



An Open Letter to President-Elect Barack Obama: To Make America Competitive, Build Fiber Optic Networks

Mr. President-Elect:

In this moment of great crisis and great opportunity, you have asked all Americans for ideas about where you should lead the country. Here is our recommendation: **Build fiber optic networks to connect every American home and business to the Internet.**

America cannot maintain its competitive edge in the world without fiber-based broadband, because bandwidth is the currency of the new economy.

At home, fiber is our path to a sustainable and inclusive society. It offers citizens access to health and educational resources, to entrepreneurial and job opportunities, and to participation in government, regardless of where they live. It erases distance without requiring travel. It is the key to modernizing the electric grid – the reliable and energy-efficient “smart” grid you’ve called for. It enables new ways of living, working and playing.

The fiber we put into the ground today will continue to meet our telecommunications needs for decades to come. Its capacity is virtually limitless, and its

lifetime is likely half a century or more. As the interstate highway system has done, fiber will create and diffuse wealth in ways we can barely imagine.

Fiber is “true broadband.” We support your call for America to once again lead the world in broadband penetration and Internet access, and your pledge to bring “true broadband” to every community in America.

Your proposal to define broadband at speeds demanded by 21st-century business and communications is on target. But what speeds will 21st-century business and communications require? In the short term, we think the answer is 100 Mbps of symmetrical bandwidth – a definition that other nations are using, and some are already achieving or exceeding. In the long term, we expect bandwidth needs to continue growing exponentially beyond that.

Our old copper infrastructure can’t provide these speeds, nor can it provide the reliability of fiber. Neither can wireless. To deliver 100 Mbps now and higher speeds in the future, we need to bring

fiber to the premises or the building. (Wireless broadband, needed for mobility, both complements fiber and relies on it to carry traffic back to the Internet.)

Today fiber optic connections are available to about 12 percent of American households, and probably to an equivalent proportion of businesses. We have a long way to go. Public and private investment on the order of \$150 billion is required to complete the job – but even the near-term return on that investment is many times greater.

Fiber will make our economy competitive. Countries around the world are deploying fast, reliable fiber-based networks, and many are far ahead of the US in terms of both broadband penetration and broadband speeds. Today, American companies need true broadband in order to have access to world markets. And we’re not just talking about the “information” economy. We’re also talking about Vermonters selling local cheese off a small Web site, or communities marketing their tourist attractions.

But the Internet isn't just a way to communicate with trading partners. Increasingly, it is the locus of computing power and advanced applications – this is the so-called “cloud computing” revolution. American businesses need fiber connections to keep up with the way the rest of the world does business. They cannot compete in a global economy unless they can use (at comparable, competitive prices) the productivity and collaboration tools that are standard in Europe and Asia. Government agencies, too, should be able to access these same tools to serve citizens better.

Also, American software companies need domestic markets in order to develop advanced broadband applications – an important growth sector for the economy. If the markets for true broadband are largely in Europe and Asia, European and Asian software companies will have the advantage in developing new broadband products and services. That already seems to be happening.

Fiber will revitalize local communities. Too many US communities have been stranded by changing economic tides. Rust-belt cities were devastated by the loss of manufacturing; rural areas have been depopulated by the shift to agribusiness. Fiber networks can change all this – and already are, in a handful of pioneering towns.

Connecting homes and businesses with fiber can bring back jobs that have been sent offshore. Back-office functions can be outsourced to companies in low-cost regions of the US, rather than low-cost regions of the world. Home-based employees in fiber-connected communities can – and do – compete nationally as virtual office workers, knowledge workers, and customer-service and customer-support reps. Small-business owners in isolated communities can grow their businesses by selling products and services nationwide, or even worldwide, over the Internet.

Fiber will improve access to health and education. We need to bring about dramatic improvements in health and educational services while reducing costs. Fiber networks, where they have been installed, are already

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accomplishing this. To give just a few examples: High-quality videoconferencing and online video give every student access to specialized teachers and every patient access to specialized doctors. Remote diagnostic devices give faster, more accurate roadmaps for treatment. Home medical monitoring devices reduce the need for institutionalization. Remote instrumentation gives high school students access to specialized scientific data in real time. Music and arts education, long neglected by our schools, becomes possible again with Web-based study and virtual museum tours and concerts.

Fiber will engage citizens in government. Your own use of social networking to inspire, engage and empower millions in your campaign relied heavily on broadband access. Fiber networks can multiply this effect. Again, just a few examples: High-quality videoconferencing enables more citizens to participate in public meetings and debates, and to organize spontaneously in groups defined by interest and commitment rather than geography. Access to large Web-based databases and analytic software will give more citizens the tools they need to analyze public issues and model solutions to them, increasing the likelihood of solving some of our most pressing problems.

Fiber will reduce America's carbon footprint. As the CEO of a Kentucky electric utility says, “Broadband *is* electric power plant.” Fiber to the electric meter lets utilities implement “Smart Grid” demand response programs that yield enormous energy savings and shave peak loads, reducing the need for investment in generating plants. Fiber enables “smart building” controls for multifamily or commercial building owners. Residents of fiber-connected homes telecommute much more than those with lower-quality broadband (or, obviously, those without broadband). In the business enterprise,

high-quality videoconferencing reduces business travel significantly.

Fiber may even help reverse the energy-wasteful urban and suburban planning that has plagued us since the 1940s. Today's “new-urbanist” communities – nearly all fiber-connected – are designed to let residents walk to schools, shopping, entertainment and social engagements, and telecommute to work from their homes or neighborhood centers.

Getting from here to there. As much as 10 percent of the needed \$150 billion is already committed to be spent, and will be spent absent a complete economic collapse. Verizon alone plans to make fiber available to 6 million more homes in the next two years. But the remaining 90 percent could take decades unless building fiber networks is made a national priority. Worse, innovation in fiber-to-the-home technology may be lost as firms exit this business – many are small and cannot remain solvent during a prolonged downturn.

Achieving this goal is politically challenging, and may be even more complex than building the interstate highway system or transcontinental railroad. But it is an achievable goal, and the first step is to commit to getting it done. We expect that it will require a combination of loans, grants and other incentives, depending on overall economic conditions and specific situations in local markets. Fortunately, the mechanisms for doing this have already been tested on a less ambitious scale.

We offer these guidelines for your consideration:

- USDA currently administers loans and grants for rural broadband, distance learning and telemedicine. Possible changes to these programs might include not only increasing their funding but also giving stronger preference to “true broadband” projects; permitting longer payback

periods while still helping borrowers maintain financial soundness; and expanding (or cloning) the program to cover underserved urban communities.

- You have called for a major investment in broadband as a key component of fiscal-stimulus public works programs. We agree wholeheartedly – with the caveat that funding go to fiber optic networks, not to less-robust copper or wireless broadband networks that will be obsolete from the day they are built.

Many telecom providers have worthwhile projects already on the drawing boards waiting for financing, so spending could begin very quickly. And because network builds are typically executed in phases, government lenders could easily “phase out” and let private lenders step in once the economy recovers.

- We must encourage organizations other than traditional telecom providers to deploy fiber. Two examples:

- Municipalities have been bold and innovative deployers of fiber optic networks – some for their own use, others for their residents and businesses – and, despite a few well-publicized failures, most have succeeded. Yet in many states they are legally prohibited or limited in doing this, or delayed by frivolous lawsuits. Their authority to build telecom networks needs to be clarified.
- Electric utilities should also be given incentives to build out fiber to the meter in order to implement Smart Grid projects.
- Municipal networks must be allowed to connect, reliably and at a fair price, to national networks. That will require regulatory changes and better information-gathering by the Federal Communications Commission. Fiber trunk lines often pass close to communities, and the communities do not always know where they are.

- Finally, the Universal Service Fund today is focused on making voice service available to all. As you have already recommended, it must be refocused to fund universal data service. Indeed, voice travels as data on the nation’s networks even now. The distinction is artificial as a matter of technology as well as of public policy.

Our recommendations require changes in regulation and expansion of access to capital. Notice that by “incentives,” we do not mean “automatic tax breaks.” We believe that all Americans, and all American enterprises, should pay their fair share. Enterprises that have already invested in fiber may find that they will lose a small amount of competitive advantage. But universal fiber broadband will vastly increase traffic, thus increasing revenue for all carriers.

Our proposals are good for them, and great for America. **BBP**

—The Editors
Broadband Properties

Broadband Champions Voice Their Recommendations

We also asked a range of broadband experts to recommend policies for the new administration. Eight responses follow; despite their different roles and viewpoints, all are eloquent in their support for raising America’s broadband infrastructure to world-class levels. In addition, 24 leading broadband companies have endorsed our call for fiber networks to drive economic growth and competitiveness (see page 52).

Dr. Timothy Nulty is president of ValleyFiber, a nonprofit bringing universal, open access, publicly owned fiber networks to Vermont. He was general manager of Burlington Telecom, a municipal fiber network using innovative financing that did not require taxpayer resources. His career includes stints as senior advisor to the CFO, US Dept. of Energy; managing director of a consulting company specializing in telecommunications, finance and energy; managing director of a telecom venture capital group; telecom strategist for the World Bank; deputy director of both the House and Senate Commerce Committees; and professor of economics.

David Russell is solutions marketing director for Calix, a vendor whose equipment is used by hundreds of small to midsized telecom providers. He has more than 20 years of experience in optical broadband access systems and holds eight patents in wireless and cable technologies.

Jim Baller is president of a communications law firm whose clients include the National Association of Telecommunications Officers and Advisors, regional and state utility associations and municipal leagues. He founded the US Broadband Coalition, a consortium working for development of a comprehensive national broadband strategy. The Fiber to the Home Council has called Mr. Baller “the nation’s most experienced and knowledgeable attorney on public broadband matters.”

Christopher Mitchell leads the Telecommunications as Commons Initiative with the New Rules Project of the Institute for Local Self-Reliance. The ILSR, a nonprofit, works to enable communities to increase economic

effectiveness, reduce waste, decrease environmental impacts and provide for local infrastructure ownership. Its New Rules Project seeks to change rules that undermine the strength of local economies.

Joe Savage is president of the Fiber-to-the-Home Council, North America, whose mission is to educate, promote and accelerate fiber to the home. He has more than 35 years of executive-level experience in telecommunications and optical networking. A professional engineer, he holds patents for high-speed digital transmission cable design and for methods of avoiding Internet congestion in the public switched telephone network.

Wes Rosenbalm is president and CEO of Bristol Virginia Utilities, a 64-year-old public utility. In 2003, he led BVU in deploying the first municipally owned fiber-to-the-user broadband network. Mr. Rosenbalm later forged partnerships with local and state leaders and the neighboring planning district commission to extend the network into six other rural counties in Southwest Virginia. In 2007, he testified before the US Subcommittee on Telecommunications and the Internet to endorse the Community Broadband Act, a federal law that would remove barriers to municipal governments offering telecom services.

Gary Fields is president of a consulting group that assists development organizations. In 25 years he has assisted with financing over \$1 billion in development projects. He was deputy commissioner for the Minnesota Department of Trade and Economic Development, VP at Springsted Public Finance Advisors, and director of the National Development Council.

Hilda Gay Legg served as the 15th administrator of the Rural Utilities Service, overseeing a \$6 billion loan and grant program for the infrastructure needs of rural America. She is committed to encouraging economic growth while improving quality of life in rural America. She was also CEO of the Center for Rural Development in Somerset, KY, and alternate federal co-chairman for the Appalachian Regional Commission.