by an educational institution; or
- (5) Internet-type services.

The provisions of this subsection shall expire on August 28, 2007.

8. The public service commission shall annually study the economic impact of the provisions of this section and prepare and submit a report to the general assembly by December thirty-first of each year.

Nebraska

86-575¹⁰⁸ Agency or political subdivision; dark fiber; disposition; powers.

(1) Any agency or political subdivision of the state may:

- (a) Own dark fiber;
- (b) Sell dark fiber pursuant to section 86-576; and
- (c) Lease dark fiber pursuant to section 86-577.

(2) No agency or political subdivision of the state shall provide telecommunications services for a fee, except as authorized in sections 79-1319, 81-1120.01 to 81-1120.28, 85-401 to 85-418, and 85-1501 to 85-1542, or be issued a certificate of convenience and necessity as a telecommunications common carrier or a permit as a telecommunications contract carrier. Any agency or political subdivision which sells or leases its dark fiber pursuant to sections 86-574 to 86-578 shall not be deemed to be providing telecommunications services for a fee.

86-576 Agency or political subdivision; dark fiber; sale.

Any agency or political subdivision of the state may sell its dark fiber by any method, including auction, sealed bid, or public sale, which it deems to be most advantageous to the public. The sales agreement may require that the agency or political subdivision be solely responsible for the maintenance of the dark fiber and that the buyer is responsible, on a pro rata basis, for any such maintenance costs.

86-577¹⁰⁹ Agency or political subdivision; dark fiber; lease.

Any agency or political subdivision of the state may lease its dark fiber if:

(1) The lessee is a certificated telecommunications common carrier or a permitted telecommunications contract carrier pursuant to section 86-128 or an Internet service provider;

(2) The lease price and profit distribution is approved by the Public Service Commission as follows:

(a) The commission shall not approve any lease price which is less than the market rate for leasing such fiber as determined by the commission. The market rate is the price associated with similar unbundled network elements that may be available from the incumbent local exchange carrier or the price of any other private entity leasing dark fiber optic facilities serving the same or similar territory where the leased equipment is located. Before entering into a lease, each agency or political subdivision shall file a request with the commission for a competitive price comparison to determine the market rate. When conducting a competitive price comparison, the commission in its

¹⁰⁸ <http://statutes.unicam.state.ne.us/Corpus/statutes/chap86/R8605075.html>

¹⁰⁹ <http://statutes.unicam.state.ne.us/Corpus/statutes/chap86/R8605077.html>

discretion shall use rate schedules, interconnection agreements, or other documents within its regulatory oversight and shall gather other market rate information as deemed necessary;

(b) The commission shall not approve any lease price which is agreed upon by the agency or political subdivision and the lessee unless the lease requires that the agency or political subdivision be solely responsible for the maintenance of its dark fiber and that the lessee be responsible, on a pro rata basis, for any such maintenance costs; and

(c) The commission shall not approve any lease unless fifty percent of the profit earned by the agency or political subdivision under the lease is remitted to the Nebraska Internet Enhancement Fund. Profit earned by the agency or political subdivision is the lease price less the cost of infrastructure overbuilding. Before entering into a lease, each agency or political subdivision shall file a request with the commission to determine the cost of overbuilding its fiber optic infrastructure. For purposes of this subdivision, cost of infrastructure overbuilding means the cost of each leased optic fiber, including the cost, on a pro rata basis, associated with the agency's or political subdivision's installation of such fiber;

(3) Any interconnection agreement subject to section 86-122 is approved by the commission; and

(4) The lessee makes every reasonable effort to activate the maximum amount of the leased fiber as is possible, within one year after entering into the lease, unless good cause is shown.

Nebraska Legislative Bill 645 ¹¹⁰

AN ACT relating to telecommunications and technology; to amend sections 25-2602.01 and 86-575, Revised Statutes Supplement, 2004; to define terms; to prohibit agencies, political subdivisions, and public power suppliers from providing certain technology-based services as prescribed; to create a task force; to eliminate provisions relating to county telephone systems; to harmonize provisions; to repeal the original sections; and to outright repeal sections 86-581 to 86-592, Revised Statutes Supplement, 2004.

Be it enacted by the people of the State of Nebraska,

Section 1. For purposes of sections 1 to 7 of this act:

(1) Broadband services means the offering of a capability for high-speed broadband telecommunications capability at a speed or bandwidth in excess of two hundred kilobits per second that enables users to originate and receive high-quality voice, data, and video telecommunications using any technology;

(2) Internet services means the offering of Internet service provider services, providing voice over Internet protocol services, or providing Internet protocol-based video services;

¹¹⁰ http://www.unicam.state.ne.us/legal/SLIP_LB645.pdf

(3) Public power supplier means a public power district, a public power and irrigation district, a municipal electric system, a joint entity formed under the Interlocal Cooperation Act, a joint public agency formed under the Joint Public Agency Act, an agency formed under the Municipal Cooperative Financing Act, or any other governmental entity providing electric service;

(4) Telecommunications has the same meaning as telecommunications defined in section 86-117;

(5) Telecommunications services has the same meaning as telecommunications service defined in section 86-121; and

(6) Video services means the delivery of any subscription video service except those described in section 70-625.

Sec. 2. (1) Except as provided in the Educational Service Units Act and sections 79-1319, 81-1120.01 to 81-1120.28, 85-401 to 85-418, 85-1501 to 85-1542, and 86-575, an agency or political subdivision of the state that is not a public power supplier shall not provide on a retail or wholesale basis any broadband services, Internet services, telecommunications services, or video services.

(2) The provisions of subsection (1) of this section shall not apply to services which an agency or political subdivision of the state was authorized to provide and was providing prior to January 1, 2005.

Sec. 3. (1) A public power supplier shall not provide on a retail basis any broadband services, Internet services, telecommunications services, or video services.

(2) The provisions of subsection (1) of this section shall not apply to services which a public power supplier was authorized to provide and was providing prior to January 1, 2005.

Sec. 4. (1) A public power supplier shall not provide on a wholesale basis any broadband services, Internet services, telecommunications services, or video services.

(2) This section terminates on December 31, 2007.

Sec. 5. (1) For purposes of sections 2 to 4 of this act, providing a service on a retail or wholesale basis shall not include an agency or political subdivision of the state, whether or not a public power supplier, deploying or utilizing broadband services, Internet services, telecommunications services, or video services, for its own use either individually or jointly through the Interlocal Cooperation Act, the Joint Public Agency Act, or the Municipal Cooperative Financing Act for the internal use and purpose of the agency, political subdivision, or public power supplier or to carry out the public purposes of the agency, political subdivision, or public power supplier.

(2) Nothing in sections 1 to 7 of this act prohibits or restricts the ability of an agency, political subdivision, or public power supplier from deploying or utilizing broadband services, Internet services, telecommunications services, or video services for the internal use and purpose

of the agency, political subdivision, or public power supplier, or to carry out the public purposes of the agency, political subdivision, or public power supplier.

Sec. 6. Except as otherwise provided in sections 3 and 4 of this act, nothing in sections 1 to 7 of this act shall be construed to restrict or expand any authority of a public power supplier as that authority existed prior to the effective date of this act.

Sec. 7. (1) The Broadband Services Task Force is created. The members shall be appointed as follows:

- (a) Three members appointed by the Executive Board of the Legislative Council;
- (b) Six members appointed by the Governor, of whom one member shall be appointed from each congressional district and shall represent consumers and three members shall be appointed on an at-large basis;
- (c) Three members of the Public Service Commission;
- (d) Three members of the Nebraska Power Review Board or their designees; and
- (e) Three members of the Nebraska Information Technology Commission or their designees.

(2) Appointments under this section shall be completed within thirty days after the effective date of this act and reported to the Executive Board of the Legislative Council. The chairperson of the executive board shall convene the first meeting of the task force within forty-five days after the appointments are reported, and the task force shall select a chairperson at such time.

(3) On behalf of the task force, the Executive Board of the Legislative Council shall, in consultation with the task force, contract for the services of a meeting facilitator and such other assistance as the executive board, in consultation with the task force, deems necessary within the limits of the funds appropriated. In making its selection of a meeting facilitator, the executive board shall consider experience in the areas of telecommunications and public power.

(4) Issues to be studied by the task force shall include, but are not limited to:

- (a) The implications upon competition of agencies or political subdivisions of the state or public power suppliers offering infrastructure access for broadband services, Internet services, telecommunications services, and video services and private sector investment in networks for the provision of such services;
- (b) The need and necessity for the provision of wholesale broadband services, Internet services, telecommunications services, or video services by agencies or political subdivisions of the state and public power suppliers;
- (c) Issues regarding the establishment of fair and equitable requirements for the regulation and taxation of the provision of wholesale broadband services, Internet services, telecommunications services, and video services by agencies or political subdivisions of the state and public power suppliers;

- (d) An assessment of the extent and availability of public power infrastructure in the state and an evaluation of how such infrastructure could be utilized to enhance the provision of broadband services, Internet services, telecommunications services, and video services to consumers and businesses and the feasibility of using such technology in all regions of the state;
- (e) A determination of how parity could be established for competing interests in the provision of broadband services, Internet services, telecommunications services, and video services, including, but not limited to, the amount of property taxes paid, income taxes, in lieu of tax payments paid, gross receipts taxes, sales taxes paid, tax credits and funds provided under current federal and state laws, and financing capabilities, including shareholder equity;
- (f) An evaluation of the statutory and regulatory frameworks of other states' publicly owned utilities as they relate to providing broadband services, Internet services, telecommunications services, and video services; and
- (g) An analysis of the geographic areas in which broadband services, Internet services, telecommunications services, and video services are being offered in the state, the degree of regulation and competition with respect to each such service within such geographic areas, and the implications of permitting agencies, political subdivisions, and public power suppliers to provide such services on the geographic reach of such services and the degree of competition in such geographic areas.

(5) The task force shall study the issues described in subsection (4) of this section, identify options for the resolution of such issues, and make recommendations to the Legislature and the Governor relating to any policy changes the task force deems desirable. The task force shall complete its work by December 1, 2006, and submit its report to the Legislature, the Governor, the Natural Resources Committee of the Legislature, and the Transportation and Telecommunications Committee of the Legislature by such date.

(6) This section terminates on December 1, 2006.

Sec. 9. Section 86-575, Revised Statutes Supplement, 2004, is amended to read:
86-575. (1) Any agency or political subdivision of the state may:

- (a) Own dark fiber;
- (b) Sell dark fiber pursuant to section 86-576; and
- (c) Lease dark fiber pursuant to section 86-577.

(2) Any agency or political subdivision which sells or leases its dark fiber pursuant to sections 86-574 to 86-578 shall not be deemed to be providing telecommunications services as defined in section 1 of this act.

Nevada

PUBLIC SERVICES¹¹¹

NRS 268.081 Displacement or limitation of competition: Services. The governing body of an incorporated city may, to provide adequate, economical and efficient services to the inhabitants of the city and to promote the general welfare of those inhabitants, displace or limit competition in any of the following areas:

1. Ambulance service.
2. Taxicabs and other public transportation, unless regulated in that city by an agency of the State.
3. Collection and disposal of garbage and other waste.
4. Operations at an airport, including, but not limited to, the leasing of motor vehicles and the licensing of concession stands, but excluding police protection and fire protection.
5. Water and sewage treatment, unless regulated in that city by an agency of the State.
6. Concessions on, over or under property owned or leased by the city.
7. Operation of landfills.
8. Search and rescue.
9. Inspection required by any city ordinance otherwise authorized by law.
10. Construction and maintenance of benches and shelters for passengers of public mass transportation.
11. Any other service demanded by the inhabitants of the city which the city itself is otherwise authorized by law to provide.

NRS 268.086 Telecommunications generally in city whose population is 25,000 or more: Sale of service by city to public prohibited; exception; procedure for city to purchase or construct certain facilities.

1. The governing body of an incorporated city whose population is 25,000 or more:
 - (a) Shall not sell telecommunications service to the general public.

¹¹¹ <http://www.leg.state.nv.us/nrs/NRS-268.html#NRS268Sec081>

(b) May purchase or construct facilities for providing telecommunications that intersect with public rights-of-way if the governing body:

(1) Conducts a study to evaluate the costs and benefits associated with purchasing or constructing the facilities; and

(2) Determines from the results of the study that the purchase or construction is in the interest of the general public.

2. Any information relating to the study conducted pursuant to subsection 1 must be maintained by the city clerk and made available for public inspection during the business hours of the office of the city clerk.

3. Notwithstanding the provisions of paragraph (a) of subsection 1, an airport may sell telecommunications service to the general public.

4. As used in this section:

(a) "Telecommunications" has the meaning ascribed to it in 47 U.S.C. § 153(43), as that section existed on July 16, 1997.

(b) "Telecommunications service" has the meaning ascribed to it in 47 U.S.C. § 153(46), as that section existed on July 16, 1997.

NRS 268.088 Telecommunications service or interactive computer service: Power of city to require franchises and impose terms and conditions on franchises limited; power of city to regulate placement of facilities limited. The governing body of an incorporated city shall not:

1. Impose any terms or conditions on a franchise for the provision of telecommunications service or interactive computer service other than terms or conditions concerning the placement and location of the telephone or telegraph lines and fees imposed for a business license or the franchise, right or privilege to construct, install or operate such lines.

2. Require a company that provides telecommunications service or interactive computer service to obtain a franchise if it provides telecommunications service over the telephone or telegraph lines owned by another company.

3. Require a person who holds a franchise for the provision of telecommunications service to place its facilities in ducts or conduits or on poles owned or leased by the city.

4. As used in this section:

(a) "Interactive computer service" has the meaning ascribed to it in 47 U.S.C. § 230(e)(2), as that section existed on July 16, 1997.

(b) "Telecommunications service" has the meaning ascribed to it in 47 U.S.C. § 153(46), as that section existed on July 16, 1997.

Ohio

§ 1332.01. Definitions.

(A) "Applicable generally accepted accounting principles" means accounting principles and standards set forth in all applicable pronouncements of the governmental accounting standards board.

(B) "Cable service," "cable system," "franchise," and "franchising authority" have the same meanings as in the "Telecommunications Act of 1996," Pub. L. No. 104-104, Title III, Sections 301(a) and 302 (b)(2), 110 Stat. 114, 124, 47 U.S.C.A. 522.

(C) "Cable service provider" means any person or group of persons that is engaged in the provision of cable service over a cable system and directly or indirectly owns a significant interest in the cable system, or that through any arrangement otherwise controls or is responsible for the management and operation of the cable system.

(D) "Color of office," "public office," and "public official" have the same meanings as in section 117.01 of the Revised Code.

(E) "Direct costs" means all costs, whether capital costs, operating costs, or otherwise, that would be eliminated if the service or function to which they relate were discontinued.

(F) "Full cost accounting" means, in accordance with applicable generally accepted accounting principles, accounting for all direct and indirect costs, including capital costs, that are incurred in the ownership, management, or operation of a cable system or provision of cable service over a cable system.

(G) "Indirect costs" means all costs, whether capital costs, operating costs, or otherwise, that are not direct costs. Indirect costs that support multiple services or functions shall be allocated among those services and functions in proportion to the relative burden each service or function places on the cost category and by any reasonable method consistent with applicable generally accepted accounting principles.

(H) "Person" includes any individual, corporation, partnership, limited liability company, association, trust, or political subdivision.

(I) "Private cable service provider" means any cable service provider other than a public cable service provider.

(J) "Private cable service regulation" means any regulation, rule, requirement, or restriction of or by a political subdivision of this state that applies, by resolution, ordinance, rule, regulation, franchising agreement, or otherwise, to the terms and conditions of service, conditions of access to public property, permits for pole attachments, or any other matter concerning or affecting the provision of cable service over a cable system by a private cable service provider.

(K) "Public cable service provider" means any cable service provider that is a political subdivision of this state.

(L) "Public cable service recipient" means any household or business that receives cable service or benefits from video programming service, transmission service, distribution service, repair service, billing service, or customer service that is provided by, originates from, or is controlled by a public cable service provider of a political subdivision.

(M) "Public money" means any of the following:

(1) Any money received, collected by, or due a public official under color of office;

(2) Any money collected by any person on behalf of a public office or as a purported representative or agent of the public office;

(3) Any money received by any person, whether directly or indirectly, from the United States, this state, a county, municipal corporation, township, or any other public office for the purpose of performing or assisting with a governmental function or program authorized by or the responsibility of the United States, this state, a county, municipal corporation, township, or any other public office.

§ 1332.02. State policy to ensure fair competition in cable operations.

It is the public policy of this state under sections 1332.01 to 1332.10 of the Revised Code to:

(A) Ensure fair competition in the provision in this state of cable service over a cable system, consistent with the procompetitive policies of the "Telecommunications Act of 1996," Pub. L. No. 104-104, 110 Stat. 56, 47 U.S.C.A. 151, for the purposes of providing the widest possible diversity of entertainment, information, and news sources to the general public; advancing the unfettered exercise of rights under the first amendment to the United States Constitution to free speech and the free flow of information; enhancing the development and widespread use of technological advances in the provision of cable service over a cable system; and encouraging improved customer service at competitive rates;

(B) Ensure that all cable service over a cable system is provided in this state within a comprehensive and nondiscriminatory federal, state, and local scheme.

§ 1332.03. Status of cable system as public utility not determined; authority of political subdivision unaffected.

(A) Nothing in sections 1332.01 to 1332.10 of the Revised Code is a determination by the general assembly that the provision of cable service over a cable system by a municipal corporation does or does not constitute a public utility pursuant to Section 4 of Article XVIII, Ohio Constitution.

(B) Nothing in sections 1332.01 to 1332.10 of the Revised Code confers authority on a political subdivision of this state to own, lease, or operate a cable system or to provide cable service over a cable system; rather, that authority, if any, is as otherwise may be conferred by law.

(C) Except as expressly provided in sections 1332.01 to 1332.10 of the Revised Code, nothing in those sections restricts the authority of a political subdivision of this state, otherwise conferred by law, to grant a franchise to provide cable service.

§ 1332.04. Prohibited activities by political subdivision providing cable service; request to transfer, modify or renew franchise.

(A) No political subdivision of this state shall provide cable service over a cable system, whether bundled with other services or unbundled, except in accordance with sections 1332.01 to 1332.10 of the Revised Code.

(B) (1) No political subdivision of this state that is a public cable service provider or contracts with a public cable service provider for cable service over a cable system shall, by any means, do any of the following:

(a) Prefer or advantage any public cable service provider or discriminate against any private cable service provider in any material matter affecting the provision, within the jurisdiction of the political subdivision, of cable service over a cable system;

(b) Fail to apply any private cable service regulation without discrimination to a public cable service provider within the jurisdiction of the political subdivision;

(c) Fail to pay all applicable fees, including, but not limited to, franchise fees, permit fees, pole attachment fees, or the equivalent of any such fees.

(2) Nothing in division (B)(1) of this section requires the application of a private cable service regulation to a public cable service provider if that application would be without legal or practical consequence, such as the application of a private cable service regulation requiring provision of an insurance bond, which application to a public cable service provider would require it to insure its performance to itself.

(C) No political subdivision of this state that is a public cable service provider shall have extraterritorial public cable service recipients in excess of fifty per cent of the number of public cable service recipients that reside within the geographical limits of the political subdivision. Nothing in this division prohibits public cable service providers from jointly owning and operating head-end equipment. Each such public cable service provider shall pay that proportion of the full costs of owning and operating such head-end equipment, including, but not

limited to, the costs of construction, acquisition, installation, improvement, enhancement, modification, financing, maintenance, repair, and operation, equal to the total population of the political subdivision that is such public cable service provider divided by the total population of all political subdivisions that are public cable service providers jointly owning and operating such head-end equipment, determined annually or with such frequency as such public cable service providers otherwise agree.

(D) No political subdivision of this state that is a franchising authority shall unreasonably withhold a request by a cable service provider to transfer, modify, or renew, in accordance with the terms of the franchise and in accordance with the provisions of the "Telecommunications Act of 1996," Pub. L. No. 104-104, Title III, Section 301(i), 110 Stat. 117, 47 U.S.C.A. 537, the "Cable Communications Policy Act of 1984," Pub. L. No. 98-549, Section 2, 98 Stat. 2790, 47 U.S.C.A. 545, or the "Cable Television Consumer Protection and Competition Act of 1992," Pub. L. No. 102-385, Section 18, 106 Stat. 1493, 47 U.S.C.A. 546, its existing franchise to provide cable service over a cable system.

§ 1332.05. Notice and form of initial ordinance or resolution concerning publicly financed cable service.

(A) (1) In addition to satisfying any other applicable notice and hearing requirements, the legislative authority of a political subdivision of this state shall provide notice in accordance with division (B) of this section of its consideration of an ordinance or resolution that would authorize the expenditure of public money for a cable system or the provision of cable service over a cable system, including, but not limited to, an ordinance or resolution that would authorize any of the following:

(a) A feasibility study, marketing study, or any cost-benefit analysis concerning the establishment, acquisition, construction, improvement, financing, leasing, management, or operation of a cable system or the provision of cable service over a cable system;

(b) The acquisition, construction, installation, improvement, financing, lease, or agreement for management or operation of facilities capable of providing cable service over a cable system;

(c) An agreement or arrangement for the use of a cable system or for the provision of cable service over a cable system;

(d) Approval of the terms of a franchise agreement for the political subdivision as a public cable service provider, if any such agreement exists, or with any other public cable service provider to provide cable service over a cable system.

(2) Any ordinance or resolution enacted by the legislative authority of a political subdivision of this state authorizing the formation of a public cable service provider by the political subdivision shall include a comprehensible statement of the general plan for financing the acquisition, construction, installation, improvement, or lease of the cable system. No such ordinance or resolution shall be deemed an emergency ordinance or resolution or a measure necessary for the immediate preservation of the public peace, health, or safety in the political subdivision, and no such ordinance or resolution shall take effect sooner than thirty days after its date of enactment. If, within thirty days after such date of enactment, a petition signed by ten per cent of the electors of the political subdivision, based upon the total number of votes cast at the last preceding general election of the political subdivision, shall be filed with the appropriate office demanding a referendum on the ordinance or resolution, the ordinance or resolution shall not take effect until submitted to the electors and approved by a majority of those voting on it.

(3) Divisions (A)(1) and (2) of this section apply only with respect to the first time an ordinance or resolution described, respectively, in division (A)(1) or (2) of this section is considered or enacted, respectively, by a legislative authority, and a legislative authority need not comply with division (A)(1) or (2) of this section regarding any ordinance or resolution that pertains to the same cable system and that is considered or enacted, respectively, subsequent to an ordinance or resolution that was enacted and that complied with division (A)(1) or (2) of this section, respectively.

(B) Notice under division (A)(1) of this section shall be given at least forty-five days prior to the enactment of the ordinance or resolution and shall be given to all persons that have filed a pending application with the political subdivision to provide within its jurisdiction cable service over a cable system or are providing cable service over a cable system pursuant to a franchise granted by the political subdivision. The notice shall be in writing, delivered to the address designated by the person as the address for receipt of notices or, if no such designation has been made, to the operating address of that person as registered with the political subdivision. The notice shall be delivered by certified mail, registered mail, overnight delivery, or a similar method of receipted delivery.

(C) No political subdivision shall fail to comply with division (A) of this section.

§ 1332.06. Special subdivision fund for cable system; annual report.

(A) A political subdivision of this state that is a public cable service provider shall maintain a special fund for its cable system and the provision of cable service over that cable system and shall be subject, with respect to that special fund, to sections 5705.09, 5705.10, 5705.14, 5705.15, 5705.16, 5705.39, 5705.40, 5705.41, 5705.44, and 5705.45 and any other applicable provision of Chapter 5705. of the Revised Code concerning the establishment or maintenance of the special fund.

(B) A political subdivision of this state that is a public cable service provider shall prepare and publish, on or before the first day of June of each year for the prior calendar year, an annual report on its cable system and the provision of cable service over that cable system. The report shall be substantially in accordance with full cost accounting and shall include disclosure of the amount, source, and cost of working capital utilized for its cable system and the provision of cable service over that cable system and estimates of the amount of any franchise fee, regulatory fee, occupation tax, pole attachment fee, property tax, or other fee or tax that would be applicable to its cable system and the provision of cable service over that cable system but for any exemption by reason of its status as a political subdivision, which exemption is authorized by law. Nothing in sections 1332.01 to 1332.10 of the Revised Code requires any elected official of the political subdivision to maintain a log or other record of the time the official spends on the business of the public cable service provider in the course of official duties.

(C) No political subdivision shall fail to comply with division (A) or (B) of this section.

§ 1332.07. Effect of violation by subdivision.

A violation of any provision of division (B) of section 1332.04 of the Revised Code by a political subdivision, whether as a franchising authority, public cable service provider, or otherwise, relieves any other cable service provider in the jurisdiction of the political subdivision from any obligation to comply with or perform any regulation, rule, requirement, or restriction that is the subject of the violation, and entitles any such other cable service provider to equivalent treatment, right, or benefit.

§ 1332.08. Arbitration of disputes.

(A) A dispute for which a civil action is authorized under section 1332.09 of the Revised Code may first be submitted to arbitration in accordance with the procedures and subject to the conditions set forth in divisions (B) to (D) of this section.

(B) Prior to initiating a civil action under section 1332.09 of the Revised Code, a person authorized to bring such an action may provide written notice of proposed arbitration under this section to all persons that would be party to the civil action. The notice shall describe with reasonable specificity the issues that would be the subject of the civil action. The issues shall be submitted to arbitration only if each person receiving such a notice of proposed arbitration gives its written consent not later than seven days after the date of receipt of the notice.

(C) Arbitration under this section shall be conducted and decided by a panel of three arbitrators in accordance with procedures established by the American arbitration association. The persons that would be the complainants in a civil action under section 1332.09 of the Revised Code regarding the issues submitted to arbitration shall select one of the arbitrators, the persons that would be the respondents in the civil action shall select another one of the arbitrators, and the two arbitrators so selected shall jointly select the third arbitrator. If the two arbitrators selected are unable to agree on a third arbitrator within seven days after the latest date either of the two arbitrators was selected, they are removed, and the parties to the proposed arbitration shall each select one substitute arbitrator in the same manner as previously provided in this division, and the two substitute arbitrators so selected shall jointly select the third arbitrator. If the substitute arbitrators are unable to agree on a third arbitrator within seven days after the latest date either such substitute arbitrator was selected, they are removed, and the issues shall not be submitted to arbitration.

(D) Not more than one hundred twenty days after the date a panel of arbitrators is selected under division (C) of this section, the panel shall issue a written opinion setting forth findings and decisions respecting the issues submitted to arbitration. The findings and decisions of the majority of the arbitrators on the panel shall be deemed the findings and decisions of the panel. The findings and decisions shall not be binding but shall be admissible into evidence in any civil action brought under section 1332.09 of the Revised Code respecting the issues submitted to arbitration. The arbitrators shall not have continuing jurisdiction after the written opinion required by this division is issued.

(E) Issues submitted to arbitration under this section may be resolved at any time by binding settlement agreement among the parties to the arbitration.

§ 1332.09. Actions for declaratory or injunctive relief; effect of arbitration opinion.

(A) A political subdivision subject to division (A), (B), or (C) of section 1332.04 or division (C) of section 1332.05 of the Revised Code may bring a civil action for declaratory relief in the court of common pleas in the county in which the political subdivision is located or in any county of this state in which the political subdivision is a public cable service provider.

(B) A person that is or is likely to be adversely affected by a violation of division (A), (B), or (C) of section 1332.04 or division (C) of section 1332.05 of the Revised Code may bring a civil action for declaratory or injunctive relief in such a court of common pleas. Such person that is or is likely to be adversely affected includes a person that provides, or has filed a pending application to provide, within the jurisdiction of the political subdivision, cable service over a cable system, and includes any other political subdivision in which such allegedly noncomplying political subdivision is, or has filed a pending application to become, a public cable service provider.

(C) (1) If an arbitration opinion under section 1332.08 of the Revised Code contains a finding of a violation by a political subdivision of division (A), (B), or (C) of section 1332.04 or division (C) of section 1332.05 of the Revised Code and the political subdivision fails to rectify the violation promptly, and any person adversely affected by the violation substantially prevails in a subsequent civil action against the political subdivision under division (B) of this section regarding the violation not promptly rectified, the political subdivision is liable to the person for the person's costs and reasonable attorney's fees incurred in connection with the civil action.

(2) If an arbitration opinion under section 1332.08 of the Revised Code does not contain a finding of a violation by a political subdivision of division (A), (B), or (C) of section 1332.04 or division (C) of section 1332.05 of the Revised Code and the political subdivision substantially prevails in a subsequent civil action brought against it under division (B) of this section respecting an alleged violation, the complainants in the civil action are liable to the political subdivision for its costs and reasonable attorney's fees incurred in connection with the civil action.

(3) The court shall exercise its equitable discretion in determining the appropriate amount of attorney's fees to be awarded under division (C)(1) or (2) of this section. In exercising that discretion, the court shall consider at least all of the following: the degree to which the party

partially prevailed, the reasonableness of the party's action, the reasonableness of the arbitrator's decision, the effort or lack of effort of the parties to reach a settlement, and the good faith or lack of good faith of the parties.

§ 1332.10. Right of action, remedy or penalty is in addition.

Any right of action, remedy, or penalty under section 1332.08 or 1332.09 of the Revised Code is in addition to any right of action, remedy, or penalty otherwise available under law.

Pennsylvania

[excerpted section on broadband . . .]¹¹²

§ 3014. Network modernization plans.

(h) Prohibition against political subdivision advanced and broadband services deployment. —

(1) Except as otherwise provided for under paragraph (2), a political subdivision or any entity established by a political subdivision may not provide to the public for compensation any telecommunications services, including advanced and broadband services, within the service territory of a local exchange telecommunications company operating under a network modernization plan.

(2) A political subdivision may offer advanced or broadband services if the political subdivision has submitted a written request for the deployment of such service to the local exchange telecommunications company serving the area and, within two months of receipt of the request, the local exchange telecommunications company or one of its affiliates has not agreed to provide the data speeds requested. If the local exchange telecommunications company or one of its affiliates agrees to provide the data speeds requested, then it must do so within 14 months of receipt of the request.

(3) The prohibition in paragraph (1) shall not be construed to preclude the continued provision or offering of telecommunications services by a political subdivision of the same type and scope as were being provided on the effective date of this section.

(i) Broadband Outreach and Aggregation Program. —

(1) The department shall establish a Broadband Outreach and Aggregation Program for the purpose of making expenditures and providing grants from the Broadband Outreach and Aggregation Fund established under section 3015(c) (relating to alternative forms of regulation) for:

(i) Outreach programs for political subdivisions, economic development entities, schools, health care facilities, businesses and residential customers concerning the benefits, use and procurement of broadband services; and

(ii) Seed grants to aggregate customer demand for broadband services in communities or political subdivisions with limited access to such services and to permit customers in such communities or political subdivisions to request such services from a telecommunications provider.

(2) The department shall annually report to the commission on all payments to and expenditures from the Broadband Outreach and Aggregation Fund, and the commission shall verify the accuracy of the contributions from the participating local exchange telecommunications companies.

¹¹² <http://www2.legis.state.pa.us/WU01/LI/BI/BT/2003/0/HB0030P4778.pdf>

(j) Education Technology Program. –

(1) The Department of Education shall establish an Education Technology Program for the purpose of providing grants to school entities from the Education Technology Fund (E-Fund) established under section 3015(d).

(2) The Department of Education shall authorize grants from the E-Fund for the following purposes:

Purchase or lease of telecommunications services, infrastructure or facilities to establish and support broadband networks between, among and within school entities and not for the provision of telecommunications services to the public for compensation.

Purchase or lease of premises telecommunications network equipment and end-user equipment to enable the effective use of broadband networks between, among and within school entities and not for the provision of telecommunications services to the public for compensation.

Distance learning initiatives that use the foregoing broadband networks.

Technical support services for the activities described in subparagraphs (i) through (iii).

Section 5. This act shall take effect as follows:

- (1) The amendment of 66 Pa.C.S. § 3014(h)(3) shall take effect January 1, 2006.
- (2) This section shall take effect immediately.
- (3) The remainder of this act shall take effect immediately.

South Carolina

GOVERNMENT-OWNED TELECOMMUNICATIONS SERVICE PROVIDERS

SECTION 58-9-2600. Purpose of article.

This article regulates the provision of telecommunications service by an agency or entity of the State or a political subdivision of this State, excluding the State Budget and Control Board for services provided as of this article's effective date.

SECTION 58-9-2610. Definitions.

As used in this article:

(1) "Government-owned telecommunications service provider" means a state or local political subdivision or person or entity providing telecommunications service to the public for hire over a facility, operation, or system that is directly or indirectly owned by, operated by, or a financial benefit obtained by or derived from, an agency or entity of the State or any local government. "Government-owned telecommunications service provider" does not include the State Budget and Control Board for services provided as of this article's effective date.

The term "government-owned telecommunications service provider" does not include any state or local governmental entity or agency that obtains or derives financial benefit solely from leasing or renting, to any person or entity, property that is not, in and of itself, a facility used to provide telecommunications service.

(2) "Telecommunications service" for the purpose of this section is defined in Section 58-9-2200(1).

(3) "Person" as defined in Section 58-9-10(4) includes a "government-owned telecommunications service provider".

(4) "Public" means the public generally or any limited portion of the public, including a person or corporation. The term "public" excludes governmental agencies or entities when they receive telecommunications service from the Budget and Control Board pursuant to its statutory authority or other legal requirements.

SECTION 58-9-2620. Duties and restrictions; cost and rate computations; accounting requirements.

Notwithstanding any other provision of law, a government-owned telecommunications service provider shall:

(1) be subject to the same local, state, and federal regulatory, statutory, and other legal requirements that nongovernment-owned telecommunications service providers are subject to, including regulation by the Public Service Commission;

- (2) not be the recipient of any financial benefits of any type that nongovernment-owned telecommunications service providers are not recipients of including, but not limited to, tax exemptions and governmental subsidies of any type. Tax exempt capital financing may be used consistent with Sections 58-9-2620(4)(a) and 58-9-2630(C);
- (3) not be permitted to subsidize the cost of providing telecommunications service with funds from any other nontelecommunications service, operation, or other revenue source. If a determination is made that a direct or indirect subsidy has occurred, the government-owned telecommunications service provider immediately shall increase prices for telecommunications service in a manner that ensures that the subsidy shall not continue, and any amounts used directly or indirectly to subsidize the past operations shall be reimbursed to the general treasury of the appropriate state or local government;
- (4) impute, in calculating the cost incurred and in the rates to be charged for the provision of telecommunications services, the following:
- (a) cost of capital component that is the equivalent to the cost of capital available to nongovernment-owned telecommunications service providers in the same state or locality; and
- (b) an amount equal to all taxes, licenses, fees, and other assessments applicable to a nongovernment-owned telecommunications provider including, but not limited to, federal, state, and local taxes, rights-of-way franchise consent, or administrative fees, and pole attachment fees;
- (5) keep separate books and separately account for the revenues, expenses, property, and source of investment dollars associated with the provision of telecommunications service; and
- (6) be required to prepare and publish an independent annual audit in accordance with generally accepted accounting principles that reflects the full cost of providing the service, including all direct and indirect costs. The indirect costs shall include, but are not limited to, amounts for rights-of-way franchise, consent, or administrative fees, regulatory fees, occupation taxes, pole attachment fees, and ad valorem taxes. The annual accounting must reflect any direct or indirect subsidies received by the government-owned telecommunications provider. Records demonstrating compliance with the provisions of this section shall be filed with the Public Service Commission and be made available for public inspection and copying. The compliance shall be overseen by the Public Service Commission pursuant to and not inconsistent with its power and jurisdiction set forth by law including Section 58-3-140.

SECTION 58-9-2630. Tax collections and payments.

- (A) A government-owned telecommunications service provider shall pay or collect taxes each year in a manner equivalent to taxes paid by nongovernment-owned telecommunications service providers through payment of the following:
- (1) all state taxes, including corporate income taxes, under Section 12-6-530 and utility license taxes under Section 12-20-100;
- (2) all local taxes, including local business license taxes, under Section 58-9-2230, together with any franchise fees and other local taxes and fees, including impact, user, service, or permit fees, pole rental fees, and rights-of-way, franchise, consent, or administrative fees; and
- (3) all property taxes on otherwise exempt real and personal property that are directly used in the provision of telecommunication services.

(B) A government-owned telecommunications service provider shall be required to compute, collect, and remit taxes in the same manner as a nongovernment-owned telecommunications service provider and shall be entitled to the same deductions.

(C) A government-owned telecommunications service provider shall annually remit to the general fund of the government entity owning the telecommunications service provider an amount equivalent to any and all taxes or fees a private sector telecommunications provider would be required to pay.

(D) The taxpayer confidentiality provisions contained in Title 12 shall not apply to the filings of government-owned telecommunications service providers. Provided, however, the Department of Revenue shall require an annual report of all telecommunications providers. The report shall require any telecommunications company licensed in this State to report the total gross of retail telecommunications, to which the business license tax is applicable, pursuant to Section 58-9-2220. This information shall be available to any entity authorized to collect a tax on retail telecommunications or their agent. Information provided to an entity or agent authorized to collect a tax may not be disclosed or provided in any manner to any other person. Such information may only be used by an entity or agent of an entity authorized to collect a tax for purposes of determining the accuracy of tax returns, filings, and payment of taxes.

SECTION 58-9-2650. Liability insurance rates.

The Department of Insurance must determine the South Carolina average market rate for private sector liability insurance for telecommunications operations. In order to have government-owned and nongovernment-owned telecommunications service providers in the same competitive position, to the extent possible, the rate paid for liability insurance for government-owned telecommunications operations must be equal to or greater than the average market rate for private sector liability insurance in South Carolina as determined by the Department of Insurance. To the extent that any government-owned telecommunications service provider pays less than the average market rate for this insurance established by the Department of Insurance, the difference shall be remitted by the government-owned telecommunications service provider to the general fund of the government owning the telecommunications provider. Provided, however, nothing in this section shall be construed to mean that government-owned telecommunication providers are not covered by the South Carolina Tort Claims Act.

Tennessee

PART 4 TELECOMMUNICATIONS SERVICES

7-52-401. ¹¹³Authority with relations to telecommunications equipment and services.

Every municipality operating an electric plant, whether pursuant to this chapter or any other public or private act or the provisions of the charter of the municipality, county or metropolitan government, has the power and is authorized, on behalf of its municipality acting through the authorization of the board or supervisory body having responsibility for the municipal electric plant, to acquire, construct, own, improve, operate, lease, maintain, sell, mortgage, pledge or otherwise dispose of any system, plant or equipment for the provision of telephone, telegraph, telecommunications services, or any other like system, plant, or equipment within and/or without the corporate or county limits of such municipality, and, with the consent of such other municipality, within the corporate or county limits of any other municipality, in compliance with title 65, chapters 4 and 5, and all other applicable state and federal laws, rules and regulations. A municipality shall only be authorized to provide telephone, telegraph or telecommunications services through its board or supervisory body having responsibility for the municipality's electric plant. A municipality providing any of the services authorized by this section may not dispose of all or substantially all of the system, plant and equipment used to provide such services except upon compliance with the procedures set forth in § 7-52-132. Notwithstanding § 65-4-101(6)(B) or any other provision of this code or of any private act, to the extent that any municipality provides any of the services authorized by this section, such municipality shall be subject to regulation by the Tennessee regulatory authority in the same manner and to the same extent as other certificated providers of telecommunications services, including, without limitation, rules or orders governing anti-competitive practices, and shall be considered as and have the duties of a public utility, as defined in § 65-4-101, but only to the extent necessary to effect such regulation and only with respect to such municipality's provision of telephone, telegraph and communication services.

7-52-402. Subsidies - Municipal costs

A municipality providing any of the services authorized by § 7-52-401 shall not provide subsidies for such services. Notwithstanding the limitations set forth in the preceding sentence, a municipality providing such services shall be authorized to:

- (1) Dedicate a reasonable portion of the electric plant to the provision of such services, the costs of which shall be allocated to such services for regulatory purposes; and
- (2) Lend funds, at a rate of interest not less than the highest rate then earned by the municipality on invested electric plant funds, to acquire, construct, and provide working capital for the system, plant, and equipment necessary to provide any of the services authorized under § 7-52-401; provided, that such interest costs shall be allocated to the cost of such services for regulatory purposes. Any loan of funds made pursuant to this section shall be approved in advance by the state director of local finance and shall contain such provisions as are required by the state director.

¹¹³ <http://198.187.128.12/tennessee/lpext.dll?f=templates&fn=fs-main.htm&2.0>

7-52-403. Applicability to municipalities - Municipalities subject to regulatory laws and rules.

a) To the extent that it provides any of the services authorized by § 7-52-401, a municipality has all the powers, obligations and authority granted entities providing telecommunications services under applicable laws of the United States or the state of Tennessee. To the extent that such authority and powers do not conflict with the provisions of title 65, chapter 4 or 5, and any rules, regulations, or orders issued thereunder, a municipality providing any of the services authorized by § 7-52-401 has all the authority and powers with respect to such services as are enumerated in this chapter.

(b) Notwithstanding the authorization granted in subsection (a), a municipal electric system shall not provide any of the services authorized by § 7-52-401 unrelated to its electric services within the service area of an existing telephone cooperative with fewer than one hundred thousand (100,000) total lines organized and operating under the provisions of title 65, chapter 29, and therefore shall adhere to those regulations of the 1995 Tennessee Telecommunications Act and rules of the Tennessee regulatory authority, which are applicable to the telephone cooperatives, and specifically §§ 65-4-101 and 65-29-130.

7-52-404. Tax equivalent payments.

A municipality providing any of the services authorized by § 7-52-401 shall make tax equivalent payments with respect to such services in the manner established for electric systems under part 3 of this chapter. For purposes of the calculation of such tax equivalent payments only, the system, plant, and equipment used to provide such services, shall be considered an electric plant, and the revenues received from such services shall be considered operating revenues. For regulatory purposes, a municipality shall allocate to the costs of any services authorized by § 7-52-401 an amount equal to a reasonable determination of the state, local, and federal taxes which would be required to be paid for each fiscal year by a nongovernmental corporation that provides the identical services.

7-52-405. Allocation of costs by municipalities.

For regulatory purposes, a municipality shall allocate to the costs of providing any of the services authorized by § 7-52-401:

- (1) An amount for attachments to poles owned by the municipality equal to the highest rate charged by the municipality to any other person or entity for comparable pole attachments; and
- (2) Any applicable rights-of-way fees, rentals, charges, or payments required by state or local law of a nongovernmental corporation that provides the identical services.

7-52-406. Licensing laws not superseded - Applicability to cable services.

(a) Nothing in this part or in § 7-52-102(10) or § 7-52-117(d), as amended by chapter 531 of the Public Acts of 1997, shall be construed to allow a municipality to provide any service for which a license, certification, or registration is required under title 62, chapter 32, part 3.

(b) Nothing in this part and § 7-52-102(10) or § 7-52-117(d), as amended by chapter 531 of the Public Acts of 1997, or any private act, charter, metropolitan charter, or amendments thereto, shall allow a municipality, county, metropolitan government, department, board or other

entity of local government to provide any service for which a license, certification, or registration is required under title 62, chapter 32, part 3 or to provide pager service.

7-52-407. Supersession of conflicting laws.

This part and § 7-52-102(10) or § 7-52-117(d), as amended by chapter 531 of the Public Acts of 1997, supersede any conflicting provisions of general law, private act, charter or metropolitan charter provisions.

PART 6 CABLE TELEVISION, INTERNET AND RELATED SERVICES

7-52-601.¹¹⁴ Authority to operate services.

(a) Each municipality operating an electric plant described in § 7-52-401 has the power and is authorized within its service area, under the provisions of this act and on behalf of its municipality acting through the authorization of the board or supervisory body having responsibility for the municipal electric plant (herein sometimes referred to as "governing board"), to acquire, construct, own, improve, operate, lease, maintain, sell, mortgage, pledge or otherwise dispose of any system, plant, or equipment for the provision of cable service, two-way video transmission, video programming, Internet services, or any other like system, plant, or equipment within and/or without the corporate or county limits of such municipality, and, with the consent of such other municipality, within the corporate or county limits of any other municipality. A municipality may only provide cable service, two-way video transmission, video programming, Internet services or other like service through its board or supervisory body having responsibility for the municipality's electric plant. A municipality providing any of the services authorized by this section may not dispose of all or substantially all of the system, plant, and equipment used to provide such services except upon compliance with the procedures set forth in § 7-52-132.

(b) The services permitted by this part do not include telephone, telegraph, and telecommunications services permitted under part 4 of this chapter.

(c) Notwithstanding the foregoing, a municipality shall not have any power or authority under subsection (a) in any area where a privately-held cable television operator is providing cable service over a cable system and in total serves six thousand (6,000) or fewer subscribers over one (1) or more cable systems.

(d) Notwithstanding the foregoing, a municipality shall not have any power or authority under subsection (a) in any area of any existing telephone cooperative that has been providing cable service for not less than ten (10) years under the authority of the federal communications commission.

(e) (1) Notwithstanding the provisions of this section, the comptroller of the treasury shall select, not later than August 1, 2003, a municipal electric system providing services in accordance with this part to provide, as a pilot project, the services permitted under this section beyond its service area but not beyond the boundaries of the county in which such municipal electric system is principally located; provided, that:

¹¹⁴ <http://198.187.128.12/tennessee/lpext.dll?f=templates&fn=fs-main.htm&2.0>

- (A) The municipal electric system receives a resolution from the legislative body of the county regarding service in unincorporated areas of the county, or any other municipality within such county regarding service within such municipality, requesting the municipal electric system to provide such services to its residents; and
- (B) The municipal electric system obtains the consent of each electric cooperative or other municipal electric system in whose territory the municipal electric system will provide such services.
- (2) The comptroller shall expand the pilot project established in subdivision (e)(1) to include one (1) municipal electric system located in the eastern grand division of the state that proposes to provide services in accordance with this part. Not later than August 1, 2004, the comptroller shall select the municipal electric system pilot project pursuant to this subdivision (e)(2), subject to the requirements of subdivisions (e)(1)(A) and (e)(1)(B).
- (3) The comptroller shall report to the general assembly, not later than January 31, 2008, with recommendations regarding whether the pilot projects permitted by this part should be continued or expanded to other systems. The comptroller shall evaluate the efficiency and profitability of the pilot project services of the municipal electric system in making such recommendation; provided, that the comptroller shall not so evaluate a pilot project system that is not providing service in competition with another cable service provider.
- (4) There shall be no other municipal electric system selected to provide pilot project services until the comptroller issues the recommendation required by subdivision (e)(3).

7-52-602. Business plan - Public notice and hearing - Referendum.

To provide the services authorized under this part, the governing board of the municipal electric system shall comply with the following procedure:

- (1) Upon the approval and at the direction of the governing board, the municipal electric system shall file a detailed business plan with the office of the comptroller of the treasury which includes a three-year cost benefit analysis and which identifies and discloses the total projected direct cost and indirect cost of and revenues to be derived from providing the proposed services. The plan shall also include a description of the quality and level of services to be provided, pro forma financial statements, a detailed financing plan, marketing plan, rate structure and any other information requested by the director of the division of local finance;
- (2) After review of the plan, the comptroller of the treasury shall provide a written analysis of the feasibility of the proposed business plan to the chief legislative body of the municipality in which the municipal electric system is located and the governing board within sixty (60) days; provided, that the calculation of the time to file the comptroller's written analysis shall not commence until the business plan is complete. Upon expiration of the sixty-day period, the governing board may proceed without the written analysis of the comptroller;
- (3) If the governing board determines to proceed, it shall publish in a newspaper of general circulation within that area a notice of its intent to proceed with the offering of additional services. The notice shall include a general description of the business plan and a summary of the governing board's findings on such plan. The notice shall also specify a date on which the governing board shall conduct a public hearing on the provision of such services;
- (4) The governing board shall conduct a public hearing on the provision of such services. No sooner than fourteen (14) days after such public hearing, the governing board may consider authorizing the provision of additional services. A municipal electric system may provide

additional services only after approval by a two-thirds (2/3) majority vote of the chief legislative body of the municipality in which the municipal electric system is located or by a public referendum held pursuant to subsection (5); and

(5) Upon a majority vote by the chief legislative body of the municipality in which the municipal electric system is located that a public referendum should be held on the question of whether the municipal electric system may provide additional services, the chief legislative body of such municipality may direct the county election commission to hold a referendum on such question. In order for the question to be placed on the ballot, the chief legislative body shall so direct not less than sixty (60) days before a regular general election. Upon receipt of such direction from the chief legislative body, the county election commission shall place the question on the ballot. The referendum shall only be held in conjunction with a regular general election being held in the municipality and only registered voters of such municipality may participate in the referendum. The question to appear on the ballot shall be:

"FOR THE MUNICIPAL ELECTRIC SYSTEM PROVIDING ADDITIONAL SERVICES" and "AGAINST THE MUNICIPAL ELECTRIC SYSTEM PROVIDING ADDITIONAL SERVICES."

7-52-603. Separate division to provide services - Costs and charges.

(a) (1) (A) A municipal electric system shall establish a separate division to deliver any of the services authorized by this part. The division shall maintain its own accounting and record-keeping system. A municipal electric system may not subsidize the operation of the division with revenues from its power or other utility operations.

(B) A municipal electric system may lend funds, at a rate of interest not less than the highest rate then earned by the municipal electric system on invested electric plant funds, to acquire, construct, and provide working capital for the system, plant, and equipment necessary to provide any of the services authorized by this part; provided, that such interest costs shall be allocated to the cost of such services.

(2) The division shall be subject to the terms and conditions of those types of provisions generally provided in existing or future pole attachment agreements, including without limitation, allocation of costs for rates, insurance, and other related costs, and the responsibility for make-ready provisions, that are applicable to private providers of services provided by the division under this part.

(3) In response to facility installation, maintenance, or relocation requests made under a pole attachment agreement by a private provider of services provided by the division under this part, the municipal electric system shall provide the same response times and service quality as the municipal electric system provides for requests of the division for such services and shall provide non-discriminatory access to these facilities. Nothing in this subsection shall impair the rights of a municipal electric system under its pole attachment agreement with the private provider of services.

(b) A municipal electric system providing any of the services authorized by this part shall fully allocate any costs associated with the services provided under this part to the rates for those services.

(c) A municipal electric system providing any of the services authorized by this part shall establish and charge rates that cover all costs related to the provision of such services.

(d) A municipal electric system shall charge or allocate as costs to the division the same pole rate attachment fee as it charges any other franchise holder providing the same service.

(e) Any fee imposed by the municipality on a private provider of cable services, shall also be allocated to the division.

7-52-604. Guidelines for accounting - Audits - Financial reports.

(a) The comptroller of the treasury shall adopt, after consideration of written comments submitted by any interested party, guidelines or procedures to establish appropriate accounting principles applicable to the division's affiliated transactions and cost allocation. The development of such guidelines or procedures shall not be deemed a rule-making proceeding under the uniform administrative procedures act, compiled in title 4, chapter 5.

(b) A municipal division providing the services authorized by this part is subject to a finance and compliance audit under the provisions of § 6-56-105, which audit shall be conducted in accordance with enterprise fund accounting principles under generally accepted accounting principles.

(c) On or before June 30, 2005, the office of the comptroller of the treasury shall prepare a report to the general assembly evaluating the operations of municipal electric systems offering services permitted by this part, which shall include a recommendation as to whether the authority to provide such services should be expanded, restricted or terminated.

7-52-605. Powers and obligations of service providers.

To the extent that it provides any of the services authorized by this part, a municipal electric system shall have all the powers, obligations, and authority granted entities providing similar services under applicable laws of the United States or the state of Tennessee or applicable municipal ordinances.

7-52-606. Tax payments - Payments in lieu of taxes.

(a) A municipal electric system providing any of the services authorized by this part shall make tax equivalent payments with respect to such services in the manner established for electric systems under part 3 of this chapter; provided, that such payments shall not include amounts based on net system revenues as provided in § 7-52-304(1)(B). For purposes of the calculation of such tax equivalent payments only, the system, plant, and equipment used to provide such services shall be considered an electric plant, and the revenues received from such services shall be considered operating revenues. The amount payable pursuant to this paragraph shall not exceed the amount that would otherwise be due from a municipality were it a private provider of such services paying ad valorem taxes.

(b) In addition to the requirement of subsection (a), and notwithstanding any other provision of law to the contrary, a division of the municipal electric system providing the cable services, internet services, two-way video transmission or video programming services authorized by this part, is subject to payment to the appropriate units of government of an amount in lieu of the following taxes on that part of its revenues, plant and facilities dedicated or allocated to those services described in § 7-52-601(a), to the same extent as if it were a private provider of such services:

- (1) Excise and franchise tax law under title 67, chapter 4, parts 20 and 21;
- (2) Sales tax law under title 67, chapter 6; and
- (3) Local privilege tax law under title 67, chapter 4, part 7.

7-52-607. Financing powers of service providers.

Any municipality authorized by this part to provide any of the services described herein shall have the power and is hereby authorized to borrow money, contract debts and issue its bonds or notes to finance in whole or in part the cost of the acquisition, purchase, construction, reconstruction, improvement, betterment or extension of a system or systems, or any part thereof, to provide any of such services, including the acquisition of land or rights in land and the acquisition and installation of all equipment necessarily incident to the provision of such services. Any bonds or notes authorized to be issued pursuant to this section shall be issued only in accordance with the procedures, requirements and limitations set forth in chapter 34 of this title, or title 9, chapter 21, as elected by the municipality issuing the bonds or notes. All provisions of chapter 34 of this title, or title 9, chapter 21, relating to the authorization, issuance and sale of bonds or notes, the use and application of revenues of the system or systems being financed, powers to secure such bonds and notes, covenants and remedies for the benefit of bond or note holders with respect to such bonds or notes, validity and tax exemption with respect to such bonds or notes, and powers to refund and refinance such bonds or notes shall apply to any bonds or notes authorized hereunder and the system or systems financed thereby with the same effect as if such system or systems were a "public works" if proceeding under chapter 34 of this title, or a "public works project" if proceeding under title 9, chapter 21.

7-52-608. Conflicting law or provisions.

This part supersedes any conflicting provisions of general law, private act, charter or metropolitan charter provisions.

7-52-609. Civil actions.

A franchisee under chapter 59 of this title operating in the service area of the municipal electric division providing services under this part may bring a civil action for injunctive or declaratory relief for a violation under this part, and may recover actual damages upon a showing of a willful violation under this part. Jurisdiction and venue for such action shall be in the chancery court in the county where the alleged violation is occurring or will occur. Such actions shall be scheduled for hearing as a priority by the court.

7-52-610. Liability of service providers.

A division established by a municipal electric system to deliver any of the services authorized by this part shall not be considered a governmental entity for the purposes of the Tennessee Governmental Tort Liability Act, compiled in title 29, chapter 20.

7-52-611. Customer right to action for damages.

A customer of a municipal electric system shall have a right of action to recover damages against such system pursuant to this part.

HB 1403 (amending 7-52-604)

SECTION 1. Tennessee Code Annotated, Section 7-52-604, is amended by adding the following language as a new, appropriately designated subsection:

(d) Except for two (2) municipal electric systems located in the middle grand division of the state, no additional municipal electric system shall apply or be granted authorization to provide the services described in § 7-52-601 until February 1, 2006, at which time the General Assembly shall receive and consider the comptroller's report described in subsection (c); provided, however, that municipal electric systems presently operating pursuant to § 7-52-601 on the effective date of this act or having received approval pursuant to § 7-52-602 as of such date shall not be subject to the requirements of this subsection.

SECTION 2. This act shall take effect upon becoming a law, the public welfare requiring it.

Texas

SUBCHAPTER E. MUNICIPALITIES¹¹⁵

Sec. 54.201. CERTIFICATION PROHIBITED.

The commission may not grant to a municipality a:

- (1) certificate of convenience and necessity;
- (2) certificate of operating authority; or
- (3) service provider certificate of operating authority.

Sec. 54.202. PROHIBITED MUNICIPAL SERVICES.

(a) A municipality or municipal electric system may not offer for sale to the public:

- (1) a service for which a certificate of convenience and necessity, a certificate of operating authority, or a service provider certificate of operating authority is required; or
- (2) a nonswitched telecommunications service used to connect a customer's premises with:
 - (A) another customer's premises within the exchange; or
 - (B) a long distance provider that serves the exchange.

(b) Subsection (a) applies to a service offered either directly or indirectly through a telecommunications provider.

Sec. 54.2025. LEASE OF FIBER OPTIC CABLE FACILITIES.

Nothing in this subchapter shall prevent a municipality, or a municipal electric system that is a member of a municipal power agency formed under Chapter 163 by adoption of a concurrent resolution by the participating municipalities on or before August 1, 1975, from leasing any of the excess capacity of its fiber optic cable facilities (dark fiber), so long as the rental of the fiber facilities is done on a nondiscriminatory, nonpreferential basis.

¹¹⁵ <http://www.puc.state.tx.us/rules/statutes/pura03.pdf>

Utah

10-18-101. 116 Title – Policy statement.

- (1) This chapter is known as the "Municipal Cable Television and Public Telecommunications Services Act."
- (2) The Legislature finds that it is the policy of this state to:
 - (a) ensure that cable television services and public telecommunications services are provided through fair competition consistent with the federal Telecommunications Act of 1996, Pub. L. 104-104, in order to provide the widest possible diversity of information and news sources to the general public;
 - (b) advance the exercise of rights under the First Amendment of the Constitution of the United States;
 - (c) enhance the development and widespread use of technological advances in providing cable television services and public telecommunications services;
 - (d) encourage improved customer service of cable television services and public telecommunications services at competitive rates;
 - (e) ensure that cable television services and public telecommunications services are each provided within a consistent, comprehensive, and nondiscriminatory federal, state, and local government framework; and
 - (f) ensure that when a municipality provides to its inhabitants cable television services, public telecommunications services, or both, and competes with private providers whose activities are regulated by the municipality, the municipality does not discriminate against the competing providers of the same services.

10-18-102. Definitions.

As used in this chapter:

- (1) "Cable television service" means:
 - (a) the one-way transmission to subscribers of:
 - (i) video programming; or
 - (ii) other programming service; and
 - (b) subscriber interaction, if any, that is required for the selection or use of:
 - (i) the video programming; or
 - (ii) other programming service.
- (2) "Capital costs" means all costs of providing a service that are capitalized in accordance with generally accepted accounting principles.
- (3) "Cross subsidize" means to pay a cost included in the direct costs or indirect costs of providing a service that is not accounted for in the full cost of accounting of providing the service.
- (4) "Direct costs" means those expenses of a municipality that:
 - (a) are directly attributable to providing:
 - (i) a cable television service; or
 - (ii) a public telecommunications service; and
 - (b) would be eliminated if the service described in Subsection (4)(a) were not provided by the municipality.
- (5) "Feasibility consultant" means an individual or entity with expertise in the processes and economics of providing:
 - (a) cable television service; and
 - (b) public telecommunications service.

¹¹⁶ http://www.le.state.ut.us/~code/TITLE10/htm/10_0C017.htm

- (6) (a) "Full-cost accounting" means the accounting of all costs incurred by a municipality in providing:
- (i) a cable television service; or
 - (ii) a public telecommunications service.
- (b) The costs included in a full-cost accounting include all:
- (i) capital costs;
 - (ii) direct costs; and
 - (iii) indirect costs.
- (7) (a) "Indirect costs" means any costs:
- (i) identified with two or more services or other functions; and
 - (ii) that are not directly identified with a single service or function.
- (b) "Indirect costs" may include cost factors for:
- (i) administration;
 - (ii) accounting;
 - (iii) personnel;
 - (iv) purchasing;
 - (v) legal support; and
 - (vi) other staff or departmental support.
- (8) "Private provider" means a person that:
- (a) provides:
 - (i) cable television services; or
 - (ii) public telecommunications services; and
 - (b) is a private entity.
- (9) "Public telecommunications service" means the two-way transmission of signs, signals, writing, images, sounds, messages, data, or other information of any nature by wire, radio, lightwaves, or other electromagnetic means offered to the public generally.
- (10) "Subscribers" means a person that lawfully receives:
- (a) cable television services; or
 - (b) public telecommunications services.

10-18-103. Antitrust immunity.

(1) When a municipality is offering or providing a cable television service or public telecommunications service, the immunity from antitrust liability afforded to political subdivisions of the state under Section 76-10-919 does not apply to the municipality providing those services.

(2) A municipality that provides a cable television service or a public telecommunications service is subject to applicable antitrust liabilities under the federal Local Government Antitrust Act of 1984, 15 U.S.C. Secs. 34 to 36.

10-18-104. Application to existing contracts.

(1) (a) If before the sooner of March 1 or the effective date of the chapter, the legislative body of a municipality authorized the municipality to offer or provide cable television services or public telecommunications services, each authorized service:

- (i) is exempt from Part 2; and
- (ii) is subject to Part 3.

(b) The exemption described in Subsection (1)(a)(i) may not apply to any cable television service or public telecommunications service authorized by the legislative body of a municipality on or after the sooner of March 1 or the effective date of this chapter.

(2) This chapter does not:

(a) invalidate any contract entered into by a municipality before the sooner of March 1 or the effective date of this chapter:

(i) for the design, construction, equipping, operation, or maintenance of facilities used or to be used by the municipality, or by a private provider under a contract with the municipality for the purpose of providing:

- (A) cable television services; or
- (B) public telecommunications services;

(ii) with a private provider for the use of the facilities described in Subsection (2)(a)(i) in connection with the private provider offering:

- (A) cable television services; or
- (B) public telecommunications services;

(iii) with a subscriber for providing:

- (A) a cable television service; or
- (B) a public telecommunications service; or

(iv) to obtain or secure financing for the acquisition or operation of the municipality's facilities or equipment used in connection with providing:

- (A) a cable television service; or
- (B) a public telecommunications service; or

(b) impair any security interest granted by a municipality as collateral for the municipality's obligations under a contract described in Subsection (2)(a).

(3) (a) A municipality meeting the one or more of the following conditions is exempt from this chapter as provided in Subsection (3)(b):

(i) a municipality that adopts or enacts a bond resolution on or before January 1, 2001, to fund facilities or equipment that the municipality uses to provide:

- (A) cable television services; or
- (B) public telecommunications services; or

(ii) a municipality that has operated for at least three years consecutively before the sooner of March 1 or the effective date of this chapter:

- (A) a cable television service; or
- (B) a public telecommunications service.

(b) A municipality described in Subsection (3)(a) is exempt from this chapter except for:

- (i) Subsection 10-18-303(4);
- (ii) Subsection 10-18-303(7);
- (iii) Subsection 10-18-303(9);
- (iv) Section 10-18-304; and
- (v) Section 10-18-305.

(4) For the time period beginning on the effective date of this chapter and ending on December 31, 2001, a municipality that operated a cable television service as of January 1, 2001, is exempt from Subsection 10-18-301(1)(d).

10-18-105. Scope of chapter.

- (1) Nothing in this chapter authorizes any county or other political subdivision of this state to:
- (a) provide:
- (i) a cable television service; or
 - (ii) a public telecommunications service; or
- (b) purchase, lease, construct, maintain, or operate a facility for the purpose of providing:
- (i) a cable television service; or
 - (ii) a public telecommunications service.
- (2) Except as provided in Subsection (3), this chapter does not apply to a municipality purchasing, leasing, constructing, or equipping facilities:
- (a) that are designed to provide services within the municipality; and
- (b) that the municipality:
- (i) uses for internal municipal government purposes; or
 - (ii) by written contract, leases, sells capacity in, or grants other similar rights to a private provider to use the facilities in connection with a private provider offering:
 - (A) cable television services; or
 - (B) public telecommunications services.
- (3) (a) As used in this Subsection (3), "municipal entity" means:
- (i) a municipality; or
 - (ii) an entity created pursuant to an agreement:
 - (A) under Title 11, Chapter 13, Interlocal Cooperation Act; and
 - (B) to which a municipality is a party.
- (b) Notwithstanding Subsection (2), a municipal entity shall comply with Subsection (3)(c) if the municipal entity purchases, leases, constructs, or equips facilities that the municipal entity by written contract leases, sells capacity in, or grants other similar rights to a private provider to use the facilities in connection with a private provider offering:
- (i) cable television services; or
 - (ii) public telecommunications services.
- (c) A municipal entity described in Subsection (3)(b) shall, with respect to an action described in Subsection (3)(b), comply with the obligations imposed on a municipality pursuant to:
- (i) Section 10-18-302; and
 - (ii) Subsections 10-18-303(3) and (4).

10-18-106. Severability.

If any provision of this chapter or the application of any provision of this chapter is found invalid, the remainder of this chapter shall be given effect without the invalid provision or application.

10-18-201. Limitations on providing a cable television and public telecommunications services.

- (1) Except as provided in this chapter, a municipality may not:
 - (a) provide to one or more subscribers:
 - (i) a cable television service; or
 - (ii) a public telecommunications service; or
 - (b) for the purpose of providing a cable television service or a public telecommunications service to one or more subscribers, purchase, lease, construct, maintain, or operate any facility.
- (2) For purposes of this chapter, a municipality provides a cable television service or public telecommunications service if the municipality provides the service:
 - (a) directly or indirectly, including through an authority or instrumentality:
 - (i) acting on behalf of the municipality; or
 - (ii) for the benefit of the municipality;
 - (b) by itself;
 - (c) through:
 - (i) a partnership; or
 - (ii) joint venture; or
 - (d) by contract, resale, or otherwise.

10-18-202. Required steps before a municipality may provide cable television or public telecommunications services.

Before a municipality may engage or offer to engage in an activity described in Subsection 10-18-201(1), the legislative body of the municipality shall:

- (1) hold a preliminary public hearing;
- (2) if the legislative body elects to proceed after holding the preliminary public hearing required by Subsection (1), approve the hiring of a feasibility consultant to conduct a feasibility study in accordance with Section 10-18-203;
- (3) determine whether under the feasibility study conducted under Section 10-18-203, the average annual revenues under Subsection 10-18-203(2)(f) exceed the average annual costs under Subsection 10-18-203(2)(e) by at least the amount necessary to meet the bond obligations of any bonds issued to fund the proposed cable television services or public telecommunications services:
 - (a) based on the feasibility study's analysis:
 - (i) for the first year of the study; and
 - (ii) the five-year projection; and
 - (b) separately stated with respect to:
 - (i) the proposed cable television services; or
 - (ii) the proposed public telecommunications services;
- (4) if the conditions of Subsection (3) are met, hold the public hearings required by Section 10-18-203; and
- (5) after holding the public hearings required by Section 10-18-203, if the legislative body of the municipality elects to proceed, adopt by resolution the feasibility study.

10-18-203. Feasibility study on providing cable television or public telecommunications services – Public hearings.

- (1) If a feasibility consultant is hired under Section 10-18-202, the legislative body of the municipality shall require the feasibility consultant to:

- (a) complete the feasibility study in accordance with this section;
- (b) submit to the legislative body by no later than 180 days from the date the feasibility consultant is hired to conduct the feasibility study:
 - (i) the full written results of the feasibility study; and
 - (ii) a summary of the results that is no longer than one page in length; and
- (c) attend the public hearings described in Subsection (4) to:
 - (i) present the feasibility study results; and
 - (ii) respond to questions from the public.
- (2) The feasibility study described in Subsection (1) shall at a minimum consider:
 - (a) (i) if the municipality is proposing to provide cable television services to subscribers, whether the municipality providing cable television services in the manner proposed by the municipality will hinder or advance competition for cable television services in the municipality;
 - (ii) if the municipality is proposing to provide public telecommunications services to subscribers, whether the municipality providing public telecommunications services in the manner proposed by the municipality will hinder or advance competition for public telecommunications services in the municipality;
 - (b) whether but for the municipality any person would provide the proposed:
 - (i) cable television services; or
 - (ii) public telecommunications services;
 - (c) the fiscal impact on the municipality of:
 - (i) the capital investment in facilities that will be used to provide the proposed:
 - (A) cable television services; or
 - (B) public telecommunications services; and
 - (ii) the expenditure of funds for labor, financing, and administering the proposed:
 - (A) cable television services; or
 - (B) public telecommunications services;
 - (d) the projected growth in demand in the municipality for the proposed:
 - (i) cable television services; or
 - (ii) public telecommunications services;
 - (e) the projections at the time of the feasibility study and for the next five years, of a full-cost accounting for a municipality to purchase, lease, construct, maintain, or operate the facilities necessary to provide the proposed:
 - (i) cable television services; or
 - (ii) public telecommunications services; and
 - (f) the projections at the time of the feasibility study and for the next five years of the revenues to be generated from the proposed:
 - (i) cable television services; or
 - (ii) public telecommunications services.
- (3) For purposes of the financial projections required under Subsections (2)(e) and (f), the feasibility consultant shall assume that the municipality will price the proposed cable television services or public telecommunications services consistent with Subsection 10-18-303(5).

10-18-204. Vote permissible – Referendum.

- (1) (a) A legislative body by a majority vote may call an election on whether or not the municipality shall provide the proposed:
 - (i) cable television services; or

- (ii) public telecommunications services.
 - (b) If under Subsection (1)(a) the legislative body calls an election, the election shall be held:
 - (i) (A) at the next municipal general election; or
 - (B) as provided in Subsection 20A-1-203(1), at a local special election the purpose of which is authorized by this section;
- and
- (ii) in accordance with Title 20A, Election Code, except as provided in this section.
 - (c) The notice of the election shall include with any other information required by law:
 - (i) a summary of the cable television services or public telecommunications services that the legislative body of the municipality proposes to provide to subscribers residing within the boundaries of the municipality;
 - (ii) the feasibility study summary under Section 10-18-203;
 - (iii) a statement that a full copy of the feasibility study is available for inspection and copying; and
 - (iv) the location in the municipality where the feasibility study may be inspected or copied.
 - (d) The ballot at the election shall pose the question substantially as follows: Shall the [name of the municipality] provide [cable television service or public telecommunications service] to the inhabitants of the [municipality].
 - (e) The ballot proposition may not take effect until submitted to the electors and approved by the majority of those voting on the ballot.
- (2) In accordance with Title 20A, Chapter 7, Issues Submitted to the Voters, a municipality legislative body's action to have the municipality provide cable television services or public telecommunications services is subject to local referenda.

10-18-301. Enterprise funds for cable television or public telecommunications services.

- (1) A municipality that provides a cable television service or a public telecommunications service under this chapter:
- (a) shall establish an enterprise fund to account for the municipality's operations of a cable television service or public telecommunications service;
 - (b) for accounting purposes only, may account for its cable television services and its public telecommunications services in a single enterprise fund under Chapter 6, Uniform Fiscal Procedures Act for Utah Cities;
 - (c) shall, consistent with the requirements of Section 10-6-135, adopt separate operating and capital budgets for the municipality's:
 - (i) cable television services; and
 - (ii) public telecommunications services;
 - (d) may not transfer any appropriation or other balance in any enterprise fund established by the municipality under this section to another enterprise fund; and
 - (e) may not transfer any appropriation or other balance in any other enterprise fund established by the municipality under Chapter 6, Uniform Fiscal Procedures Act for Utah Cities, to any enterprise fund established by the municipality under this section.
- (2) The restrictions on transfers described in Subsections (1)(d) and (e) do not apply to transfers made by a municipality between other enterprise funds established by the municipality.

10-18-302. Bonding authority.

- (1) In accordance with Title 11, Chapter 14, Utah Municipal Bond Act, the legislative body of a municipality may by resolution determine to issue one or more revenue bonds or general obligation bonds to finance the capital costs for facilities necessary to provide to subscribers:
- (a) a cable television service; or
 - (b) a public telecommunications service.

- (2) The resolution described in Subsection (1) shall:
- (a) describe the purpose for which the indebtedness is to be created; and
 - (b) specify the dollar amount of the one or more bonds proposed to be issued.
- (3) (a) A revenue bond issued under this section shall be secured and paid for:
- (i) from the revenues generated by the municipality from providing:
 - (A) cable television services with respect to revenue bonds issued to finance facilities for the municipality's cable television services; and
 - (B) public telecommunications services with respect to revenue bonds issued to finance facilities for the municipality's public telecommunications services; and
 - (ii) notwithstanding Subsection (3)(b) and Subsection 10-18-303(3)(a), from revenues generated under Title 59, Chapter 12, Sales and Use Tax Act, if:
 - (A) notwithstanding Subsection 11-14-2(2) and except as provided in Subsections (4) and (5), the revenue bond is approved by the registered voters in an election held:
 - (I) except as provided in Subsection (3)(a)(ii)(A)(II), pursuant to the provisions of Title 11, Chapter 14, Utah Municipal Bond Act, that govern bond elections; and
 - (II) notwithstanding Subsection 11-14-4(2), at a regular general election;
 - (B) the revenues described in this Subsection (3)(a)(ii) are pledged as security for the revenue bond; and
 - (C) the municipality or municipalities annually appropriate the revenues described in this Subsection (3)(a)(ii) to secure and pay the revenue bond issued under this section.
- (b) Except as provided in Subsection (3)(a)(ii), a municipality may not pay the origination, financing, or other carrying costs associated with the one or more revenue bonds issued under this section from the general funds or other enterprise funds of the municipality.
- (4) (a) As used in this Subsection (4), "municipal entity" means an entity created pursuant to an agreement:
- (i) under Title 11, Chapter 13, Interlocal Cooperation Act; and
 - (ii) to which a municipality is a party.
- (b) The requirements of Subsection (3)(a)(ii)(A) do not apply to a municipality or municipal entity that issues revenue bonds, or to a municipality that is a member of a municipal entity that issues revenue bonds, if:
- (i) on or before March 2, 2004, the municipality that is issuing revenue bonds or that is a member of a municipal entity that is issuing revenue bonds has published the first notice described in Subsection (4)(b)(iii);
 - (ii) on or before April 15, 2004, the municipality that is issuing revenue bonds or that is a member of a municipal entity that is issuing revenue bonds makes the decision to pledge the revenues described in Subsection (3)(a)(ii) as security for the revenue bonds described in this Subsection (4)(b)(ii);
 - (iii) the municipality that is issuing the revenue bonds or the municipality that is a member of the municipal entity that is issuing the revenue bonds has:
 - (A) held a public hearing for which public notice was given by publication of the notice in a newspaper published in the municipality or in a newspaper of general circulation within the municipality for two consecutive weeks, with the first publication being not less than 14 days before the public hearing; and
 - (B) the notice identifies:
 - (I) that the notice is given pursuant to Title 11, Chapter 14, Utah Municipal Bond Act;
 - (II) the purpose for the bonds to be issued;
 - (III) the maximum amount of the revenues described in Subsection (3)(a)(ii) that will be pledged in any fiscal

year;

(IV) the maximum number of years that the pledge will be in effect; and

(V) the time, place, and location for the public hearing;

(iv) the municipal entity that issues revenue bonds:

(A) adopts a final financing plan;

(B) in accordance with Title 63, Chapter 2, Government Records Access and Management Act, makes available to the public at the time the municipal entity adopts the final financing plan:

(I) the final financing plan; and

(II) all contracts entered into by the municipal entity, except as protected by Title 63, Chapter 2, Government Records Access and Management Act;

(v) any municipality that is a member of a municipal entity described in Subsection (4)(b)(iv):

(A) not less than 30 calendar days after the municipal entity complies with Subsection (4)(b)(iv)(B), holds a final public hearing;

(B) provides notice, at the time the municipality schedules the final public hearing, to any person who has provided to the municipality a written request for notice; and

(C) makes all reasonable efforts to provide fair opportunity for oral testimony by all interested parties; and

(vi) except with respect to a municipality that issued bonds prior to March 1, 2004, not more than 50% of the average annual debt service of all revenue bonds described in this section to provide service throughout the municipality or municipal entity may be paid from the revenues described in Subsection (3)(a)(ii).

(5) On or after July 1, 2007, the requirements of Subsection (3)(a)(ii)(A) do not apply to a municipality that issues revenue bonds if:

(a) the municipality that is issuing the revenue bonds has:

(i) held a public hearing for which public notice was given by publication of the notice in a newspaper published in the municipality or in a newspaper of general circulation within the municipality for two consecutive weeks, with the first publication being not less than 14 days before the public hearing; and

(ii) the notice identifies:

(A) that the notice is given pursuant to Title 11, Chapter 14, Utah Municipal Bond Act;

(B) the purpose for the bonds to be issued;

(C) the maximum amount of the revenues described in Subsection (3)(a)(ii) that will be pledged in any fiscal year;

(D) the maximum number of years that the pledge will be in effect; and

(E) the time, place, and location for the public hearing; and

(b) except with respect to a municipality that issued bonds prior to March 1, 2004, not more than 50% of the average annual debt service of all revenue bonds described in this section to provide service throughout the municipality or municipal entity may be paid from the revenues described in Subsection (3)(a)(ii).

(6) A municipality that issues bonds pursuant to this section may not make or grant any undue or unreasonable preference or advantage to itself or to any private provider of:

(a) cable television services; or

(b) public telecommunications services.

10-18-303. General operating limitations.

A municipality that provides a cable television service or a public telecommunications service under this chapter is subject to the operating limitations of this section.

- (1) A municipality that provides a cable television service shall comply with:
 - (a) the Cable Communications Policy Act of 1984, 47 U.S.C. 521, et seq.; and
 - (b) the regulations issued by the Federal Communications Commission under the Cable Communications Policy Act of 1984, 47 U.S.C. 521, et seq.
 - (2) A municipality that provides a public telecommunications service shall comply with:
 - (a) the Telecommunications Act of 1996, Pub. L. 104-104;
 - (b) the regulations issued by the Federal Communications Commission under the Telecommunications Act of 1996, Pub. L. 104-104;
 - (c) Section 54-8b-2.2 relating to:
 - (i) the interconnection of essential facilities; and
 - (ii) the purchase and sale of essential services; and
 - (d) the rules made by the Public Service Commission of Utah under Section 54-8b-2.2.
 - (3) A municipality may not cross subsidize its cable television services or its public telecommunications services with:
 - (a) tax dollars;
 - (b) income from other municipal or utility services;
 - (c) below-market rate loans from the municipality; or
 - (d) any other means.
 - (4) (a) A municipality may not make or grant any undue or unreasonable preference or advantage to itself or to any private provider of:
 - (i) cable television services; or
 - (ii) public telecommunications services.

(b) A municipality shall apply without discrimination as to itself and to any private provider the municipality's ordinances, rules, and policies, including those relating to:

 - (i) obligation to serve;
 - (ii) access to public rights of way;
 - (iii) permitting;
 - (iv) performance bonding;
 - (v) reporting; and
 - (vi) quality of service.
 - (c) Subsections (4)(a) and (b) do not supersede the exception for a rural telephone company in Section 251 of the Telecommunications Act of 1996, Pub. L. 104-104.
- (5) In calculating the rates charged by a municipality for a cable television service or a public telecommunications service, the municipality:
 - (a) shall include within its rates an amount equal to all taxes, fees, and other assessments that would be applicable to a similarly situated private provider of the same services, including:
 - (i) federal, state, and local taxes;
 - (ii) franchise fees;
 - (iii) permit fees;
 - (iv) pole attachment fees; and
 - (v) fees similar to those described in Subsections (5)(a)(i) through (iv); and

- (b) may not price any cable television service or public telecommunications service at a level that is less than the sum of:
 - (i) the actual direct costs of providing the service;
 - (ii) the actual indirect costs of providing the service; and
 - (iii) the amount determined under Subsection (5)(a).
- (6) (a) A municipality that provides cable television services or public telecommunications services shall establish and maintain a comprehensive price list of all cable television services or public telecommunications services offered by the municipality.
- (b) The price list required by Subsection (6)(a) shall:
 - (i) include all terms and conditions relating to the municipality providing each cable television service or public telecommunications service offered by the municipality;
 - (ii) be published in a newspaper having general circulation in the municipality; and
 - (iii) be available for inspection:
 - (A) at a designated office of the municipality; and
 - (B) during normal business hours.
- (c) At least five days before the date a change to a municipality's price list becomes effective, the municipality shall:
 - (i) notify the following of the change:
 - (A) all subscribers to the services for which the price list is being changed; and
 - (B) any other persons requesting notification of any changes to the municipality's price list; and
 - (ii) publish notice in a newspaper of general circulation in the municipality.
- (d) If there is no newspaper of general circulation in the municipality, the municipality shall publish the notice required by this Subsection (6) in a newspaper of general circulation that is nearest the municipality.
- (e) A municipality may not offer a cable television service or a public telecommunications service except in accordance with the prices, terms, and conditions set forth in the municipality's price list.
- (7) A municipality may not offer to provide or provide cable television services or public telecommunications services to a subscriber that does not reside within the geographic boundaries of the municipality.
- (8) (a) A municipality shall keep accurate books and records of the municipality's:
 - (i) cable television services; and
 - (ii) public telecommunications services.
- (b) The books and records required to be kept under Subsection (8)(a) are subject to legislative audit to verify the municipality's compliance with the requirements of this chapter including:
 - (i) pricing;
 - (ii) recordkeeping; and
 - (iii) antidiscrimination.
- (9) A municipality may not receive distributions from the Universal Public Telecommunications Service Support Fund established in Section 54-8b-15.

10-18-304. Eminent domain.

A municipality may not exercise its power of eminent domain to condemn plant and equipment of a private provider for the purpose of providing to a subscriber:

- (1) a cable television service; or
- (2) a public telecommunications service.

10-18-305. Quality of service standards.

- (1) A municipality that provides a cable television service or a public telecommunications service shall adopt an ordinance governing the quality of service the municipality shall provide to its subscribers.
- (2) The ordinance required by Subsection (1) shall:
 - (a) be competitively neutral; and
 - (b) contain standards that are substantially similar to the standards imposed on private providers operating within the geographic boundaries of the municipality under:
 - (i) the Cable Communications Policy Act of 1984, 47 U.S.C. 521, et seq.;
 - (ii) the Telecommunications Act of 1996, Pub. L. 104-104;
 - (iii) Title 54, Public Utilities;
 - (iv) regulations issued by the Federal Communications Commission under the statutes listed in Subsections (2)(b)(i) and (ii); and
 - (v) rules made by the Public Service Commission of Utah under Title 54, Public Utilities.

10-18-306. Enforcement and appeal.

- (1) Before a person that is or is likely to have a substantial interest affected by a municipality's violation of this chapter may file an action in district court for violation of this chapter, that person shall file a written complaint with the municipality in accordance with this section.
- (2) (a) A municipality that provides a cable television service or a public telecommunications service shall enact an ordinance establishing a procedure for the filing and resolution of complaints relating to the municipality providing:
 - (i) a cable television service; or
 - (ii) a public telecommunications service.
- (b) The procedure required by Subsection (2)(a) shall:
 - (i) permit any person described in Subsection (1) to file a complaint including:
 - (A) an individual subscriber; or
 - (B) a private provider that competes with the municipality in the geographic boundaries of the municipality;
 - (ii) establish an expedited process that requires within 45 days after the date the complaint is filed:
 - (A) that a hearing be held, unless the parties to the proceeding waive the requirement of a hearing; and
 - (B) the issuance of a final decision; and
 - (iii) provide that failure to render a decision within the time allotted shall be treated as an adverse decision for purposes of appeal.
- (3) Appeal of an adverse decision from the municipality may be taken to the district court for a de novo proceeding.

Virginia

§ 15.2-2160.¹¹⁷ Provision of telecommunications services.

A. Any locality that operates an electric distribution system may provide telecommunications services, including local exchange telephone service as defined in § 56-1, within or outside its boundaries if the locality obtains a certificate pursuant to § 56-265.4:4. Such locality may provide telecommunications services within any locality in which it has electric distribution system facilities as of March 1, 2002. Any locality providing telecommunications services on March 1, 2002, may provide such services within any locality within 75 miles of the geographic boundaries of its electric distribution system as such system existed on March 1, 2002.

B. A locality that has obtained a certificate pursuant to § 56-265.4:4 shall (i) comply with all applicable laws and regulations for the provision of telecommunications services; (ii) make a reasonable estimate of the amount of all federal, state, and local taxes (including income taxes and consumer utility taxes) that would be required to be paid or collected for each fiscal year if the locality were a for-profit provider of telecommunications services, (iii) prepare reasonable estimates of the amount of any franchise fees and other state and local fees (including permit fees and pole rental fees), and right-of-way charges that would be incurred in each fiscal year if the locality were a for-profit provider of telecommunications services, (iv) prepare and publish annually financial statements in accordance with generally accepted accounting principles showing the results of operations of its provision of telecommunications services, and (v) maintain records demonstrating compliance with the provisions of this section that shall be made available for inspection and copying pursuant to the Virginia Freedom of Information Act (§ 2.2-3700 et seq.).

C. Each locality that has obtained a certificate pursuant to § 56-265.4:4 shall provide nondiscriminatory access to for-profit providers of telecommunications services on a first-come, first-served basis to rights-of-way, poles, conduits or other permanent distribution facilities owned, leased or operated by the locality unless the facilities have insufficient capacity for such access and additional capacity cannot reasonably be added to the facilities.

D. The prices charged and the revenue received by a locality for providing telecommunications services shall not be cross-subsidized by other revenues of the locality or affiliated entities, except (i) in areas where no offers exist from for-profit providers of such telecommunications services, or (ii) as permitted by the provisions of subdivision B 5 of § 56-265.4:4.

E. No locality providing such services shall acquire by eminent domain the facilities or other property of any telecommunications service provider to offer cable, telephone, data transmission or other information or online programming services.

§ 56-265.4:4. Certificate to operate as a telephone utility.¹¹⁸

A. The Commission may grant certificates to competing telephone companies, or any county, city or town that operates an electric distribution system, for interexchange service where it finds that such action is justified by public interest, and is in accordance with such terms, conditions, limitations, and restrictions as may be prescribed by the Commission for competitive telecommunications services. A

¹¹⁷ <http://leg1.state.va.us/cgi-bin/legp504.exe?2000+cod+15.2-2160>

¹¹⁸ <http://leg1.state.va.us/cgi-bin/legp504.exe?2000+cod+56-265.4C4>

certificate to provide interexchange services shall not authorize the holder to provide local exchange services. The Commission may grant a certificate to a carrier, or any county, city or town that operates an electric distribution system, to furnish local exchange services as provided in subsection B.

B. 1. After notice to all local exchange carriers certificated in the Commonwealth and other interested parties and following an opportunity for hearing, the Commission may grant certificates to any telephone company, or any county, city or town that operates an electric distribution system, proposing to furnish local exchange telephone service in the Commonwealth. In determining whether to grant a certificate under this subsection, the Commission may require that the applicant show that it possesses sufficient technical, financial, and managerial resources. Before granting any such certificate, the Commission shall: (i) consider whether such action reasonably protects the affordability of basic local exchange telephone service, as such service is defined by the Commission, and reasonably assures the continuation of quality local exchange telephone service; and (ii) find that such action will not unreasonably prejudice or disadvantage any class of telephone company customers or telephone service providers, including the new entrant and any incumbent local exchange telephone company, and is in the public interest. Except as provided in subsection A of § 15.2-2160, all local exchange certificates granted by the Commission after July 1, 2002, shall be to provide service in any territory in the Commonwealth unless the applicant specifically requests a different certificated service territory. The Commission shall amend the certificated service territory of each local exchange carrier that was previously certificated to provide service in only part of the Commonwealth to permit such carrier's provision of local exchange service throughout the Commonwealth beginning on September 1, 2002, unless that local exchange carrier notifies the Commission prior to September 1, 2002, that it elects to retain its existing certificated service territory. A local exchange carrier shall only be considered an incumbent in any certificated service territory in which it was considered an incumbent prior to July 1, 2002.

2. A Commission order, including appropriate findings of fact and conclusions of law, denying or approving, with or without modification, an application for certification of a new entrant shall be entered no more than 180 days from the filing of the application, except that the Commission, upon notice to all parties in interest, may extend that period in additional 30-day increments not to exceed an additional 90 days in all.

3. The Commission shall (i) promote and seek to assure the provision of competitive services to all classes of customers throughout all geographic areas of the Commonwealth by a variety of service providers; (ii) require equity in the treatment of the certificated local exchange telephone companies so as to encourage competition based on service, quality, and price differences between alternative providers; (iii) consider the impact on competition of any government-imposed restrictions limiting the markets to be served or the services offered by any provider; (iv) determine the form of rate regulation, if any, for the local exchange services to be provided by the applicant and, upon application, the form of rate regulation for the comparable services of the incumbent local exchange telephone company provided in the geographical area to be served by the applicant; and (v) promulgate standards to assure that there is no cross-subsidization of the applicant's competitive local exchange telephone services by any other of its services over which it has a monopoly, whether or not those services are telephone services. The Commission shall also adopt safeguards to ensure that the prices charged and the revenue received by a county, city or town for providing telecommunications services shall not be cross-subsidized from other revenues of the county, city or town or affiliated entities, except (i) in areas where no offers exist from for-profit providers of such telecommunications services, or (ii) as authorized pursuant to subdivision 5 of this subsection.

4. The Commission shall discharge the responsibilities of state commissions as set forth in the federal Telecommunications Act of 1996 (P.L. 104-104) (the Act) and applicable law and regulations, including, but not limited to, the arbitration of interconnection agreements between

local exchange carriers; however, the Commission may exercise its discretion to defer selected issues under the Act. If the Commission incurs additional costs in arbitrating such agreements or resolving related legal actions or disputes that cannot be recovered through the maximum levy authorized pursuant to § 58.1-2660, that levy shall be increased above the levy authorized by that section to the extent necessary to recover such additional costs.

5. Upon the Commission's granting of a certificate to a county, city or town under this section, such county, city, or town (i) shall be subject to regulation by the Commission for intrastate telecommunications services, (ii) shall have the same duties and obligations as other certificated providers of telecommunications services, (iii) shall separately account for the revenues, expenses, property, and source of investment dollars associated with the provision of such services, and (iv) to ensure that there is no unreasonable advantage gained from a government agency's taxing authority and control of government-owned land, shall charge an amount for such services that (a) does not include any subsidies, unless approved by the Commission, and (b) takes into account, by imputation or allocation, equivalent charges for all taxes, pole rentals, rights of way, licenses, and similar costs incurred by for-profit providers. Each certificated county, city, or town that provides telecommunications services regulated by the Commission shall file an annual report with the Commission demonstrating that the requirements of clauses (iii) and (iv) of this subdivision have been met. The Commission may approve a subsidy under this section if deemed to be in the public interest and provided that such subsidy does not result in a price for the service lower than the price for the same service charged by the incumbent provider in the area.

6. A locality that has obtained a certificate pursuant to this section shall (i) comply with all applicable laws and regulations for the provision of telecommunications services; (ii) make a reasonable estimate of the amount of all federal, state, and local taxes (including income taxes and consumer utility taxes) that would be required to be paid or collected for each fiscal year if the locality were a for-profit provider of telecommunications services, (iii) prepare reasonable estimates of the amount of any franchise fees and other state and local fees (including permit fees and pole rental fees), and right-of-way charges that would be incurred in each fiscal year if the locality were a for-profit provider of telecommunications services, (iv) prepare and publish annually financial statements in accordance with generally accepted accounting principles showing the results of operations of its provision of telecommunications services, and (v) maintain records demonstrating compliance with the provisions of this section that shall be made available for inspection and copying pursuant to the Virginia Freedom of Information Act (§ 2.2-3700 et seq.).

7. Each locality that has obtained a certificate pursuant to this section shall provide nondiscriminatory access to for-profit providers of telecommunications services on a first-come, first-served basis to rights-of-way, poles, conduits or other permanent distribution facilities owned, leased or operated by the locality unless the facilities have insufficient capacity for such access and additional capacity cannot reasonably be added to the facilities.

8. The prices charged and the revenue received by a locality for providing telecommunications services shall not be cross-subsidized by other revenues of the locality or affiliated entities, except (i) in areas where no offers exist from for-profit providers of such telecommunications services, or (ii) as permitted by the provisions of subdivision B 5.

9. The Commission shall promulgate rules necessary to implement this section. In no event, however, shall the rules necessary to implement subdivisions B 5 iii and iv, B 6 ii through v, and B 8 impose any obligations on a locality that has obtained a certificate pursuant to this section, but is not yet providing telecommunications services regulated by the Commission.

C. Article 5.1 (§ 56-484.7:1 et seq.) of Chapter 15 of this title shall not apply to a county, city or town that has obtained a certificate pursuant to this section.

D. Any county, city, or town that has obtained a certificate pursuant to this section may construct, own, maintain, and operate a fiber optic or communications infrastructure to provide consumers with Internet services, data transmission services, and any other communications service that its infrastructure is capable of delivering; provided, however, nothing in this subsection shall authorize the provision of cable television services or other multi-channel video programming service. Furthermore, nothing in this subsection shall alter the authority of the Commission.

E. Any county, city, or town that has obtained a certificate pursuant to this section and that had installed a cable television headend prior to December 31, 2002, is authorized to own and operate a cable television system or other multi-channel video programming service and shall be exempt from the provisions of §§ 15.2-2108.4 through 15.2-2108.8. Nothing in this subsection shall authorize the Commission to regulate cable television service.

Washington

§ 54.16.330¹¹⁹

Telecommunications facilities – Purposes – Limitations – Provision of wholesale telecommunications services – Eminent domain.

(1) A public utility district in existence on June 8, 2000, may construct, purchase, acquire, develop, finance, lease, license, handle, provide, add to, contract for, interconnect, alter, improve, repair, operate, and maintain any telecommunications facilities within or without the district's limits for the following purposes:

- (a) For the district's internal telecommunications needs; and
- (b) For the provision of wholesale telecommunications services within the district and by contract with another public utility district.

Nothing in this subsection shall be construed to authorize public utility districts to provide telecommunications services to end users.

(2) A public utility district providing wholesale telecommunications services shall ensure that rates, terms, and conditions for such services are not unduly or unreasonably discriminatory or preferential. Rates, terms, and conditions are discriminatory or preferential when a public utility district offering rates, terms, and conditions to an entity for wholesale telecommunications services does not offer substantially similar rates, terms, and conditions to all other entities seeking substantially similar services.

(3) A public utility district providing wholesale telecommunications services shall not be required to but may establish a separate utility system or function for such purpose. In either case, a public utility district providing wholesale telecommunications services shall separately account for any revenues and expenditures for those services according to standards established by the state auditor pursuant to its authority in chapter RCW and consistent with the provisions of this title. Any revenues received from the provision of wholesale telecommunications services must be dedicated to costs incurred to build and maintain any telecommunications facilities constructed, installed, or acquired to provide such services, including payments on debt issued to finance such services, until such time as any bonds or other financing instruments executed after June 8, 2000, and used to finance such telecommunications facilities are discharged or retired.

(4) When a public utility district provides wholesale telecommunications services, all telecommunications services rendered to the district for the district's internal telecommunications needs shall be allocated or charged at its true and full value. A public utility district may not charge its non-telecommunications operations rates that are preferential or discriminatory compared to those it charges entities purchasing wholesale telecommunications services.

(5) A public utility district shall not exercise powers of eminent domain to acquire telecommunications facilities or contractual rights held by any other person or entity to telecommunications facilities.

(6) Except as otherwise specifically provided, a public utility district may exercise any of the powers granted to it under this title and other

¹¹⁹ <http://www.leg.wa.gov/RCW/index.cfm?section=54.16.330&fuseaction=section>

applicable laws in carrying out the powers authorized under this section. Nothing in chapter 81, Laws of 2000 limits any existing authority of a public utility district under this title.

Wisconsin

2003 Wisconsin Act 278¹²⁰

SECTION 1. 66.0419 (3m) of the statutes is created to read:

66.0419 (3m) MUNICIPAL CABLE TELEVISION SYSTEM COSTS. (a) Except for costs for any of the following, a municipality that owns and operates a cable television system, or an entity owned or operated, in whole or in part, by such a municipality, may not require nonsubscribers of the cable television system to pay any of the costs of the cable television system:

1. Public, educational, and governmental access channels.
2. Debt service on bonds issued under s. 66.0619 to finance the construction, renovation, or expansion of a cable television system.
3. The provision of broadband service by the cable television system, if the requirements of s. 66.0422 (3d) (a) 1., 2., or 3. are satisfied. (am) Paragraph (a) does not apply to a municipality that, on March 1, 2004, was providing cable service to the public. (b) Paragraph (a) does not apply to a municipality if all of the following conditions apply:
 1. On November 1, 2003, the public service commission has determined that the municipality is an alternative telecommunications utility under s. 196.203.
 2. A majority of the governing board of the municipality votes to submit the question of supporting the operation of a cable television system by the municipality to the electors in an advisory referendum and a majority of the voters in the municipality voting at the advisory referendum vote to support the operation of a cable television system by the municipality.

SECTION 2. 66.0422 of the statutes is created to read:

66.0422 Cable television, telecommunications, and broadband facilities. (1) In this section:

- (a) "Cable service" has the meaning given in s. 66.0419 (2) (c).
- (b) "Local government" means a city, village, or town.
- (c) "Telecommunications service" has the meaning given in s. 196.01 (9m).

(2) Except as provided in subs. (3), (3d), (3m), and (3n), no local government may enact an ordinance or adopt a resolution authorizing the local government to construct, own, or operate any facility for providing cable service, telecommunications service, or broadband service, directly or indirectly, to the public, unless all of the following are satisfied:

- (a) The local government holds a public hearing on the proposed ordinance or resolution.
- (b) Notice of the public hearing is given by publication of a class 3 notice under ch. 985 in the area affected by the proposed ordinance or resolution.
- (c) No less than 30 days before the public hearing, the local government prepares and makes available for public inspection a report estimating the total costs of, and revenues derived from, constructing, owning, or operating the facility and including a cost-benefit analysis of the facility for a period of at least 3 years. The costs that are subject to this paragraph include personnel costs and costs of acquiring, installing, maintaining, repairing, or operating any plant or equipment, and include an appropriate allocated portion of costs of personnel, plant, or equipment that are used to provide jointly both telecommunications services and other services.

¹²⁰ <http://www.legis.state.wi.us/2003/data/acts/03Act278.pdf>

(3) Subsection (2) does not apply to a local government if all of the following conditions apply:

(a) On November 1, 2003, the public service commission has determined that the local government is an alternative telecommunications utility under s. 196.203.

(b) A majority of the governing board of the local government votes to submit the question of supporting the operation of the facility for providing cable service, telecommunications service, or Internet access service, directly or indirectly to the public, by the local government to the electors in an advisory referendum and a majority of the voters in the local government voting at the advisory referendum vote to support operation of such a facility by the local government.

(3d) (a) Subsection (2) does not apply to a facility for providing broadband service to an area within the boundaries of a local government if any of the following are satisfied:

1. The local government asks, in writing, each person that provides broadband service within the boundaries of the local government whether the person currently provides broadband service to the area or intends to provide broadband service within 9 months to the area and within 60 days after receiving the written request no person responds in writing to the local government that the person currently provides broadband service to the area or intends to provide broadband service to the area within 9 months.

2. The local government determines that a person who responded to a written request under subd. 1. that the person currently provides broadband service to the area did not actually provide broadband service to the area and no other person makes the response to the local government described in subd. 1.

3. The local government determines that a person who responded to a written request under subd. 1. that the person intended to provide broadband service to the area within 9 months did not actually provide broadband service to the area within 9 months and no other person makes the response to the local government described in subd. 1.

(3m) Subsection (2) does not apply to a facility for providing broadband service if all of the following apply:

(a) The municipality offers use of the facility on a nondiscriminatory basis to persons who provide broadband service to end users of the service.

(b) The municipality itself does not use the facility to provide broadband service to end users.

(c) The municipality determines that, at the time that the municipality authorizes the construction, ownership, or operation of the facility, whichever occurs first, the facility does not compete with more than one provider of broadband service.

(3n) Subsection (2) does not apply to a local government that, on March 1, 2004, was providing cable service to the public.

(4) Notwithstanding sub. (2), a local government may enact an ordinance or adopt a resolution authorizing the local government to prepare a report specified in sub. (2) (c).

(5) If a local government enacts an ordinance or adopts a resolution that complies with the requirements of sub. (2), the local government must determine the cost incurred in preparing the report specified in sub. (2) (c). As soon as practicable after the local government generates revenue from a facility specified in sub. (2) (intro.), the local government shall use the revenues to reimburse the treasury of the local government for the cost determined under this subsection.

SECTION 3. 196.203 (1) of the statutes is amended to read:

196.203 (1) Alternative telecommunications utilities are exempt from all provisions of ch. 201 and this chapter, except as provided in this section and except that an alternative telecommunications utility that is a local government telecommunications utility, as defined in s. 196.204 (5) (ag) 1., is subject to s. 196.204 (5).

SECTION 4g. 196.204 (5) (a) of the statutes is renumbered 196.204 (5) (ar) 1. and amended to read:

196.204 (5) (ar) 1. In addition to the other requirements of this section, each telecommunications service, relevant group of services and basic network function offered or used by a telecommunications utility shall be priced to exceed its total service long-run incremental cost. The commission may waive the applicability of this subdivision to a nongovernmental telecommunications utility's basic local exchange service if the commission determines that a waiver is consistent with the factors under s. 196.03 (6).

SECTION 5. 196.204 (5) (ag) of the statutes is created to read:

196.204 (5) (ag) In this subsection:

1. "Local government telecommunications utility" means a municipality that owns, operates, manages, or controls any plant or equipment, or that wholly owns, operates, manages, or controls any entity that owns, operates, manages, or controls any plant or equipment, used to furnish telecommunications services within the state directly or indirectly to the public.
2. "Nongovernmental telecommunications utility" means a telecommunications utility that is not a local government telecommunications utility.

SECTION 5r. 196.204 (5) (ar) 2. of the statutes is created to read:

196.204 (5) (ar) 2. For purposes of subd. 1., the total service long-run incremental cost of a local government telecommunications utility shall take into account, by imputation or allocation, equivalent charges for all taxes, pole rentals, rights-of-way, licenses, and similar costs that are incurred by nongovernmental telecommunications utilities. This subdivision does not apply to a local government telecommunications utility that is subject to the exemption under s. 66.0422 (3m). This subdivision also does not apply to a telecommunications service, relevant group of services, or basic network function if all of the following conditions apply:

- a. On November 1, 2003, the commission has determined that the local government telecommunications utility is an alternative telecommunications utility under s. 196.203.
- b. A majority of the governing board of the local government telecommunications utility votes to submit the question of supporting the operation of the local government telecommunications utility to the electors in an advisory referendum and a majority of the voters in the local government telecommunications utility voting at the advisory referendum vote to support operation of the local government telecommunications utility.

SECTION 5w. 196.204 (5) (ar) 3. of the statutes is created to read:

196.204 (5) (ar) 3. Subdivision 2. does not apply to a telecommunications service, relevant group of services, or basic network function, that is used to provide broadband service and that is offered by a municipal telecommunications utility, if all of the following apply:

- a. The municipal telecommunications utility offers the telecommunications service, relevant group of services, or basic network function on a nondiscriminatory basis to persons who provide broadband service to end users.
- b. The municipality does not provide to end users the telecommunications service, relevant group of services, or broadband service provided by the basic network function.
- c. The municipal utility determines that, at the time that the municipal utility authorizes the provision of the telecommunications service, relevant group of services, or basic network function, the municipal utility's provision of the service, group of services, or function does not compete with more than one provider of broadband service.

SECTION 6. 196.204 (5) (b) of the statutes is amended to read:

196.204 (5) (b) Unless ordered by the commission, par. (ar) does not apply to basic local exchange service or to business access line and usage service within a local calling area offered by a nongovernmental telecommunications utility with 150,000 or less access lines in use in this state. If par. (ar) does not apply, the nongovernmental telecommunications utility may not reduce its rates for basic local exchange service below the monthly rate under s. 196.215 (7) or total service long-run incremental cost, whichever is lower, and may not reduce its rates for business access line and usage service within a local calling area below total service long-run incremental cost.

SECTION 7. Initial applicability.

(1) The treatment of section 66.0419 (3m) of the statutes first applies to costs incurred on the effective date of this subsection.

SECTION 8. Effective date.

(1) This act takes effect on the first day of the 3rd month beginning after publication.

Proposed State Legislation on Municipal Broadband

Illinois

SB 499 Amendment 1 (Consideration delayed by sponsor)

Amendment 1 to SB 499 attempts to add a restriction on the ability of “political subdivisions” of the state to provide telecommunications service or facilities as part of the statute governing the ICC’s authority to issue a Certificate of Service Authority. The text of the proposed amendment states: “(c) No political subdivision of this State shall provide or offer for sale, either to the public or to a telecommunications provider, a telecommunications service or telecommunications facility used to provide a telecommunications service for which a Certificate of Service Authority is required pursuant to this Section.” Industry supporters of this amendment refer to it as a “place holder” while discussions among stakeholders within the state occur.

Indiana

HB 1148 (Died in committee on 2/16/05)

HB 1148, if enacted, would have prohibited municipalities that were not providing communications service prior to or on June 30, 2005 from providing such services if the service was already being provided by a private sector entity (or if such an entity indicates an intent to provide such service within 9 months time). Prohibited services included any telecommunications service, any cable service, any broadband service, any information service, any application such as Voice over Internet Protocol, or any communications infrastructure or facility. Municipalities that were providing communications services on June 30, 2005, were grandfathered, but would have been restricted from offering new services or entering new geographies. Municipalities would have had to suspend plans to offer the covered services until any pending legal challenge had been fully adjudicated. The proposed bill would have also established procedures for determining private sector provision of (or intention to provide) the covered communications services.

Iowa

HF 861 (Formerly SSB 1136 and HSB 182; Died in committee)

The House version of this bill would have provided a number of restrictions and conditions of the ability of a municipal entity to provide telecommunications services. The bill provided a grandfather provision for telecommunications systems that had received voter approval prior to May 1, 2005. Otherwise, a municipality seeking to provide telecommunications services would have been required to: (i) provide a proposed plan for approval by popular vote, (ii) provide a cost-benefit analysis to the public a minimum of 30 days prior to the vote, (iii) hold a public hearing a minimum of 20 days prior to the vote, and (iv) obtain majority voter approval of the plan prior to issuing public debt, the proceeds of which are intended to fund the project.

The bill failed to pass before the legislative session ended.

Michigan

HB 4600 (Referred to Committee on Energy and Technology on 4/13/2005) and SB 528 (Referred to Committee on Technology and Energy on 5/24/2005)

These bills both endeavor to create a “Communication Act” that has much broader application than merely addressing municipal efforts. However, the “Communication Act” would prohibit a governmental entity from providing a “communications service”, except for its own use. “Communications service” would mean a telecommunications service as defined in 47 USC 153 and by the FCC. Under 47 USC 153, “telecommunications service” means the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used. Also, under the bill “communications provider” does not include a public utility.

Ohio

HB 591 (Introduced in 2004 House Session not yet introduced in new session)

HB 591 would extend cable competition law to the provision by a political subdivision of telecommunications service over a cable system or using telecommunications equipment. In general, the bill outlines restrictions and limitations on provision of these services by a political subdivision, including anti-discrimination provisions, requirements to pay applicable fees, prohibitions against subsidization, and limitations on geographic reach. In addition, the bill provides notice (45 days) and hearing requirements for authorization of a number of items related to the proposed provision of these services by a political subdivision that would require expenditures of public money.

Oregon

HB 2445 (Introduced in 2005 regular session; Hearing held in committee; No further action scheduled at this time)

Generally, HB 2445, as proposed, would impose requirements on local governments with respect to provision of telecommunications service. Telecommunications service means providing to the public cable television access or transmission of voice, video or data information. Before providing a telecommunications service, a local government is required to prepare a 3-year cost-benefit projection, conduct at least one public hearing, and receive elector approval of the method of financing or any capital construction in support of its provision of the service.

Texas

HB 789 & SB 21 (SB 21 passed the House on 7/17/05)

HB 789, subsequently titled SB 21, significantly rewrites Texas telecommunications law. The bill initially contained provisions that would have extended and broadened the existing Texas restrictions on provision of broadband services by public entities. However, the broad

reaching telecom reform bill that was passed in special session by the House on July 17, 2005, no longer contained the initially proposed language extending the state's limitations on municipal broadband deployment.

Virginia

HB 2395 (Died in committee 2/28/05)

As proposed, and passed by the House, the Virginia Wireless Service Authorities Act, authorizes a wireless service authority to offer "qualifying communications services" (including but not limited to high-speed data service and Internet access service, but excluding any cable television or other multi-channel video programming services). The wireless authority, locality or other political subdivision must show in its petition that the qualifying communications services are not readily and generally available in the specified area from three or more non-affiliated companies and are functionally equivalent to the services offered by each of the from three or more non-affiliated companies. Prior to offering such services, the political subdivision must petition the State Corporate Commission for approval, and the Commission (after notice and a hearing in the area) issues a written order approving the petition. This approval by the Commission would not be required for wireless authorities providing wireless high-speed data service or Internet access service throughout a locality prior to July 1, 2004 the Senate attempted to change this grandfather language to read "prior to July 1, 2005" and deleting "throughout a locality"). In addition, the prices charged by the political subdivision were not to be set lower than prices charged by an incumbent for functionally equivalent services.

West Virginia

SB 740 (Substitute bill passed in Senate; To House Industry and Labor, Economic Development and Small Business 3/31/05)

The Electronic Telecommunication Open Infrastructure Act ("ETOPIA") originated in the Senate Committee on Transportation and Infrastructure. A substitute amended bill was passed by the Senate March 28, 2005. The bill addresses the potential deployment of "technology infrastructure" (used in the provision of cable service, telecommunication service, information service, advanced services, broadband service, or Internet Protocol enabled services) by public entities. The substitute bill calls for the creation of a task force to study whether the "best known methods" in private industry and public policy to deploy and utilize technology infrastructure might allow for broader availability of competitive or advanced services. Upon completion of the study, there is to be filed an initial report and proposed legislation to carry out the findings. The report is due no later than November 1, 2005. The original bill provided more flexibility for local governments to pursue municipal broadband projects, using municipal bonds to finance broadband infrastructure development.

About the Authors

Michael J. Balhoff, CFA **Managing Partner**

Michael J. Balhoff, CFA, is managing partner at Balhoff & Rowe, LLC, a group that provides financial-regulatory consulting and advisory services to telecommunications companies and policymakers. Before starting his own firm, Mike Balhoff headed for 16 years the Telecommunications Equity Research Group at Legg Mason and, in the final seven years at Legg, covered equities in the incumbent local exchange carrier industry. Prior to joining Legg Mason in 1989, Mike held posts as a graduate and undergraduate teacher. Mr. Balhoff has a doctorate in Canon Law and four master's degrees, including an M.B.A — concentration finance — from the University of Maryland. He is a CFA charterholder and is a member of the Baltimore Security Analysts Society. Mr. Balhoff has been named on six occasions as a Wall Street Journal All-Star Analyst for his recommendations in the Telecommunications industry. His coverage of telecommunications, and especially rural telecommunications, was named by Institutional Investor as the top telecommunications boutique in the country in 2003. He and his wife, Frances, have three children and live in Maryland.

Robert C. Rowe, Esq. **Senior Partner**

Robert C. Rowe, Esq., is a senior partner at Balhoff & Rowe, LLC. Previously, Mr. Rowe served as the Chairman of the Montana Public Service Commission which was responsible for regulating telecom, electricity, natural gas, water, and some transportation services. Mr. Rowe also served as President of the National Association of Regulatory Utility Commissioners, Chairman of the NARUC Telecommunications Committee, member and state chair of the Federal-State Joint Board on Universal Service, member of the Federal-State Joint Conference on Advanced Services, chairman of the thirteen state Operations Support Systems Collaborative working with Qwest and its competitors to achieve compliance with Section 271 of the 1996 Federal Telecommunications Act, and member of various advisory boards for university-affiliated programs. Rowe led the Montana PSC's participation in a major utility bankruptcy. He has testified frequently before Congress, and has consulted with and trained non-U.S. energy and telecoms regulators.

Collaborators

Bradley P. Williams, Esq.

Bradley P. Williams joined Balhoff & Rowe as a principal in 2005. Previously, Mr. Williams was a member of the Strategic Planning & Business Development group at Lowe's Companies Inc., the Fortune 50 home improvement retailer. Prior to joining Lowe's, Brad worked with Mr. Balhoff in the award-winning Telecommunications Equity Research Group at Legg Mason, focusing on incumbent and rural local exchange carriers. Prior to joining Legg Mason, Brad was a co-founder of eSprocket / Beachfire, a venture-backed company that evolved into one of the pioneers in mediation technology solutions for the financial services sector. Previously, he served as a financial executive for

Iron Road Railways Incorporated, a Washington, D.C.-based holding company that integrated, through acquisitions, a significant regional freight rail network serving northern New England and eastern Canada. Brad began his career as an investment banker in First Union's Capital Markets Group. He has a BA in Economics from the University of North Carolina and a JD from the University of North Carolina School of Law.

Nicole Kaplan

Nicole Kaplan is the founder of Telesto LLC, a consulting and financial advisory firm that has raised more than \$150 million in capital and advised on more than \$200 million in M&A assignments for the company's clients. Prior to founding Telesto, Ms. Kaplan was a Director with Stephens Financial Group, the New York office of Stephens Inc. Before joining Stephens Financial Group, Ms. Kaplan was a Vice President within Communications and Media and an Associate within the Real Estate Investment Banking practices of Lehman Brothers. Ms. Kaplan holds an MBA from Columbia Business School (1997) and a BA from Washington University (1992).

Michael Strand

Mike Strand received a B.A. from Cornell University and a J.D. from the University of Washington School of Law. He has been working in telecommunications since 1993, when his law firm began representing a group of Montana telephone cooperatives in their purchase of 60 rural telephone exchanges from U S WEST. Mike has been managing MITS (Montana Independent Telecommunications Systems) since its creation in 1994 and has served on a number of policy committees. These include the Governor's Blue Ribbon Telecommunications Task Force, 911 Advisory Council, Universal Access Oversight Committee, DOT Right-of-Way Task Force, Y2K Readiness Council, Governor's Montana Integrated Network Committee, Information Technology Board, Montana Cooperative Development Center, and the Homeland Security Advisory Council. Mike has testified numerous times before Congress, the FCC, and before the Federal-State Joint Board on Universal Service.

Michael Sheard

Mike Sheard received his B.S. and M.S. degrees in economics from MSU-Bozeman. He has been working in telecommunications since 1993, when he was hired as an economist for the Montana Public Service Commission. While at the Commission, Mike worked on a wide variety of significant telecommunications and energy issues at both the state and national levels. He also served as the vice-chairman of the telecommunications subcommittee for the National Association of Regulatory Utility Commissioners. Mike has significant experience in planning and analysis for competitive telecommunications ventures, with particular emphasis on financial modeling. He currently manages the day-to-day activities of iConnect Montana, which constructs and operates data centers. These data centers provide neutral collocation and network connectivity services to telecommunications, e-commerce, and Internet-based businesses. He also provides a variety of business management and consulting services, as well as project coordination.

Loy Fraser

Loy Fraser received his B.S.E.E. training from the U. S. Armed Forces Institute, sponsored by the University of Maryland. He has over 36 years of experience in electrical engineering, management, telecommunications, and Internet technology. Loy spent the last seven years building a start up Internet service provider business. Loy is equipped with a variety of skills required to deal with the many complex issues relating to the ever-changing telecommunications industry affecting rural communities.