City of Seattle

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2 March 2009

Marlene H. Dortch,
Office of the Secretary,
Federal Communications Commission,
445 12th Street SW,
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SUBJECT: Comments to the FCC regarding the Broadband Provisions of the Recovery Act, and Preliminary *Ex-Parte* Meeting Summary, **GN Docket No. 09-40**

This letter is a summary of the City of Seattle's *ex-parte* comments regarding this Docket and the FCC's request for comment on its consultative and expert, technical roles in the broadband provisions of the Recovery Act. Thus summary follows the oral presentation made by the City of Seattle at 10:30 AM EDT on Tuesday 31 March 2009. This document is submitted under 47 C.F.R. §§ 1.1200, 1.1206.

Present at the Oral Comments:

- For the City of Seattle:
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- For the Commission: Claude Aiken, Theodore Burmeister, Krista Witanowski, Kevin Holmes, Jennifer Salhus, Jeff Cohen, Ron Repasi, Walter Johnson, Gregory Vadas, Carol Simpson, Steve Klotzman

Introduction

The City of Seattle believes, in making these definitions, the NTIA and the FCC should take a long-term view, analogous to the telephone, railroad and highway networks, which continue in service - with maintenance and upgrades - 50 to 100 years or more after construction.

For broadband networks funded under the ARRA, this means constructing fiber optic cable backbones and fiber to every home and business in the United States. Fiber is a long term asset, and will be in service past the year 2050, a decades-long investment. The recent history of technology shows that regular upgrades to electronics "future-proof" fiber, increasing the capacity of each fiber cable, allowing it to carry more-and-more broadband traffic.

The City of Seattle constructed its first fiber network for public-agency-only use in 1986, and that physical fiber is still in use today, 23 years later, to carry the City government's voice, data and radio network traffic. The City has led a coalition of public agencies in Seattle to extend the fiber network to almost 350 route-miles, more than 30,000 fiber-miles in the region.

This coalition of partners includes all major City departments (the municipal electric utility, water utility, police, fire, transportation, and information technology), King County, the Seattle and King County Libraries, Seattle Community Colleges, Seattle Public Schools, the University of Washington, the State of Washington, the Federal GSA, and others. The City of Seattle's Department of Information Technology maintains and extends this fiber network on behalf of the partners. The network reaches every major public agency facility, college and most schools within the City limits.

We believe the broadband networks constructed under ARRA must be able to carry very high speed applications. Indeed, perhaps the major "killer application" is two way high-definition video. High definition television sets are becoming common in homes and businesses and will be virtually ubiquitous on premises in the near future. With inexpensive attached HD cameras and with high-speed, low-latency broadband networks, each such set becomes a video conferencing tool.

As an example, take my appearance before the FCC today. I drove to SeaTac airport near Seattle, took a flight across the country, and drove to the FCC. This journey consumed many gallons of precious fossil fuels, thereby increasing our nation's dependence upon foreign oil. The journey put many pounds of carbon into the air, contributing to global warming. If the nation had a high-speed, symmetric broadband network capable of two-way high-definition video, I could have made this appearance without these adverse affects, including the significant loss of time and productivity associated with travelling.

Only fiber networks - not copper or wireless - offer the high speed, symmetric (two-way) capability to support such an application.

Verizon, a private telecommunications carrier, has the vision for fiber-to-the-home networks with its FIOS offering. Customers (mostly residential) of FIOS rave about its speed, versatility and reliability. But Verizon only serves a portion of the nation, and no other telecommunications carrier has the foresight or financial resources to start such projects.

ARRA cannot fund a national network. But it can - with proper definitions of broadband - fund projects which show the way and seed construction of such an ambitious network. Then private providers, cities and states can continue its construction and expansion.

The Internet gave rise to a wide variety of innovative uses which changed the economic base and the lives of people in the United States. Such uses include the world-wide-web, electronic mail, telephone-over-the-Internet, and low-speed video. A new, much-higher-speed fiber network will create a similar burst of creativity and economic improvement.

Finally, it is clear the United States is in economic competition for jobs with other nations. Other nations are constructing fiber-to-the-premise networks which improve productivity and reduce energy consumption in the fashion I've described above. An expansive definition of broadband for ARRA is essential for the United States to remain competitive in such a world.

Specific comments:

1. <u>The definition of unserved area</u>.

We suggest any area of the nation which does not have fiber-to-the-premise could be considered "unserved".

2. <u>The definition of underserved area</u>.

We suggest any area of the nation which does not have fiber-to-the-premise is "underserved".

3. <u>The definition of "broadband".</u>
   - Broadband should be defined by current and next generation applications such as high-speed video, telemedicine, telework, distance education, smart-grid, gaming, and video conferencing.
   - This definition must include multiple two-way high-definition video streams to multiple locations in a premise.
   - The emerging international standard is 1 gigabit-per-second streams of data in both directions (to and from a home or business)
   - But, perhaps, a better broadband definition is simply "fiber" because it is "future-proof" and creates construction/installation jobs in the United States

4. <u>The non-discrimination obligations that will be contractual conditions of BTOP grants.</u>
   - All such networks must be open access networks, where the network provider does not and cannot discriminate against applications or users based on their bandwidth use.
   - We applaud the FCC's four Broadband principles (5 August 2005)
   - With very high capacity, zero or low latency networks - possible (over distance) only with fiber, non-discrimination is natural, because there is sufficient capacity for all such applications. With such high capacity, network operators would not have to discriminate. In fiber networks all applications (voice, video, data, and so forth) will receive equal treatment because the network will have the capacity to deliver them all
   - In any lower capacity network (over wireless or copper), the network provider will need to throttle certain applications, thereby discriminating against them.
   - Networks funded under BTOP should, at the very least, be able to carry all existing traffic to a premise (telephone lines, DSL, cable television, Internet), including multiple HDTV video streams, in both directions (symmetric).

5. The network interconnection obligations that will be contractual conditions of BTOP grants.
    - All local networks should be required to establish local peering points.
    - Individual networks serving neighborhoods, towns or cities in a region will be directly connected to each other in a non-discriminatory fashion, and in a "mesh".
    - Local peering points in a "mesh" allow diverse paths - both local peering points and ISP connections. Such a mesh is less likely to disruption in a regional emergency or disaster such as an earthquake. Such a mesh supplements other, existing networks such as public safety radio, satellite, and the public switched telephone network.
    - Neighborhoods and cities geographically and culturally close to each other, or part of a common economic region (e.g. Puget Sound in Western Washington State), will have high-speed, redundantly routed Internet connections which match the close geographic proximity and normal transportation paths (highways, public transit, local dialing areas of telephone systems) which presently make them a coherent region and community.
    - In rural areas, fiber optic networks to homes and businesses could occur in towns and villages, with individual towns connected via commercial fiber networks (ISPs) to the broader internet.

Summary

The City of Seattle urges the FCC and NTIA to make long-term and expansive definitions of the criteria for broadband project funding under the ARRA. We strongly feel fiber-optic-cable backbone networks and fiber to every home and business in the United States, is only strategic, viable, choice for broadband. ARRA, by funding such projects, seeds the creation of a national fiber-to-the-premise network which will reduce commuting and travel, reduce our dependence upon foreign energy resources (oil), reduce greenhouse gas emissions, improve productivity with less time wasted on commuting/travel, and improve the quality of life for people living in the United States.

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The FCC's Four Broadband Principles (FCC 05-151, 5 August 2005)

- *To encourage broadband deployment and preserve and promote the open and interconnected nature of the public Internet*, consumers are entitled to access the lawful Internet content of their choice.
- *To encourage broadband deployment and preserve and promote the open and interconnected nature of the public Internet*, consumers are entitled to run applications and use services of their choice, subject to the needs of law enforcement.
- *To encourage broadband deployment and preserve and promote the open and interconnected nature of the public Internet*, consumers are entitled to connect their choice of legal devices that do not harm the network.
- *To encourage broadband deployment and preserve and promote the open and interconnected nature of the public Internet*, consumers are entitled to competition among network providers, application and service providers, and content providers.