MEMORANDUM

TO: **The Honorable John N. Kennedy**
              Treasurer of the State of Louisiana

FROM: **Jim Baller**

CC: **Terry Huval**

DATE: **May 10, 2005**

RE: **Response to Heartland Paper**

As you requested, the City of Lafayette, acting through the Lafayette Utilities System (LUS) is providing this response to the Heartland Institute's paper entitled *Municipally Owned Broadband Networks: A Critical Evaluation (Revised Edition)* (October 2004). The paper played an important role in Comcast's and SBC's massive media campaign to defeat a referendum in Batavia, Geneva, and St. Charles, Illinois (the "Tri-Cities") on whether the three cities should develop a public fiber-to-the-home (FTTH) system.[1] Several knowledgeable reviewers from the media and academia have suggested that the paper does not merit serious consideration because Heartland is closely tied to the cable and telephone industries and because the author of the paper, Joseph L. Bast, is not qualified to speak as an expert on the matters at issue.[2] While we share these concerns, we will leave our concerns aside for the purposes of this response and focus solely upon the merits of the paper.

Heartland makes five main arguments against public FTTH systems: (1) there is no need for municipal entry because robust competition exists among private-sector broadband providers, which are currently meeting, and will continue to meet, America's broadband needs; (2) there is no evidence that municipal investments in broadband technology lead to faster economic growth or higher personal incomes; (3) the private sector is more efficient that the public sector; (4) municipal projects typically encounter higher than expected costs and large operating losses borne by taxpayers; and (5) municipal broadband networks are very risky ventures.[3] None of these contentions holds up under analysis.

THE PRIVATE SECTOR CANNOT ALONE
MEET AMERICA'S BROADBAND NEEDS

According to Heartland, the private sector has come a long way in the last few years and is now adequately meeting America's broadband needs. Heartland notes that the cable and

telephone industries have invested, or will invest, billions of dollars to upgrade their broadband facilities, and several new categories of broadband providers are entering the field, including satellite and wireless providers. *Heartland Paper* at 7-8. Heartland attributes these developments to burgeoning consumer demand for new "bandwidth-hungry" products and services, such as on-line movies, web-cams, video conferencing and Voice over Internet Protocol, and to the deregulatory climate that the Federal Communications Commission ("FCC") and the courts have created for the cable and telephone industries. *Id*. at 7-9.

Turning to the data speeds and quality of the alternatives to FTTH, Heartland contends that the telephone industry's Digital Subscriber Line (DSL) service can now reach 3-6 Megabits per second (Mbps); that a newer generation of DSL (ADSL2+) will reach 15 Mbps by 2005; that the cable industry's cable modem service can now deliver 4 Mbps to residences and higher speeds to businesses; and that wireless will be able to provide even faster connections "depending on certain factors." *Id*. at 10. Then, in a highly revealing passage, Heartland observes,

> All of these FTTH alternatives can deliver high-speed Internet services and telephony, which require downstream speeds of about 1.5 Mbps, though some, such as wireless email, have functionality limits that are expected to be addressed in the near future. *The size of the broadband pipeline beyond 1.5 Mbps is important, but only because it is required for consumer cable TV, which is "where the money is" in broadband these days.*

Id. at 10 (emphasis added).

Next, Heartland examines the rates for the various broadband options available in the Tri-Cities. According to Heartland, these prices are "modest and falling," which suggests that competition is the rule in the Tri-Cities, as elsewhere nationwide. *Id*. at 13-14.

Putting it all together, Heartland concludes that the private sector's current offerings are adequate for most residents and businesses and will continue to improve in the future. *Id*. at 14. "Why, then, should the city invest now in an expensive FTTH infrastructure," Heartland asks. Here is its answer:

> One can guess that the purpose is to subsidize a small number of community residents and businesses who want the highest quality broadband services but aren't willing to pay the full price for them. As the discussion below shows, this indeed is the only plausible justification for taking on the expense and risk involved in building a municipally owned broadband network.

LUS's Response

The private sector cannot alone meet America's current and future broadband needs. In this section, we show that all of the assumptions that underlie Heartland's suggestions to the contrary are simply wrong.

Meaningful Competition Does Not Exist In
Most Broadband Markets In the United States

Heartland recognizes that cable and telephone companies dominate the broadband market in America today, but it insists that the market is characterized by "competition and falling prices, not monopoly." *Heartland Paper* at 8, 13. According to Heartland, this is not just true in the Tri-Cities, but "[t]he same is true nationwide and has been true since the beginning of the industry." *Id*. at 13. Heartland's sole support for these assertions are a prediction by the FCC in 2001 that "no group of firms or technology will likely be able to dominate provision of broadband service" and a statement by a senior vice president of Verizon in 2001 quoting this prediction.[4] *Id*. at 14.

The FCC's prediction turned out to be wrong. According to the National Telecommunications and Information Administration (NTIA), the cable and telephone industries together control a whopping *98 percent* of the American broadband market today.[5] On a market-by-market basis, most communities either have no broadband, a single broadband provider, or a "duopoly" between the telephone and cable company. These circumstances cannot be characterized as truly competitive. To the contrary, as the FCC has often observed, "courts have generally condemned mergers that result in duopoly, and have been even more hostile to those that result in monopoly."[6] Conversely, the FCC has found that "introduction of a third competitor into a given market with two existing competitors can result in significant benefits for consumers."[7]

With at most two broadband providers dominating most markets, the telephone and cable industries appear to have settled into to a comfortable state of "co-opetition" in which both industries seek to wring as much profit out of their aging infrastructures as possible, with neither pushing the other very hard on price or quality. In this context, it is impossible to tell whether prices are "modest" or service is good. To judge how well we are doing, or should be doing, we must look for yardsticks outside our borders. As seen below, such comparisons provide little comfort for America.

Heartland Grossly Understates America's
Current and Future Bandwidth Needs

At the time that the FCC made its flawed predictions about the future of competition in broadband markets, the United States ranked 4th in the world in broadband penetration. Soon afterward, America's global ranking in per capita broadband penetration began to decline, and we also began to lose ground to other leading nations, particularly South Korea and Japan, in access to high-bandwidth capacity and cost per unit of bandwidth. In April 2004, President Bush responded by calling for "universal, affordable access for broadband technology by the year 2007 … to make sure we give Americans plenty of technology choices when it comes to purchasing broadband."[8]

By mid-Summer last year, America had sunk to 10th or 11th place, depending on whose study one consulted. This low ranking annoyed President Bush:

America ranks 10th amongst the industrialized world. That's not good enough. We don't like to be ranked 10th in anything. The goal is to be ranked 1st when it comes to per capita use of broadband technology. It's in our nation's interest. It's good for our economy.[9]

America's decline also dismayed FCC Commissioner Michael Copps. In September 2004, Commissioner Copps dissented from the FCC's rosy report to Congress on the status of America's deployment of advanced telecommunications capabilities:

> Recently, we heard an announcement from the very top of our government that our goal is universal broadband access by 2007. But we are not making acceptable progress toward that goal. Yes, there are good stories in these glossy pages. Schools and libraries enjoy broadband access like never before. New technologies offer new promise. Strides are being made in some rural communities. Companies are working hard.

> Still, one glaring fact stands out: the United States is ranked eleventh in the world in broadband penetration! This Report somehow finds that this is acceptable, and that our efforts are resulting in timely deployment. I think our efforts are insufficient and that broadband deployment is insufficient, so I dissent to this Report.

> When consumers in other countries get so much more bang for their broadband buck than we do, something has to change. Nothing puts our challenge into more vivid relief than Chart 18 in this Report. In Japan, for as little as $10, consumers get broadband service at 8,000 kbps. In Korea, consumers get 10,000 kbps for the same price that we pay for 1,500 kbps. Consumers elsewhere get great prices for revolutionary speeds. Why, then, is the FCC still collecting data about 200 kbps service and calling it broadband? Our dated definition of broadband speed should have been dropped by the wayside long ago.

> We also claim that broadband is available to everyone in a zip code if it is offered to only one person in that zip code. This half-hearted effort at analyzing availability should be scrapped. Correcting these approaches for the *next* Report is neither reasonable nor timely.

> We should also study in exhaustive detail the broadband strategies of other countries to discover what works and what applicability such strategies may have for our country. ***We should study why numerous municipalities across America are floating bonds to develop their own broadband networks***.[10]

Since then, America has tumbled further and now ranks 16th place in broadband penetration. The United States has also fallen further behind in access to high-capacity bandwidth and bandwidth cost.[11] As Thomas Bleha noted in a recent article in *Foreign Affairs*,

> When the United States dropped the Internet leadership baton, Japan picked it up. In 2001, Japan was well behind the United States in the broadband race. But thanks to top-level political leadership and ambitious goals, it soon

began to move ahead. By May 2003, a higher percentage of homes in Japan than in the United States had broadband, and Japan had moved well beyond the basic connections still in use in the United States. Today, nearly all Japanese have access to "high-speed" broadband, with an average connection speed 16 times faster than in the United States -- for only about $22 a month. Even faster "ultra-high-speed" broadband, which runs through fiber-optic cable, is scheduled to be available throughout the country for $30 to $40 a month by the end of 2005. And that is to say nothing of Internet access through mobile phones, an area in which Japan is even further ahead of the United States.[12]

In his trenchant new book, *The World is Flat*, Thomas L. Friedman sheds further light on the world that is emerging and America's role in it.

> The dynamic force in [the current stage of globalization] – the thing that gives it its unique character – is the newfound power for individuals to collaborate and compete globally. And the lever that is enabling individuals and groups to go global so easily and so seamlessly is not horsepower, and not hardware, but software – and all sorts of new applications – in conjunction with the creation of a global fiber-optic network that has made us all next-door neighbors. Individuals must, and can now ask, Where do *I* fit into the global competition and opportunities of the day, and how can *I*, on my own, collaborate with others globally. …
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> …
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> [W]e are entering into a phase where we are going to see the digitization, virtualization, and automation of almost everything. The gains in productivity will be staggering for those countries, companies, and individuals who can absorb the new technological tools. And we are entering a phase where more people than ever before in the history of the world are going to have access to these tools – as innovators, as collaborators, and, alas, even as terrorists. You say you want a revolution? Well, the real information revolution is about to begin. …
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> …
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> It is not simply about how governments, business, and people communicate, not just about how organizations interact, but is about the emergence of completely new social, political and business models.
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> The introduction of printing happened over a period of decades and for a long time affected only a small part of the planet. Same with the Industrial Revolution. [The current] flattening process is happening at warp speed and directly or indirectly touching a lot more people on the planet at once. The faster and broader this transition to a new era, the more likely is the potential for disruption, as opposed to an orderly transfer of power from the old winners to the new winners.[13]

In his book, Friedman explores at length the trend of companies worldwide to break down manufacturing, production, service, and other processes and farm out pieces to the places in the world in which they can be done the most cost-effectively. For example, many American firms – from computer companies to accounting firms – have begun to "outsource" tasks to

English-speaking India, the Philippines, and other countries in which bright, well-educated, and highly-motivated young people will gladly perform these tasks for a small fraction of what it would cost the firms to have the work done in the United States.

China's surging economy is particularly threatening to America's traditional way of life. In his new book *China, Inc.: How the Rise of the Next Superpower Challenges America and the World*, Ted C. Fishman notes that China expects some three hundred million people to move from the countryside to major cities over the next 15 years. To accommodate this massive population shift, China will have to build the equivalent of Houston, Texas, *every month*, and its government will have to expand and accelerate its aggressive twenty-year-old program of encouraging importation of as many businesses and jobs from around the world as possible. The following passage from *China, Inc.* captures well the high stakes involved for America and the rest of the world:

> The most daunting thing about China is not that it is doing so well at the low-end manufacturing industries. Americans will be okay losing the furniture business to China. In the grand scheme of things, tables and chairs are small potatoes in the U.S. economy. The Japanese, for their part, have lost the television business. The Italians are losing the fine-silk business. Germans cannot compete in Christmas ornaments. Everyone but the Chinese will lose their textile and clothing factories. More worrisome for America and other countries is the contour of the future, where manufacturing shifts overwhelmingly to China *from all directions*, including the United States. Consumer goods trade on the surface of the world's economy and their movement is easy for consumers to see. The far bigger shift, just now picking up steam, is occurring among the products that manufacturers and marketers trade with each other: the infinite number and variety of components that make up everything else that is made, whether it is the hundreds of parts in a washing machine or computer or the hundreds of thousands of parts in an airplane. And then there are the big products themselves: cars, trucks, planes, ships, switching networks for national phone systems, factories, submarines, satellites, and rockets. China is taking on those industries *too*.[14]

With America's global leadership in manufacturing and commerce at risk, it is critically important for us to move quickly to retool our businesses, institutions and residents to ensure that we will continue to have a place at the head table in the world economy. Accepting Heartland's view that 1.5 Mbps of bandwidth is all that most American residents and businesses will need in the foreseeable future would be dangerous and absurd. The Institute of Electronic and Electrical Engineers, a highly respected impartial professional organization, recently suggested a far more realistic and prudent agenda, stressing the importance of gigabit fiber networks and the necessity of municipal involvement in helping to develop them:

> A new generation of broadband, or "gigabit networks," can mean significant benefits to the United States, but our nation must act promptly to ensure that such an infrastructure is ubiquitous and available to all. If we do not act, the consequence will be to relegate the U.S. telecommunications infrastructure to an inferior competitive position, thus undermining the future of

our country's economy. This issue demands the attention of policymakers as well as the public at large

…

The U.S. economy is based on knowledge — its creation, dissemination and application. A knowledge economy uniquely creates new wealth through invention and innovation. Development depends on research that depends on access to the entire body of existing knowledge and the rapid exchange of new knowledge throughout the economy and the society. Modern research typically retrieves, creates and exchanges massive information files at gigabit rates. After the research, many follow-on functions will benefit from gigabit networks, including computer-aided design; integration of design, manufacturing, sales, and distribution; and collaboration among all through high quality video conferencing.

…

Seamless and rapid communication permits easy access to all knowledge — scientific, medical, economic, commercial, educational, political and recreational. Through ubiquitous gigabit networks the entire U.S. population, urban and rural, could contribute fully to developing our nation's standard of living while overcoming a digital divide that now forecloses productive activity by those without such access.

…

Some regional telephone companies (Verizon and SBC Communications) and large cable system operators (Comcast, Time Warner and Cox) have current plans to deliver what they call "triple-play" (video, voice and data) services to selected markets. However, most of these efforts are not capable of serving as a component of a gigabit infrastructure. (All these firms propose residential access through copper-to-the-home except Verizon, which is working on fiber-to-the-home (FTTH) in the wealthiest counties within its operating area.) Further, none is capable of ubiquitous service to its customers, even in its service area. Rather, as quite appropriate to private sector corporations, each proposes service only "where profitable" (which Qwest, in its service area, has concluded is nowhere). Implicit in these business models is limited deployment that would aggravate, rather than eliminate, the digital divide.

…

The deployment of a proper fiber infrastructure would facilitate and support demand for new consumer electronics such as flat-panel television sets, high-capacity hard disks, and wireless home networking devices. Lack of upgraded networks to carry the traffic would stunt the potential of these products, whereas their combined demand would create new manufacturing and maintenance jobs, both onshore and off. A ubiquitous fiber infrastructure would motivate the creation of more content by motion picture and television studios, performing artists, and World Wide Web sites — all to be indexed by ever more sophisticated search engines. More important, as pilot installations such as the one at Grant County, Wash., have demonstrated, symmetric high-bandwidth capability to the home catalyses a new form of content: end-user created and shared information, extending the need for and the scope of indexing (Grant County Public Utility District, 2004). But U.S. incumbent networks that are asymmetric, low-bandwidth and closed will cripple such content in advance. In

contrast, competitor nations are moving rapidly to the superior symmetric networks and fiber-to-the-home with gigabit capability.

….

...U.S. broadband networks badly lag behind those of many other countries. By one measure, 19 countries have broadband service superior to that of the United States. U.S. maximum public broadband capabilities by DSL and cable modem are in the range of 1 to 5 Mb/s downstream to the user, but generally 500 kb/s or less upstream. By contrast, most South Korean residents have access to 50 to 100 Mb/s, which in many cases is symmetric. South Korea achieved this infrastructure through a government policy supporting deregulation, competition and investment.

That policy jump-started its economy, especially in the information technology sector. Japan, likewise, adopted competitive policies leading currently to widespread 50- to 100-Mb/s symmetric capability and low prices. There is movement already to symmetric optical fiber networks connected to (as opposed to just passing) two million homes, with expanded gigabit availability to homes in 2005.

…

In Korea, penetration is in the neighborhood of 85 to 90 percent to businesses and 70 percent to individuals. In Japan, it is approaching 70 percent across the board. The literature also cites the advanced broadband capabilities of Sweden, Denmark, Taiwan, Hong Kong and Singapore.

The aforementioned countries achieved the high penetrations and high capabilities partly because of high population densities and short copper loops, conditions that are more favorable than those in the United States. ***Nonetheless, these countries have set the bar and we must surmount it, if we are to maintain our current world lead in the creation and use of knowledge goods***.

Among IEEE-USA's specific suggestions of ways for America to stay abreast of the other leading nations are the following:

• Eliminate anticompetitive legal and regulatory challenges to the deployment of end-user owned networks
• Give municipalities that deploy gigabit networks broader access to such programs as the Rural Utility Service and the Universal Service Fund[15]

IEEE-USA's support for municipal involvement in broadband deployment mirrors that of a growing number of high technology companies and their trade associations. As incumbent telephone and cable providers have sought to obtain state legislation to thwart municipal broadband initiatives, the high technology industry has become increasingly vocal in opposing such measures. The following passage from the High Tech Broadband Coalition's policy statement on municipal broadband is typical of such efforts:

In summary, HTBC opposes state laws that erect explicit or de facto barriers to municipal participation. Municipalities must be allowed to pursue

broadband network solutions, and private sector firms must not be foreclosed from choosing to invest in and partner with municipalities. A framework of open processes and reasonable competitive neutrality allows all stakeholders to be heard. Reasonable examples are already being demonstrated in the marketplace voluntarily and without statutory mandates. We believe such a framework can encourage public-private partnerships that advance the goal of making affordable and high quality broadband available to all Americans.[16]

How Much Bandwidth Is Enough?

How much bandwidth does America realistically need to satisfy current and predictable future needs? In its most recent report to Congress on the status of deployment of advanced telecommunications networks, the FCC stated:

> Providers assert that within the next several years, consumers can expect connections providing symmetrical service at 10 to 20 Mbps. Within five to ten years, these connection speeds should increase to 100 Mbps, and some providers predict that premium services may provide consumers with 1 gigabit per second (Gbps) access within a decade. Even higher-speed connections may be deployed to businesses, with some providers predicting the availability of 10 Gbps business services.[17]

Other industry experts have also predicted that, within the next few years, homes will need vastly more bandwidth capacity than is currently available. For example, a recent study by Jupiter Research concluded that, by 2009, average households will need 57-72 Mb/s of bandwidth and that "tech savvy" households will consume nearly 100 Mb/s.[18] A significant amount of this bandwidth will support in-home wireless applications, as well as high definition television and other bandwidth-rich applications.

Similarly, another recent study by Technology Futures, Inc., which was funded and supported by the Bells, concluded that:

> In the 2006 timeframe, a shift to much higher data rates in the range of 24 Mb/s to 100 Mb/s is likely to begin. So far, only a few places have access at these rates, notably Japan.

> Leading broadband countries are a full generation ahead of North America. Japan and Korea are already rolling out the subsequent generation of services operating at 20 Mb/s and above, and have plans to complete the transition by 2010."[19]

These trends underscore the significance of fiber systems to America's future, including its wireless future. A leading industry journal succinctly summarized the Jupiter Research report this way: "***The forecast provides justification for such technologies as FTTx, which can deliver that bandwidth to the home***…."[20]

The Private Sector Is Not Preparing Adequately to
Meet America's Future Broadband Requirements

With the leading nations moving rapidly toward economies based on access to cheap ultra-high bandwidth, the United States can ill afford to be left behind. Unfortunately, that could well happen under the policies and practices of most of America's major telephone and cable companies.

Specifically, Qwest has not announced any plans to address the high-bandwidth needs of its customers, and BellSouth and SBC have decided to do so through ADSL2+ technology. In disclosures to Wall Street, both BellSouth and SBC have acknowledged that their upgrades will be phased in over a number of years to new developments and possibly to selected areas of high revenue potential.[21]

But even assuming that BellSouth and SBC were going to deploy ADSL2+ everywhere in their service areas immediately, their deployment plans would still fall short. The reason is that, even under ideal conditions, ADSL2+ has maximum bandwidth capacity of only 21-24 Mbps downstream and 1-3 Mbps upstream. That is below the range of 24-100 Mbps that the Bells' own supported research, by Technology Futures, Inc., predicted that U.S. households would begin to reach by 2006, and it is far below the bandwidth levels that even average homes, let alone "tech-savvy" homes, will need by 2009.

Verizon, in effect validating what LUS and other municipal advocates of FTTH have been saying for years, has embarked on a plan to deploy FTTH as rapidly as possible. By the end of 2005, Verizon hopes to have passed at least 2 million homes.[22] Even if Verizon greatly exceeded that target, however, it would still be addressing the bandwidth requirements of only a small fraction of the nearly 40,000 cities, towns and other communities that the U.S. Census Bureau recognizes as "places."

Cable companies, currently offering bandwidth in the single-digit Mbps range, claim that they have no plans to boost their bandwidth to any significant extent. At most, they may match the speeds offered by the telephone companies.[23]

At the turn of the last century, when private electric companies concentrated on electrifying their most lucrative markets, thousands of communities that would otherwise have been left behind stepped forward to form their own electric utilities. As a result, both the communities involved and America as a whole benefited greatly. The time has come for this history to repeat itself in the communications area.

Lafayette's FTTH System Will Meet the City's
Current and Future Bandwidth Needs

Lafayette's proposed FTTH system will meet the current and future bandwidth needs of the City's businesses, institutions, and residents for years to come. It will also keep Lafayette competitive with other communities in America and elsewhere that are building FTTH systems to give themselves a chance to play a vital role in the emerging world economy.

Lafayette does not view providing cable television service as an end in of itself, even though, as Heartland puts it that may be "where the money is in broadband these days." *Heartland Paper* at 11. Rather, Lafayette wants to develop its FTTH system primarily to promote economic development, educational and occupational opportunity, telework and telemedicine, digital equity, public safety, homeland security, environmental protection, cultural enrichment, and all of the other benefits that contribute to a high quality of life. Providing cable television service is merely the toll that Lafayette must pay to be able to afford its system.

MUNICIPAL BROADBAND INITIATIVES ARE CRUCIAL TO THE ECONOMIC DEVELOPMENT OF MANY COMMUNITIES

Heartland's Position

Heartland maintains that municipalities should not pursue municipal broadband projects for the purpose of promoting economic development, because there is no evidence of a link between broadband and economic development. *Heartland Paper* at 15. According to Heartland, the suggestion that such a link exists is simply a self-serving fabrication concocted by consultants to municipalities to serve their own interests. Such advice, Heartland says, "should be deeply discounted." *Id.* In addition, Heartland cites a handful of reports supposedly showing that "subsidies to corporations – whether in the form of cheap access to land, sewers, or broadband – are an unreliable and often counterproductive strategy for economic development." *Id.* at 16. Heartland also quotes a paper by a former professor advising the City of Chicago that efforts to attract high tech companies to inner-city areas would probably fail. *Id.* Heartland also takes a swipe at advocates of the Tri-City project:

> Because the vast majority of residents of most communities are now well-served by private broadband providers, a municipal broadband network would benefit only a small number of high-end users of broadband services. It is hardly surprising that these potential beneficiaries would organize and lobby for such a subsidy. But this is no reason why voters and taxpayers should support their scheme. The expected private benefits of a few users do not justify the cost of connecting every business and household in the community with expensive fiber-optic lines.

Heartland Paper at 16.

LUS's Response

The precise relationship between municipal broadband and economic development has not been established, as that would require numerous comprehensive studies covering a variety of situations over lengthy periods of time. Certainly the studies that Heartland cites shed little, if any, light on this issue, as they do not deal directly with municipal broadband and focus upon targeted, single-company tax and other incentives rather than community-wide infrastructure projects. This distinction is an important one, as there is a substantial body of literature confirming that municipal investment in infrastructure projects does, indeed, contribute significantly to economic development.[24]

Whether or not definitive, there is a massive amount of information linking municipal broadband investments to business attraction and retention, high salaries, and growth of the local economy. This includes include two recent studies and hundreds of first-hand experiences of municipal officials to whom companies have said that the presence or absence of an advanced communications network was a significant factor in their company's decision to move to or stay in a community.

In one of these studies, Applied Economic Studies (AES) last month performed a rigorous econometric comparison of the economic development of Lake County, Florida, and the economic development of several comparable counties in Florida, in the period after Lake County began to offer municipal broadband service widely throughout the County. AES corrected for population growth and other variables that could distort the data. AES concluded,

> Our findings are consistent with other analyses postulating that broadband infrastructure can be a significant contributor to economic growth. The Bureau of Economic Advisors (along with others) has stated that broadband infrastructure confers positive, public benefits on the economy, and our results provide support for presence of large external benefits from communications networks.[25]

In the other study, Doris Kelley, an economic development specialist, compared the experience of two adjoining cities in Iowa – Cedar Falls and Waterloo – that were nearly identical in most respects. The only major difference between them was that Cedar Falls built a municipal broadband system in the late 1990s, and Waterloo, did not. As it happens, when the Cedar Falls system went on stream, the economy of Cedar Falls boomed, and the economy of Waterloo stagnated.[26] To be sure, as Heartland has suggested elsewhere, an economist would need answers to many additional questions before concluding that the municipal broadband network was the sole reason for Cedar Falls's economic success compared to Waterloo's.[27] Notably, however, the businesses and mayor of Waterloo did not need an economist to tell them what was happening in their City. As Ms. Kelley noted in her paper,

> An article in the March 11, 2002 *Waterloo-Cedar Falls Courier* reported, "The vast majority of new industries moving to the Cedar Valley are locating in the Cedar Falls Industrial Park, which has caused some discontent from local business leaders and residents wondering why Waterloo is falling short. While officials note any jobs created in Waterloo-Cedar Falls benefit the entire area, Waterloo needs industrial development to boost its tax base. An earlier article published in the same newspaper on August 21, 2001 quoted Waterloo Mayor John Rooff. *"Fiber optics is the key to Waterloo's future growth," Rooff said. "In order for Waterloo with its businesses to move into the 21st century, we need fiber optic capability...I believe it has hurt us economically not be able to provide fiber optics to businesses locating in our city."*[28]

Following are seven examples from among the dozens that we could cite showing a direct connection between municipal broadband and economic development. The connection can be either positive or negative, depending on whether a municipality has an advanced communications network:

Tacoma, WA As reported in *Site Selection Online*, "Connectivity is the key to Tacoma's recent business growth. More than 100 high-tech companies have set up shop in the South Puget Sound city in Washington since the launch of the city-owned and operated Click! Network."[29] In an extensive interview in *Business Facilities Location Advisor*, the president of one of these businesses confirms that the decisive factor in the company's decision to locate in Tacoma was Click!'s ability to provide the fiber that the company required.[30]

Bristol, VA In Bristol, VA, a city of 17,200 on the border of Virginia and Tennessee, the City's FTTH system is the "main attraction" for economic development. For example, Cross Stone Products, a maker of decorative metal containers, moved its 30-employee operation to the Virginia side of Bristol two years ago in part to get access to the high-speed network. "When we made that decision we were involved quite heavily with some major retailers in the United States," says Larry Bays, company controller. According to Jim Kelley, VP of Operations for Bristol's OptiNet system, this is a common occurrence. "Businesses are always looking for high-speed, high capacity Internet access at competitive prices."[31]

The Dalles, OR The Dalles, a city of 11,873 in the picturesque Columbia River Gorge, operates a 17-mile municipal fiber optic network. In 2004, The Dalles received $200,000 in federal economic development and infrastructure funds to complete the network and connect it to NOANet (Northwest Open Access Network), a cooperative that uses fiber owned by the Bonneville Power Administration to operate a statewide telecommunications network linking schools, hospitals, government agencies and businesses. The Dalles project was viewed as "laying the technical foundation needed to promote economic growth in Wasco County."[32] As a direct result of The Dalles's municipal networking capabilities, Google in 2005 decided to purchase an industrial site in The Dalles for $1.87 million, to house high-tech equipment that would be connected to the rest of the company's network. In doing so, Google "is expected to bring to the Columbia River Gorge community between 50 and 100 jobs paying an average of $60,000 annually in wages and benefits, twice the county's average income."[33]

Danville, VA Unlike The Dalles, Danville, VA, did not have a fiber network when a major company came looking for a site. As a result, AOL struck Danville off its list of sites for a new data center and located the center in Prince William County, VA. That opened the eyes of Danville's city officials and spurred them to develop a fiber project in the City.[34] Danville's experience is particularly noteworthy because business location specialists now treat access to advanced telecommunications network as an essential, but not sufficient criterion in evaluating potential sites.[35] In other words, having an advanced telecommunications network will not guarantee that a business will move to or stay in a community, but not having such a system will for many communities guarantee that they are passed by.

Scottsburg, IN Scottsburg, IN, a city of 6000 residents 29 miles north of Louisville, KY, could not get broadband from Verizon. When two important businesses – an automotive repair shop and a medical transcription service – threatened to leave unless they could obtain broadband connectivity, the municipal electric utility stepped forward to provide wireless broadband throughout the town. The town retained the two businesses and is now also saving thousands of dollars a month in telecommunications costs.[36]

Auburn, IN Auburn's story is similar to Scottsburg's, except that Auburn used fiber rather than wireless to achieve its economic development goal. Cooper-Standard Automotive was going to move 75 high-tech jobs out of this small Indiana town because no private company was willing to provide broadband in the town. The mayor and municipal electric utility offered to furnish Cooper "industrial strength connectivity" through fiber optics. Cooper accepted and stayed.[37]

Northeast FL As reported in the Jacksonville *Business Journal*, rural areas in Northeast Florida are suffering from lack of broadband access. "For economic development officials in Nassau, Clay and St. Johns counties, the lack of broadband service threatens to close off efforts to bring in the kinds of companies that create desirable upscale jobs. Nassau County has already lost some high-tech prospects as a result of broadband's narrow reach. 'It's become one of the most important infrastructure needs for companies of any kind, as much so for existing companies as those you're trying to attract,' said Ken Willette, executive director of the Nassau County Economic Development Board. .. . 'If we're not aggressive with it, our fear as a small county is that we'll fall behind,' Willette said. 'That would be devastating to our existing business base and future growth.'"

In the meanwhile, "BellSouth . . . uses a model that takes into account 52 factors, including such variables as technology purchases and the number of children in the area, to decide if it will spend money to provide broadband access. 'We go where the fish are biting,' said Rich Wonders, senior director of broadband marketing at BellSouth. 'It's about getting the best return on our capital.'"[38]

Heartland's claim that there is no connection between broadband and economic development is also counterintuitive and inconsistent with common experience. The burden should therefore be on Heartland to prove the absence of any such connection. Nothing that it has offered comes near to doing so.

THE PRIVATE SECTOR IS NOT MORE
EFFICIENT THAN MUNICIPAL UTILITIES

Heartland's Position

Heartland ridicules the notion that municipalities can be as efficient, or even more efficient, than the private sector. It cites several writings of conservative economists on this

issue and then mounts a spirited attack on a suggestion by a Tri-City official that municipal utilities that build facilities to provide Internet and data service should consider using the same facilities to provide cable and telephone services as well, taking advantage of economies of scale:

> By this reasoning, towns should begin manufacturing cars and trucks because they own roads, or perhaps own and operate restaurants and bars because they own sidewalks. This "comparative advantage" comes only from denying equal access to these public goods to private competitors who should be assumed to be better equipped to manufacture a good or provide a service than is the municipality. Giving government-owned utilities tax and regulatory advantages distorts the marketplace and distorts private companies from investing in the region. As Jeffrey Eisenach, in a 2001 report on government-owned telecommunications utilities observes:
>
> > As a result of this basket of subsidies and other advantages, most of them hidden from view or difficult or impossible to quantify the one thing public utilities never do is provide an accurate gauge of the true costs of providing any service. Instead, because these hidden subsidies permit public utilities to undercut the prices charged by private competitors, they distort the marketplace, deter entry by real competitors, and thus prevent the marketplace from setting cost-based prices.[39]

LUS's Position

Heartland concedes that answers to questions about the whether public entities are efficient "are often motivated by ideology (conservatives tend to say no, liberals tend to say yes) or based on a few favorite anecdotes." *Heartland Paper* at 17. It then proceeds to do just that, arguing the conservative position without even acknowledging, much less responding to, the arguments on the other side.

First, Heartland conspicuously ignores the most comprehensive and statistically sophisticated study ever performed to compare the comparative efficiencies and explain the price differences between public and private utilities -- John Kwoka's book *Power Structure.*[40] Using data for 396 relatively large public power systems and 147 large private utilities, Kwoka's results show that public power systems charge significantly lower rates than private utilities primarily because they are more efficient and prefer to pass the benefits of this through to the community. His analysis adjusted for cost of capital, taxes, types of generation, region of the country and other factors that are likely to have a significant effect on costs.

Second, as economist John Kelly demonstrated in October 2001,[41] the Eisenach paper on which Heartland relies is seriously flawed in numerous respects. Although Heartland was presumably aware of Kelly's critique, if offered no response. LUS submits that Mr. Kelly's arguments are compelling and dispositive of the arguments Eisenach's and Heartland's arguments.

Third, the Heartland paper was issued in October 2004. Since then, several more individuals and organizations have refuted Heartland's main arguments. AES has demonstrated that municipal broadband investments attract, rather than crowd out, entry of private firms and private investment.[42] The Florida Municipal Electric Association,[43] the Media Access Project,[44] and various others, including the undersigned[45] have also shown that the tax, financing, right-of-way and other advantages that municipalities supposedly have either do not exist in most cases or are far outweighed by the vast benefits that the giant cable and telecommunications companies have.

THE CHARGE THAT MUNICIPAL BROADBAND PROJECTS HAVE LARGELY FAILED IS UNTRUE

Heartland's Position

With offensive condescension, Heartland tells us that "[o]ffering telephone, cable, and Internet services is far more complex and difficult that collecting trash or cleaning parks." *Heartland Paper* at 19. As a result, Heartland surmises, very few towns and municipalities have attempted to meet this challenge, and those that have tried have largely failed. Heartland then returns to the Eisenach paper, this time to quote a passage that summarizes a study that Ronald Rizzuto and Michael Wirth of the University of Denver conducted in 1998 with regard to four small cable systems.

> The study concluded that the first three systems "have been poor investments from a pure business perspective" and the fourth (Cedar Falls), though too new for a conclusive evaluation, "has a large financial deficit to overcome in order to become profitable." Indeed, the study concluded that the three systems that had been in operation long enough to permit a conclusion had cumulative losses of $6.6 million and that "the Glasgow and Paragould investments will never reach payback, and it will take Negaunee 23 years to pay back its initial investment.[46]

Heartland then sets forth a number of municipal case histories, borrowed from other opponents of municipal broadband, and concludes: "The point should be clear: Experiences in other cities reveal the municipal broadband utilities often fail." Heartland Paper at 23.

LUS's Response

Heartland has apparently done no original research or fact-checking but has simply taken at face value the canards about supposed municipal failures that other opponents of municipal broadband have perpetrated. None of the claims that Heartland echoes is correct.

For one thing, opponents of municipal broadband universally rely upon the Rizzuto and Worth study of 1998, but that study does not actually say what Eisenach and others apparently think it does. As shown below, it also contains a number of fundamental analytical errors.

In developing their report, Rizzuto and Wirth recognized that their research had some serious limitations, and they candidly noted these limitations on the face of the report: (1) the study only analyzed revenues from cable television service and did not consider the additional revenues that the municipalities could derive from using the same facilities to support multiple

services, including broadband, telecommunications, security, and other services; (2) the financial models used in the study were designed to evaluate the performance of private-sector providers and did not reflect the way that public projects are ordinarily evaluated; and (3) the municipal systems under study were in their early stages, when costs were high and revenues low, which made predicting the future hazardous.

Given these serious shortcomings, Rizzuto and Wirth should not have sought to predict or even comment on the sustainability of the projects under study. Yet, they plunged ahead anyway and condemned not only the four projects at issue, but also municipal communications projects generally.

Furthermore, as John Kelly has recently demonstrated, Rizzuto and Wirth used an inappropriate concept of cash flow and defined that term in a manner that conflicts with conventional definitions.[47] Correction of these errors results in a swing from negative cash flow of $15 million for the years in issue to positive cash flow of more than $333,000, with net economic benefits for the four communities totaling more than $10 million. In addition, with this change, net cash flow estimates show that the four systems covered all operating expenses in 21 of the 27 years of full operation, with net cash flow falling short primarily in the earliest years of the four projects.[48]

With regard to Heartland's examples of supposed municipal "failures," the fact is that Heartland is simply wrong as to every single one. Over the last few months, the targets of these misrepresentations and other knowledgeable individuals have answered these and similar charges in detail. We are attaching copies of these responses, and they are also available on our website at www.baller.com/comm_broadband.html.

MUNICIPAL BROADBAND IS NOT UNDULY RISKY

Heartland's Position

Last, Heartland delineates the factors that it believes make municipal broadband projects highly risky. These factors include changing costs of construction, delays in construction time, legal restrictions on cross-subsidies, shortfalls in targeted penetration rates, difficulties in obtaining access to programming and other content, etc.

LUS's Response

Operating a municipal broadband system is not "child's play," but neither is it significantly more challenging that the activities in which municipal utilities have engaged for over a century. More than 100 municipal utilities have become successful providers of communications services, and some have been doing this for nearly fifty years. Furthermore, if a municipal provider needs assistance, it can readily obtain it from national and local organizations that serve the relevant industry, consultants, vendors or strategic partners.

At the same time, municipal communications projects receive intensive public scrutiny, and each fact, assumption, cost and revenue projection, technological choice, and other pertinent detail is carefully weighed and debated, with all major stakeholders involved at every stage. If a municipality decides to go forward with a project after such an extensive and open process, it

will have compelling reasons for doing so – reasons that ensure that the project will have a high probability of success. As a result, municipal communications projects are likely to be considerably LESS risky than comparable private sector projects in which decisions are made behind closed doors.

CONCLUSION

LUS submits that Heartland has said anything that should concern the Commission about authorizing LUS to go forward with the bond process. LUS therefore urges the Commission to grant LUS the authority it requires.

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[1] D. Case, "Giga Fight: Who wouldn't want cheap, public Internet access? Comcast, for one." http://lafayetteprofiber.com/imagesNRef/Docs/GigaFight.html. Comcast and SBC spent more than $300,000 in opposing the FTTH system, outspending the advocates of the system by a factor of 70 to 1. B. Schory, "Comcast, SBC spent $300,000 to fight local broadband move," *Kane County Chronicle*, http://www.kcchronicle.com/SportsSection/310254315460507.php

[2] See, e.g., Glenn Fleischman, "Sock Puppets of Industry," *WiFi Net News*, http://wifinetnews.com/archives/004765.html; Karl Bode, "Muni Broadband 'Socialism,'" *Broadband Reports*, http://www.broadbandreports.com/shownews/61160; Prof. James Carlini, "Did Chicken Little Kill Tri-Cities Broadband Referendum in Illinois?" *ePrairie*, http://www.eprairie.com/printer/article.asp?newsletterID=9280.

[3] Heartland also asserted that the funding mechanism at issue in the Tri-Cities – "Certificates of Participation" – pose various problems and risks of their own. *Heartland Report* at 26-27. These assertions are irrelevant here, as LUS is not pursuing that form of funding.

[4] Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Establish Rules and Policies for Local Multipoint Distribution Service and Fixed Satellite Services, 15 FCC Rcd 11,857, at ¶ 19 (2001); Testimony of Thomas Tauke, Senior Vice President, Verizon Communications, on the Internet Freedom and Broadband Deployment Act of 2001 before the House Energy and Commerce Committee, April 25, 2001. http://newscenter.verizon.com/policy/broadband/.

[5] NTIA, "A Nation Online" at 7 (September 2004), http://www.ntia.doc.gov/reports/anol/.

[6] *EchoStar-DirecTV Hearing Designation Order*, 17 FCC Rcd 20559, ¶¶ 99-103; 2002 FCC LEXIS 5602 (rel October 18, 2002), *citing, e.g.*, *FTC v. H.J. Heinz Co.*, 246 F.3d 708, 717 (D.C. Cir. 2001) and *FTC v. Staples*, 970 F. Supp. 1066, 1081 (D.D.C. 1997); *see also In the Matter of Amendment of the Commission's Space Station Licensing Rules and Policies; Mitigation of Orbital Debris*, 8 FCC Rcd 10760, ¶¶ 63-64; 2003 FCC LEXIS 2858 (rel May 19, 2003).

[7] *In the Matter of Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations by Time Warner Inc. and America Online, Inc., Transferors, to AOL Time Warner Inc., Transferee; Petition of AOL Time Warner Inc. for Relief From*

the Condition Restricting Streaming Video AIHS, 18 FCC Rcd 16835, ¶ 12 n.30; 2003 FCC LEXIS 4700 (rel. August 20, 2003.

[8] White House, "A New Generation of American Innovation" (April 2004), http://www.whitehouse.gov/infocus/technology/economic_policy200404/innovation.pdf.

[9] President Bush, "High Tech Improving Economy, Health Care, Education" (June 24, 2004), http://www.whitehouse.gov/news/releases/2004/06/20040624-7.html.

[10] Michael Copps, Dissenting Opinion, *Fourth Report to Congress on the Availability of Advanced Telecommunications Capabilities in the United States* (emphasis added), http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-208A1.pdf.

[11] "ITU [International Telecommunications Union] has just released its new statistics on global broadband penetration per 100 inhabitants as of 1 January 2005. Korea and Hong Kong, China have kept the top rankings they received in 2004. The Netherlands makes an impressive move from 9th in ranking in 2004 to 3rd this year. Denmark also moves up two slots to 4th. Canada drops to 5th from 3rd in 2004. Switzerland moves from 10th in 2004 to 6th this year. Israel moves to 12th this year. The USA drops from 13th in 2004 to 16th in 2005. France has moved up fast in the rankings and is now just behind the USA followed by the UK at 15th." http://www.itu.int/osg/spu/newslog/ITUs+New+Broadband+Statistics+For+1+January+2005.aspx.

[12] T. Bleha, "Down to the Wire," *Foreign Affairs* (May/June 2005), http://www.foreignaffairsiggnaffairs.org/20050501faessay84311/thomas-bleha/down-to-the-wire.html?mode=print; see also

[13] T. Friedman, *The World is Flat: A Brief History of the Twenty-first Century* at 10-11, 45-46 (Farrer, Strauss and Giroux – New York – 2005)

[14] T. Fishman, *China, Inc.: How the Rise of the Next Superpower Challenges America and the World* at 14-15 (Scribner – New York et al. – 2005).

[15] IEEE-USA, *Providing Ubiquitous Gigabit Networks in the United States*, http://www.ieeeusa.org/volunteers/committees/ccip/docs/Gigabit-WP.pdf.

[16] Numerous samples of industry statements supporting municipal broadband initiatives are collected at http://www.baller.com/comm_broadband.html.

[17] FCC, *Fourth Report to Congress on the Availability of Advanced Telecommunications Capabilities in the United States* at 45, http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-208A1.pdf.

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