

X. APPENDIX B – Profile of the City of Stamford

Purpose

The City of Stamford has joined in this RFQ to seek information that the City can use to develop a final RFP for deployment of broadband infrastructure. We seek information not just from entities that may ultimately bid to construct all or part of the Stamford Community Broadband Network, but also from public and private entities that may be interested in partnering with the City to contribute assets or provide support for the initiative in other ways – for example, by sponsoring deployment in neighborhoods or parks. We refer to the resulting infrastructure as the Stamford Community Broadband Network (SCBN) although the SCBN could actually be a network of networks, constructed independently over time by many different network owners.

Because the RFI is being issued as part of the RFP process, and because the City wishes to encourage those who may later choose to respond to the RFP to submit information about existing networks, the City will treat responses to this RFI as confidential so long as the process is ongoing or as otherwise allowed by law.

However, information that is not a trade secret or otherwise protected from disclosure under the Connecticut Public Records Act may be subject to disclosure once the RFP issues, and a contract is awarded, or if the City determines that an RFP should not issue. Therefore, any entity that submits material that is protected from disclosure by law must carefully follow the procedures in Section 1(D) below. Failure to follow these procedures may result in waiver of rights to protect information from disclosure. Generically marking a response as “confidential” is not adequate.

In our estimation, it is unlikely that a single vendor can provide the capabilities described in this RFQ. The City encourages potential vendors and other interested entities to either respond to the entire scope, or to portions that are particularly relevant to their organization's strength. As a guiding principle, the City seeks pragmatic and cost-effective solutions that minimize implementation risk and maximize value to constituents. The RFQ responses will inform subsequent procurement activities.

This RFQ is for planning purposes only in connection with the development of an SCBN RFP. It is neither a solicitation notice nor an RFP. Responses to the RFQ are not offers and cannot be accepted by the City of Stamford to form a binding contract. This RFQ shall not limit any rights of the City, and the City reserves all its rights including, but not limited to, its right to elect not to procure the facilities and/or services that are the subject of this RFQ and its right to procure them from a vendor that has not responded to this RFQ.

Stamford Community Broadband Network (SCBN)

The SCBN needs to serve as an accessible connection for people to access 21st-century jobs, products and services. It is estimated that 93,577 Stamford residents are connected to the Internet either at home, work, and elsewhere or at multiple locations. There is an estimated that 103,511 Stamford residents live in a household where Internet is available and an estimated 28,821 Stamford residents are not connected to the Internet at home, work, or elsewhere.

High-speed, affordable Internet access is essential to the City and nation's global competitiveness. It drives job creation, promotes innovation, expands markets for American businesses, and supports improved education, health care, and public safety. Stamford has many competitive advantages.

Stamford is home to a burgeoning tech industry with the emergence of the Stamford Innovation hub, part of a statewide ecosystem of entrepreneurial hubs, and home to the UCONN Stamford campus, Sacred Heart University Stamford campus and University of Bridgeport Stamford campus. The Stamford MSA is ranked 9th in a recent Kaufman report in startup density size (2011). Recently, Stamford has become an emerging media hub with the relocation of NBC Universal/Sports to the city, and joining other prominent companies that include World Wrestling Entertainment (WWE), Encompass Digital Media and Yes Network.

Many cities nationally and internationally have deployed networks that offer residences at speeds up to 1 Gbps (up and down) – speeds that allow users to transmit and receive information nearly 200 times faster than from residences in Stamford – at the same or at a lower price than Stamford residents pay for inferior service. A recent study by the federal government General Office of Accounting showed that in communities with broadband networks, small business reported that that they could operate and compete more effectively.

The GAO study reports that communities that have deployed advanced networks are more attractive to businesses and to potential residents.

A) Goals of SCBN

In light of the increasing importance of affordable, high-speed broadband services, the SCBN initiative has the following goals:

- Create an open access gigabit network in targeted commercial and industrial corridors to foster innovation, drive job creation, and stimulate economic growth;
- Ensure that every Stamford resident or business can access advanced communications networks that will provide high-speed, high quality broadband connections to the Internet, where Stamford lives, works and plays, indoors and

out of doors;

- Ensure that areas of the City that are currently underserved are promptly served;
- Ensure that the City is served by an open network, so no one is prevented or blocked from taking full advantage of the Internet's capabilities;
- Ensure that every Stamford resident can enjoy the benefits of broadband, regardless of income or the area in which they reside; and
- Establish free wireless networks in parks and public spaces in the city.

More specifically:

1. The City of Stamford wants to be the location of choice for businesses and residents – to attract businesses with good paying jobs, to entice graduates from our local universities to reside and work in Stamford, and to ensure the City remains a center for the digital economy and a global leader in technology and innovation.

Through the SCBN initiative, the City intends to encourage, to the extent feasible, rapid deployment of a network or networks that can deliver world-class broadband Internet access – at speeds 1Gbps or higher – to all residences, multi-unit dwellings, and businesses through wireline and/or wireless connections.

2. The City of Stamford wants to ensure that every resident has access to basic broadband and that higher levels of broadband service are available at speeds and prices comparable to other innovative communities around the world.

In a subsequent RFP, the City may ask bidders to propose an enforceable timetable and process for build-out, that has understandable and measurable network performance standards, and that includes a strong Broadband Universal Service plan that ensures that access to all residential and business properties.

The City invites responses that include ideas and recommendations regarding the development of a gigabit fiber network in the selected zones:

- a) Underserved neighborhoods and business centers
- b) Public Park Space
- c) Public Spaces in the Downtown

B) Municipal Assets - Existing Public Fiber Network Infrastructure

The City of Stamford over 35 linear miles of fiber optic cable; this is a combination of 288, 144, 96, 48 and 24 count fiber, respectively. The fiber optic network is currently in full use by public safety (police/fire), public schools, public libraries and all other municipal offices (~40 sites total). It is hub and spoke topology, not suitable for residential use without a significant build out and use of disparate data centers/ISPs for failover and redundancy.

- The City has 315 miles of roadways and alleys.
- There are more than 15,000 utility poles in Stamford, Connecticut Light & Power owns 49%, AT&T owns 49% and the City owns 2% which are decorative street light only poles with no other utilities attached
- Please see the attached network map.

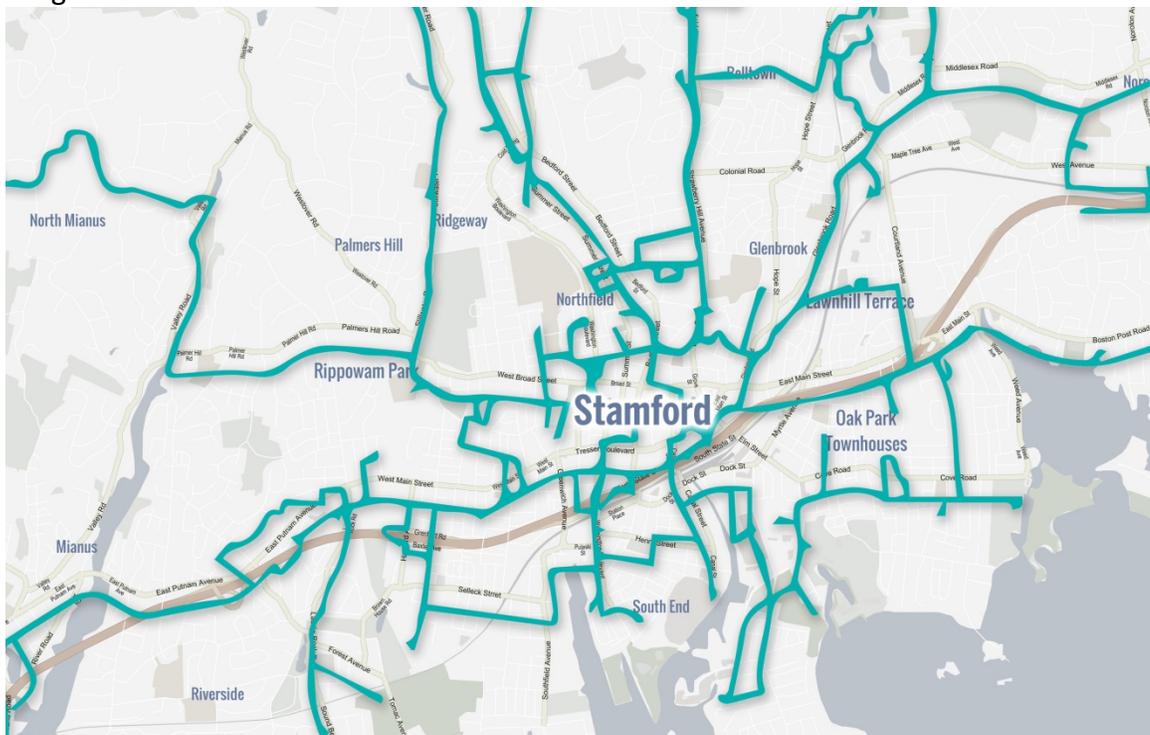
C) Private Assets - Existing Private Fiber Network Infrastructure

The Stamford combined network includes over 380 total route miles of 832 strand private fiber owned by Fibertech Networks. The Fibertech has a carrier-grade colocation space at 1351 Washington Blvd. that has been designed with a strong focus on security and redundancy.

Colocation site specifications include:

- Fibertech manned site
- Building security guard
- IP camera
- Two 15-ton Liebert cooling systems (68° F)
- Fire suppression system
- Diverse entrance
- Back-up power source

Figure 1. Fibertech Network in Stamford



D) **Current ISP Network Infrastructure**

Current Landline Internet Service Providers (ISPs) in Stamford, CT

Internet Service Provider (ISP)	Type of Internet Service Offered	Maximum advertised download speed	Maximum advertised upload speed
Lighttower Fiber Networks	Optical Carrier	1 Gb/s	1 Gb/s
MegaPath Corporation	Other Copper Wireline	10 Mb/s - 25 Mb/s	10 Mb/s - 25 Mb/s
Cogent Communications, Inc.	Optical Carrier	1 Gb/s	100 Mb/s - 1 Gb/s

Landline Internet Speed in Stamford (Average wireline ISP speeds in Stamford)

- Average download speed: 117.48 Mb/s
- Average upload speed: 4.24 Mb/s
- Maximum download speed: 234.72 Mb/s
- Maximum upload speed: 9.24 Mb/s

Current Wireless Internet Service Providers (ISPs) in Stamford, CT

Internet Service Provider (ISP)	Type of Internet Service Offered	Maximum advertised download speed	Maximum advertised upload speed
T-Mobile	Wireless	10 Mb/s - 25 Mb/s	1.5 Mb/s - 3 Mb/s
Clearwire Corporation	Wireless	3 Mb/s - 6 Mb/s	768 Kb/s - 1.5 Mb/s
Sprint	Wireless	3 Mb/s - 6 Mb/s	768 Kb/s - 1.5 Mb/s

Average wireless ISP speeds in Stamford

- Average download speed: 117.48 Mb/s
- Average upload speed: 1.72 Mb/s
- Maximum download speed: 234.72 Mb/s
- Maximum upload speed: 3.38 Mb/s

C. GUIDANCE FOR RESPONSES

- Strategies included in responses to the RFQ should aim for forward-looking, assertive technology solutions that create immediate advantages for users and fertile platforms for innovations in products and services that sustain our technology leadership for years to come.
- High bandwidth in the upstream direction is considered essential.
- Some or all of a respondent's proposed service offerings could initially be at speeds below the thresholds so long as the overall strategy furthers the goals of broadband innovation and development. While the City shares a belief that ultra-high-speed broadband networks are a pre-requisite for ongoing advances in a number of disciplines, end-users in our city have a wide-range of networking needs and use-cases. We do not anticipate that all areas in the City would receive access to similar speeds at similar times.
- Respondents should feel free to propose alternative business models and network solutions to leverage existing city or state investments that could be used to meet the City's needs.

Background Information

The City of Stamford is located in Southern Connecticut on the coast of Long Island Sound, approximately 25 miles from the edge of NYC. Stamford is Connecticut's third-largest city, with a population of 125,109 and comprises 52 square miles in area. The City has grown by more than 5,000 residents since 2002, and it surpassed the population of Hartford for the first time in 2012. Stamford is one of the State's leading employment centers and boasts a diverse economy employing nearly 75,000 workers.

Stamford as the first major regional transportation hub for inter-commuter traveling to NYC and Boston and intra-commuters travelling for the million residents located in Fairfield/New Haven Counties. Stamford is serviced by several major highways (I-95, the Merritt Parkway). Stamford's Transportation Center (STC) is located on a main line of Metro North and Amtrak. It is the busiest train station between New York City and Boston with over 200 train trips daily. Additionally there are 1,100 daily bus trips originating or terminating at the STC. Stamford is also within 1/2 hours of three international airports (JFK, Newark Liberty and LaGuardia) and 1/2 hour to Westchester Airport which serves destinations along the East Coast. Public transportation is provided by the CT Department of Transportation. Westchester County Airport is 20 minutes west of the Stamford. The two largest public utilities are Connecticut Light and Power (CL&P) and Connecticut Natural Gas.

Stamford's leading growth sectors include retail, accommodation and food

services, information services and healthcare services and education. Growth in these sectors is translating into demand for retail and restaurants, high-tech office space; classroom and vocational training space; and high-quality, well located commercial space. Stamford was also ranked as the city with the highest entrepreneurial activity rate in the Connecticut with 580 entrepreneurs per 100,000 adults.

Major Stamford employers include Financial services/insurance leaders such as GE Capital, Gen Re, Louis Dreyfus, Highbridge Energy Trading, RBS, SAC Capital, UBS, XL America, and is at the center of Fairfield County's more than 200 hedge funds and private equity firms; Media companies such as NBC Universal/Sports, WWE , Encompass Digital Media and Yes Network; Consumer products companies – Affinion Group, Conair, Design Within Reach, Harmon International; Nestlé Waters; Vineyard Vines; IT – Kayak.com, Gartner Group, Indeed.com; Healthcare/Pharma – Purdue Pharma, Fuji Films; Hospitality/Recreation – Starwood Hotels & Resorts; Chelsea Piers; Manufacturing/Industrial – Cenveco, Crane Co. Hexcel, Intrepid Aviation, Pitney Bowes, Silgen Holdings, Stargas Partners, Tronox; and Communications – Frontier Communications

Stamford has one of the highest educated populations in the US. Nine out of ten are high school graduates. Those possessing a bachelor's degree or higher is estimated at 45.9% of the population. Stamford is tied with Iowa City, Iowa for the US metropolitan area with the highest percentage of the adult population holding a bachelor's degree or higher; 44% of adults hold a degree.

Over the past decade, as measured in nominal dollars, the share of households with incomes in the top two quintiles of distribution -- \$150,000 and over – increased dramatically in Stamford, from 6,438 to 10,346 households, growing by 60.7 percent. In absolute terms, this change represented a faster growing concentration of wealth in Stamford, than in Fairfield County.

In addition to an active arts community through the Stamford Center for the Arts, Rich Forum, Stamford Symphony, Bartlett Arboretum, SoundWaters and Stanford Museum and Nature Center, Stamford's significant geographical expanse provides a range of outdoor activities from the North Stamford's back country hiking trails to maritime activities on Long Island Sound. The City has multiple public parks, ice rink, and two outstanding municipal golf courses. A key component to Stamford's quality of life is that it ranks as the 14th safest city in America among the 274 cities with 100,000+ in population.