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BROADBAND INVESTMENT FOR ECONOMIC RECOVERY

The Commonwealth of Massachusetts applauds the Obama-Biden transition team for including investment in broadband, or high-speed Internet access, as a key component of its economic recovery package. Universal and affordable broadband is critical to the nation's capacity to compete and succeed in the global economy. Broadband has been shown to create jobs and is equally essential to key services that advance the public good, including education, health care, public safety, government efficiency, civic engagement and local democracy. It is therefore entirely appropriate that broadband should be included in a package of measures intended to stimulate the economy immediately as well as lay the foundation for growth and prosperity continuing for many decades to come.

At the same time, broadband is a new form of infrastructure that differs materially from more traditionally visible objects of public investment, such as roads, bridges and school buildings. Furthermore, most (though by no means all) broadband infrastructure to date has been financed, built and operated by the private sector. The transition team is breaking important new ground in developing appropriate formats for federal investment in broadband. Should funds flow to public, private or non-profit organizations? Should investments be targeted at areas that lack broadband availability, populations for whom broadband is not affordable or national broadband quality goals (such as California's goal of 50 Mbps by 2015)? All such options are legitimate possibilities, and clearly the transition team will need to sort through many considerations and tradeoffs in deciding which approaches to incorporate into their plan.

As the transition team develops its plan, a key consideration should be the capacity of existing organizations and programs to make immediate effective use of federal funding directed towards broadband-related policy goals. The greater this capacity, the more likely it is that federal broadband funding will achieve the intended quick stimulus effect.

To help inform the transition team's work in this regard, this memo characterizes the landscape of public broadband stimulus programs already underway, focusing on the state and federal levels with which we are most familiar. Our intent is not to attempt an exhaustive list, but rather to give the transition team a sense of the range of orientations found in existing programs. These include programs that focus on broadband availability, adoption and quality. For each of these orientations, we suggest the particular forms of new federal investment that would be most compatible with existing programs and therefore most likely to produce immediate impact.

Universal Broadband Availability

Having accurate data about where broadband is, and is not, available is the critical first step for any program aimed at ensuring universal broadband deployment. Fortunately, Congress passed the Broadband Data Improvement Act two months ago to address just this problem, laying out a system of national coordination of state grants to fund broadband mapping efforts. Unfortunately, Congress has not yet funded this Act. **We agree with the Center for American Progress¹ that full funding of the Broadband Data Improvement Act through the economic recovery package would be a wise investment that would quickly jump-start efforts to stimulate broadband availability.**

Beyond mapping, states that have committed themselves to universal broadband have typically either: (1) invested their own funds in publicly owned infrastructure or (2) collected surcharges on telephone service and re-distributed them to grantees via a state "Universal Service Fund" mechanism.

Massachusetts² and Vermont³ are examples of the first group, states that have committed their own public funding to the goal of universal broadband deployment. Both have followed a public-private partnership approach in authorizing the use of state bond funds for investment in selected long-lived components of broadband infrastructure, such as conduit, fiber and wireless towers. These components are then made available to private firms to offset their cost of providing service to previously unserved homes and businesses. **Additional federal funds would have an immediate and positive impact on states' public-private partnerships for broadband deployment, by enabling these projects to reach a larger number of unserved citizens as well as deploying higher-capacity broadband technologies.**

We urge the transition team to build as much flexibility as possible into federal funding approaches so that the full diversity of public-private partnership approaches to universal broadband deployment can be appropriately supported. Ideally, federal funds would be accessible to either the public or the private partners in a state, or both, as needed. **Funding aimed at state broadband authorities would be most effective in the form of direct grants.** Funds directed toward the private firms that are co-investing with state broadband authorities may be structured in many forms, including loans, loan guarantees or tax incentives. If a loan-based approach is taken, care should be taken to avoid the unrealistic terms that have made previous broadband loan programs unable to find many borrowers.⁴ By definition, areas of the United States that remain unserved today – more than a decade after broadband was

commercially introduced – pose significant economic challenges to firms seeking return on investment. If these areas were economical to serve with market-based financial terms, private firms would have served them already. To be successful, any loan program must recognize this reality and offer loan terms more similar to those made under the Rural Electrification Act (averaging about 35 year terms at 2% interest) than the current Rural Utilities Service broadband loan program, which typically features payback periods shorter than 10 years at close-to-market interest rates. It is also not clear whether any tax incentive could provide enough financial benefit to overcome the challenging economics of deploying in unserved areas. In short, based on our understanding of the economic challenges of reaching unserved citizens, we believe more significant injections of capital and longer-term planning horizons are likely to be necessary.

California and Maine are examples of states in the second group that have adapted their in-state Universal Service Funds (USF) to support broadband deployment. Typically, the adaptation involves partially diverting or adding a surcharge on telephone service, with the resulting funds disbursed through grants to firms, non-profits or local public entities (such as utility districts) bringing broadband to unserved areas.

An equivalent adaptation is entirely possible at the federal level as well, if the transition team wishes to direct some stimulus funding towards adding a broadband component to the high-cost portion of the federal USF, following last year's recommendation from the Federal-State Joint Board on Universal Service. If this approach is followed, however, care will need to be taken to ensure that broadband funds are distributed in a technology-neutral manner that is not biased toward firms that have historically provided telephone service and been the sole recipients of USF funds.

Adoption and Affordability

Research from the Pew Internet & American Life Project has consistently identified income, age and education levels as key demographic factors influencing broadband adoption. Raising broadband adoption levels thus requires focusing on broadband affordability directly, as well as conducting education and outreach efforts targeting key demographic segments, such as older or less educated Americans.

Just as stimulus funds could be used to extend the high-cost portion of the USF to achieve universal broadband deployment, so too could stimulus funds be used to extend the Lifeline and Link-Up components of the USF to improve broadband affordability. A combination of rule changes and additional funding could be considered to make low-income consumers' purchases of broadband eligible for Lifeline service and Link-Up installation subsidies.

Demographically-targeted outreach is often easier to accomplish at the state, regional, and local level, where more knowledge is embedded about the affected populations and strong working connections already exist between the public sector and locally effective non-profit organizations. **If demographically-targeted outreach is contemplated to raise broadband adoption levels as part of the stimulus package, it may be best implemented in the form of flexible grants to states, counties or cities, or directly to non-profits with histories of success**

in running technology adoption programs targeting relevant demographic groups. As one of many possible examples, in Boston the Technology Goes Home⁵ program provides training and equipment to ensure access to home computers for Boston public school students. On a larger scale, the Connected Nation program has received quite a bit of attention for its user education activities intended to stimulate and aggregate broadband demand.⁶

Quality

Not all broadband is created equal. The ability of a broadband connection to support particular applications depends on aspects of quality including the bandwidth provided in each direction, the latency (for example, the high latencies of satellite-based broadband render Voice over IP effectively unusable) and whether mobility is provided.

Current federal programs to promote universal broadband, such as the broadband grant and loan programs run by the Department of Agriculture's Rural Utilities Service, do not include any indication of broadband quality as part of their evaluation criteria. This policy is inconsistent with the Obama-Biden administration's goal of restoring U.S. leadership in broadband and the many innovations that flow from it. We therefore suggest that this policy be revisited as part of the broadband stimulus package, and that any new federal subsidy programs also be crafted to recognize differences in broadband quality, and promote the best quality possible within the available budget.

Conclusions

The discussion above has highlighted several mechanisms through which the stimulus package can provide funds complementary to state, local, private and non-profit entities investing in broadband infrastructure, broadband affordability and user education. Grants, long-term loans and loan guarantees are particularly promising approaches.

Stimulus funding could also be used to create new broadband components within both the high-cost and low-income portions of federal and state Universal Service Funds. If this approach is followed, however, care will need to be taken to ensure that broadband funds are distributed in a technology-neutral manner that is not biased toward firms that have historically provided telephone service and been the sole recipients of USF funds.

Broadband access has a proven track record of stimulating economic growth, creating jobs, and increasing property values and tax receipts. Broadband also generates public returns – including fewer cars on the road, better education and health care, and more efficient government – that pay societal dividends above and beyond the profits reaped by the private firms that provide the service. Universal, affordable and consistently high-quality broadband would thus be the 21st century equivalent of previous federal government infrastructure initiatives, including the expansion of electricity, telephone and road networks, which resulted in tremendous economic development and increased prosperity from targeted public investments

¹ Will Straw and Michael Ettlinger, “How to Spend \$350 Billion in a First Year of Stimulus and Recovery,” Center for American Progress, December 5, 2008, p. 11. Available at http://www.americanprogress.org/issues/2008/12/pdf/second_stimulus.pdf

² Governor Deval Patrick signed “An Act Establishing and Funding the Massachusetts Broadband Institute” into law on August 4, 2008. See <http://www.masstech.org/broadband> for an overview of the Institute’s mission and activities and a link to the legislation. Governor Patrick’s Broadband Initiative seeks to retain the Commonwealth’s competitive edge by ensuring that affordable, robust and ubiquitous broadband is available statewide. The Massachusetts Broadband Institute will make strategic and targeted public investments with the objective of providing high-speed Internet, or broadband, service to all currently unserved citizens in Massachusetts. The initiative will enhance Massachusetts’ competitive position in vital sectors of the economy and improve the health, safety, education and quality of life for the citizens of the Commonwealth.

³ For more information about the Vermont Telecommunications Authority, created by legislation in 2007, see <http://www.telecomvt.org>

⁴ For example, Michigan recently discontinued a broadband loan program originally enacted in 2002. Michigan had a \$50 million authorization to provide loans for private companies, but given the high cost of construction in very rural areas, low-cost loans did not provide sufficient incentives for private providers, and much of the fund went unallocated. The program did not have the flexibility to address the real capital needs involved in deployment of broadband infrastructure.

⁵ For more information about the Technology Goes Home program, see <http://www.cityofboston.gov/bra/digitalbridge/programs.html>

⁶ While the Connected Nation model is sometimes portrayed as a universal broadband strategy, the model does not actually involve any public investment in infrastructure deployment.