SEATTLE CITY COUNCIL
CENTRAL STAFF

SURVEY OF BROADBAND INITIATIVES

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INTRODUCTION

This paper provides a brief history and summary of City initiatives to promote broadband internet access. In considering these initiatives, it is important to note that information technology continues to evolve and develop, as does the consumer demand and the competitive market for such services. Many of these ideas will continue to be revisited over time in context of changing technology and market conditions.

While City officials have articulated various broadband strategies and goals, these initiatives generally focus on similar themes of exploring City-provided services, promoting public-private partnerships, and reducing regulatory barriers to encourage private service providers.

GOVERNMENT-OWNED FIBER

In 1995, City Council passed Ordinance 117981 which established a model for cooperative agreements between public agencies for shared use of fiber-optic cable. This was at a time when government agencies were moving away from commercial telecommunications services and investing in their own networks. These cooperative agreements provide a means for public agencies to achieve cost efficiencies and to encourage building excess capacity in fiber-optic networks in anticipation of future needs. These agreements focus on shared use of the fiber network by government agencies, but did not contemplate broader public access or public use for non-governmental activities.

Through a series of agreements following this model, the City and 20 other federal, state and local agencies have collectively invested $25 million to construct more than 550 miles of fiber in Seattle and the surrounding region. The Department of Information Technology's Fiber Team is responsible for installing, maintaining and repairing this fiber network and managing business transactions between partners.

MUNICIPAL BROADBAND

In 2005, a City-commissioned task force[1] recommended the development of a citywide Fiber-to-the-Premises (FTTP) network by 2015, to meet the increasing demand for bandwidth and to help maintain Seattle's position as a leader in the information economy. The task force called for City government to work with the private sector to develop such a network, as well as to explore the economic feasibility of a municipally owned system.

Following the task force recommendations, the City issued a Request for Interest (RFI) in 2006 seeking potential partners for building a competitive FTTP network. The City received 28

[1] The Task Force on Telecommunications Innovation was established by Resolution 30684.

responses to the RFI and interviewed 10 of the responders; however, none were willing to finance construction of an FTTP network without some form of public support. Unwilling to commit to a public subsidy at the time, the City deferred issuing a Request for Proposal (RFP).

Between 2007 and 2011, the City subsequently commissioned a series of studies (linked below) to determine the feasibility of a municipally owned network. These studies explored the potential consumer market for broadband services and evaluated the business case for building and operating an FTTP network. The most recent study was released in June 2015 and focused on the feasibility of developing a 1 Gigabit-per-second (Gbps), data-only, FTTP network.

The 2015 study reported that the market could support a 41 percent take rate[2] at $75/month for 1 Gbps service, and the study estimated that developing such a network would cost between $460 million to $630 million. The lower cost estimate is dependent on deploying fiber in close proximity to Seattle City Light's power lines (sometimes referred to as the "power space"). The higher cost estimate assumes that fiber would have to be deployed in the more crowded "communication space," where existing communication infrastructure would need to be reconfigured or modified to allow for new fiber. The study found that the power space model could potentially break even financially[3] (given the assessment of the market take rate), while the communication space model was not financially sustainable. The study noted that customers are very sensitive to price, and the study further noted that the anticipated market responses from other existing service providers (e.g., reduced pricing, new service offerings) could undermine the financial feasibility of establishing a new FTTP network.

At this point in time, the City is not actively pursuing a municipally owned broadband network. Private internet providers began offering new high-speed broadband services in 2015. Comcast currently offers 2 Gbps service at $300/month to customers within 1/3 mile of their fiber network. CenturyLink currently offers 1 Gbps service at $80/month (bundled with television service) with select availability in Seattle neighborhoods. City staff have not evaluated the full geographic coverage of these private networks or plans for future expansion.

Commissioned Municipal Broadband Studies:

- Residential Survey Results for the City of Seattle, May 2007
- Financial Feasibility of Building and Operating a Fiber Network in the City of Seattle, May 2007
- Broadband Telecommunications Report, March 2008
- Evaluation of Potential Risks and Benefits of Municipal Broadband, November 2008
- Benefits Beyond the Balance Sheet: Quantifying the Business Case for FTTP in Seattle, September 2009
- Seattle Community Broadband Initiative, May 2011
- City of Seattle Fiber-to-the-Premises Feasibility Study, June 2015

[2] The take rate is the number of customers subscribing to a new FTTP service, divided by the total number of potential customers that would have access to a new FTTP service, expressed as a percentage.
[3] The study's financial model included 20 year bonds, backed by subscriber revenues, to finance construction of the FTTP network. The study also modeled a scenario which relied on a voter-approved $440 million bond issue, backed by property taxes, resulting in a lower subscription rate of $45/month. Such a bond measure would require 60 percent voter approval.

LEASING EXCESS FIBER TO PRIVATE ENTITIES

To encourage private sector deployment of broadband service, the City passed legislation in 2012 to allow for private party use of the City's excess fiber capacity (Ordinance 123931). That year, the City issued an RFI to solicit private interest in leasing this excess capacity, with a particular interest in making FTTP service available to City residents. While the City received ten initial responses to the RFI, the first and only fiber lease agreement to date was a 5-year lease agreement with Cascade Networks for use of fiber in the International District. That agreement[4] was executed in 2014 and allows Cascade Networks to offer FTTP service to a few businesses that were unable to obtain high-speed internet from incumbent providers.

Gigabit Seattle

One of the initial responders to the fiber lease RFI was Gigabit Squared. In December 2012, Gigabit Squared, the City of Seattle, and the University of Washington announced a partnership (Gigabit Seattle) to develop an FTTP network and Wi-Fi service in 14 Seattle neighborhoods. The proposed broadband service would have been owned and operated by Gigabit Squared without any City investment, other than the lease of excess City fiber to provide the data backbone. By 2014, Gigabit Squared had been unable to secure financing and suspended project activities[5] before any excess fiber lease agreements were executed.

REGULATORY CHANGES

The City has also looked to make regulatory changes to reduce barriers to private deployment of broadband infrastructure. In 2014, the City passed Ordinance 124598, which revised permit requirements to allow for private communication cabinets to be placed in the right-of-way. Under previous regulations, it was more challenging for internet service providers to deploy new communication cabinets for improving broadband service (particularly in underserved areas, such as Beacon Hill).

MUNICIPAL WI-FI ACCESS

In addition to pursuing broadband service, the City has looked at ways to promote public Wi-Fi access. Public access to Wi-Fi is becoming increasingly desirable with the proliferation of mobile devices and applications. The City currently offers public Wi-Fi access at various City facilities, including libraries, community centers, City Hall, Seattle Municipal Tower, Seattle Center and the Langston Hughes Cultural Arts Center.

From 2005 to 2012, the City provided free Wi-Fi access in the Columbia City and University District neighborhoods as demonstration projects to assess the technology and coverage limitations associated with public Wi-Fi networks, and identify a self-sustaining financial model for continued operations. The projects ended when no working financial model was identified to replace the public subsidy for on-going operations and maintenance.

[4] In 2014, the Cascade Networks paid the City $8,000 for leased use of the fiber and $8,500 for "make ready" work to access the leased fiber.

[5] The City incurred $50,000 in engineering costs at the request of Gigabit Squared, which have been referred to collections.

In 2015, the City received a grant to make portable Wi-Fi Hot Spots available for checkout through the Seattle Public Library system. The 2016 budget included additional funding to expand this program to support approximately 800 Wi-Fi Hot Spots.

In addition, Council included funding in the 2016 Budget for the development of a Public Wi-Fi Access Strategy to improve digital access for low-income households and populations. The strategy is intended to identify locations where publicly accessible Wi-Fi can have the most meaningful impact to underserved populations, develop potential funding sources and partnership ideas to expand Wi-Fi access, and review the City's current practices.