# MEMORANDUM

**To:** Mayor and City Councilors

**From:** Rich Olson, City Manager
Angela Cole, Assistant to the City Manager

**Date:** March 24, 2016

**Re:** **Presentation** – Presentation of Broadband Proposal by Eastern Shore Communications

***BACKGROUND:***

Included in the FY 2015-2016 budget was funding for the full implementation of the Nexgrid System. Once fully implemented, the system would create a wireless mesh system throughout the City. The system will, in its present configuration, be designed for 100 megabytes, but it can be expanded to 1 gigabyte. During your City Council meeting of September 14, 2015, staff brought before the City Council a proposal that would look at the feasibility of allowing a third party to utilize the Nexgrid System and the surplus capacity it will have for proprietary purposes. The City Council authorized staff to enter into a Smart Grid and Broadband Project with Professor Nicholas Didow of UNC Chapel Hill. It became apparent to City staff early on, that to maximize the City's Smart Grid System potential, a third party needed to be brought in while the City is designing the system backbone in order to determine how robust the system needed to be built and the number of fiber connection points would be required for data.

During your City Council meeting of January 25, 2016, the City Council authorized staff to issue a Request for Proposals so as to allow the City to select a private third party broadband service provider to which the City would lease available surplus capacity on the Nexgrid System. The RFP requested that the third party outline their previous internet services in other markets, provide an overview of the type of services they would propose for Elizabeth City and a proposed structure of a lease-based partnership. Proposals were to be submitted by February 6, 2016. With its authorization, City Council requested staff provide a presentation of the successful bid responses. After completing an evaluation of all proposal responses, City staff requested that Eastern Shore Communications, LLC provide a formal presentation to the City Council.

## *ANALYSIS:*

In response to the RFP for Broadband Service the City received three bid responses from one local vendor and two out-of-town companies: InteliPort, Inc. of Hertford, NC; Olsen Enterprises, d/b/a, CloudWyze, Inc. of Leland, NC; and Eastern Shore Communications, LLC of Cape Charles, VA. City staff completed a comprehensive review of each proposal with assistance from Professor Nicolas Didow and his professional staff. The assessment included a 10-point Weak/Strong evaluation of ten criteria with a maximum score of 100 points, and the opportunity for evaluator's comments. The top two scores were earned by CloudWyze and Eastern Shore Communications (ESC). Follow-up interviews were held with both companies. Because the InteliPort, Inc. proposal was incomplete of the requisite information, the bid was deemed "Non-Responsive." No interview was held with InteliPort, Inc. representatives.

The conference with each broadband company was greatly informative, highlighting two very different approaches to a lease-based partnership. The CloudWyze model required a $950,900 up-front investment from the City, with a 50/50 split of Residential bandwidth revenues. Conversely, commercial account revenues would not be shared, with 100% retained by CloudWyze. In their model, CloudWyze would buildout and retain ownership of the broadband infrastructure. The ESC bid response proved a far more profitable partnership alternative for the City. ESC would not require up-front monetary investment from the City, simply requiring access to the City's fiber network, water towers, and utility poles so as to install signal antenna. ESC offers a cost sharing of both commercial and residential revenues. One important thing that City staff did learn in this exercise is that the use of the smart grid mesh system is not practicable in this broadband initiative. Despite the surplus capacity that would be available on the Nexgrid System, the large amount of data traffic that is projected (both residential and commercial) would "bog down" the bandwidth, resulting in spotty and degraded internet service. This reality defeats the primary purpose of identifying a third party broadband provider.

Notwithstanding the opportunity to use the Nexgrid Smart Grid, City staff believes the opportunity to offer internet service to our community exclusive of the Legacy Internet Service Providers (ISPs) in our area is an achievable and beneficial alternative. ESC offers a proposal that will leverage as much of the surplus capacity of the wireless smart grid network and surplus bandwidth as possible, by installing fixed wireless transmission equipment on the City's water towers, utility poles, and other available assets. Staff believes that by providing broadband service using a third party provider the City will make considerable gains toward solving the digital divide that exists for our community, as well as stimulate the local economy.

## *STAFF RECOMMENDATION:*

By motion, authorize staff to negotiate an agreement with Eastern Shore Communications, LLC, present the results of said negotiations to the City Council at which time the Council will call for the necessary public hearing(s).

# Response to Request for Proposal
# EC
# Broadband Service Provider

Submitted to:
Office of the City Manager
City of Elizabeth City
306 E. Colonial Ave
Elizabeth City, NC 27909

Submitted by:
Ronald van Geijn
President
Eastern Shore Communications

*To the Members of the Broadband Service Provider Selection Committee:*

*Eastern Shore Communications, LLC (ESC) is pleased to submit this response to ELIZABETH CITY (EC) for the opportunity to utilize the available and surplus capacity on its new and enhanced wireless smart grid network. EC has planned, funded, and is in the processes of fully deploying a critical public infrastructure asset to the entire community. The cooperative approach put forth by EC for a final mile provider to assist in the final network design and backbone designation makes this opportunity one for which all ELIZABETH CITY residents may have access to affordable, reliable broadband services.*

*This innovative strategy to maximize the function and utility of the smart grid network will also support the development and ongoing operation of a sustainable last-mile broadband service. The acceptance of this proposal will not only address the digital divide for this rural community, but also energize the local economy and enhance the quality of life for all its citizens and visitors.*

*Like EC, ESC's leadership also has a commitment to provide next generation technology solutions that will support the needs of the digital generation. ESC has established a viable business plan for broadband wireless access to design, deploy and operate reliable, affordable and sustainable residential and commercial broadband services that are aligned with EC's goals for the targeted service areas.*

*ESC will leverage the surplus capacity of the wireless smart grid network and surplus bandwidth by installing fixed wireless transmission equipment on the City water towers and other available assets. The fixed wireless network will be fed by the middle mile fiber optic cables provided by the City. The fixed wireless infrastructure will allow ESC to deploy and operate reliable and sustainable broadband services, again, aligned with the goals of the City for surrounding areas.*

*Our team looks forward to a positive collaborative effort to enhance both the economy and internet experience of Elizabeth City, NC*

**Ronald van Geijn**

## ATTACHMENT A: COVER SHEET

| | |
|---|---|
| **Name of Person, Business or Organization:** | Eastern Shore Communications, LLC |
| **Type of Entity:** (e.g. Sole-Proprietorship, Partnership, Corp., Non-Profit, Public Agency) | Limited Liability Company |
| **Federal Tax ID Number:** | 45-4154535 |
| **Contact Person – Name** | Ronald van Geijn |
| **Contact Person – Address** | PO BOX 615<br>Cape Charles, VA 23310<br>23120 Lankford Hwy<br>Cape Charles, VA 23310 |
| **Contact Person – Phone Number (s)** | 757-695-2080 extension 110 |
| **Contact Person – e-mail address** | rvgeijn@esvc.us |
| **Principals – identify all persons who have an equity interest in the Provider organization and/or hold a senior leadership position in the Provider organization** | Ronald van Geijn – President<br>Judith Morgan – VP Client Services<br>Brian Manley – Director of Operations<br>Teodora Cusmina – Manager Customer Service |
| | |

By signing this ***Cover Sheet*** I hereby attest: that I have read and understood all the terms listed in the RFP; have read and understood all terms listed in this proposal; that I am authorized to bind the listed entity into this agreement; and that should this proposal be accepted, I am authorized and able to secure the resources required to deliver against all terms listed within the RFP as published by the City of Elizabeth City, North Carolina, including any amendments or addenda thereto except as explicitly noted or revised in my submitted proposal.

Ronald van Geijn

Signature of Authorized Representative
Representative

Printed Name of Authorized

## 6.2 Previous Experience

### 6.2.1 Identify your previous experience in providing Internet services and broadband content in other markets

***Eastern Shore Communications (ESC) was born from the recognized need for High Speed Internet services in the under and non-served counties of Northampton and Accomac, VA. ESC was the first provider to utilize the newly constructed fiber optic backbone funded by citizen paid taxes and stimulus grants. ESC now designs, deploys, and operates high capacity wireless access solutions that provide private, residential, and enterprise broadband services. ESC is led by a management team that has many decades of experience developing, deploying and operating telecom infrastructure, including delivery of end-user services over FTTH/FTTB infrastructure, wireless access infrastructure. ESC has established successful and mutually beneficial relationships with municipalities on the Eastern Shore of Virginia and Maryland to effectively and efficiently deploy and provision the FIBER backbone to the under and non-served community members as well as those served by National Providers whose service is limited and sometimes unreliable.***

***Our commercial and industrial customers include the largest employers in the region, and some of the largest hospitality enterprises in the Mid Atlantic. We also provide residential services and last mile coverage in rural communities in all of our market areas. Our existing network backbone is a state of the art fiber optic network that reaches from Washington DC to Atlanta Georgia, with interconnection to other fiber networks the world over. Our secure network operations centers are diversely located in Norfolk, Cape Charles and Wallops Island. We offer up to 10 Gigabit broadband internet and transport service as well as Digital telephone, Cloud hosting services, rack-space, customer premise network design services, and engineering and technology consulting to maximize internet and network based productivity.***

### 6.2.2 Customer segments served

***As internet connectivity is now equivalent to and considered a utility such a water and electricity, it is imperative that any and every final mile provider be capable of provisioning service to all members of a community. EC is equipped to and does deliver the utility of internet to all segments of its served Communities. Our Residential customer segment includes the realm of residential users - those who barely surf the net and check email; those households with multiple members playing high impact games or working from home with requirement for video conferencing and immediate response. Our Business entities include single owner/employee retail establishments subscribing to basic Digital Telephone and internet services; multi-location networked sales centers with thousands of calls and users; medical and legal establishments; boutique and national chain hospitality locations; as well as governmental, educational, and non-profit organizations.***

### 6.2.3 Services and content offered, including pricing and contract terms

**<u>Residential Internet:</u>**

***ESC currently offers a variety of Residential FIBER based Fixed Wireless Service to the communities served. The services provided are based on requested activity performance to meet the customer need and are not defined by bandwidth. In many cases the bandwidth advertised is an "up to" level and rarely do user demands reach the peak, making the actual bandwidth provisioning and cost unnecessary or overkill for most households. Below is our present***

*pricing in the counties of Northampton and Accomac, VA Our Fiber to the Home (FTTH) product is typically offered when there is a dense population of homes in an area where the Fixed Wireless product will not perform effectively. This product carries greater consumer expenses in both monthly cost and installation, however, it also adds an estimated $5,000 to property value! FTTH readies a home for "the internet of things" and is an investment to be amortized over 20 years or more!*

***Residential Fixed Wireless***

| | |
|---|---|
| *$39.95/month* | *Basic – surfing the net; checking email; stream movies (not in HD)* |
| *$49.95/month* | *Streaming – multiple users, and the ability to stream movies in HD without buffering* |
| *$69.95/month* | *Gaming – for users with gaming devices that need the speed to play without lag* |

***Installation is $125.***

***A monthly Equipment rental and maintenance and rental fee of $4.95/month applies to all services.***

***Residential Fiber To The Home (FTTH)***

| | |
|---|---|
| *$95.95/month* | *Economy – surfing the net; checking email; stream movies (not in HD)* |
| *$119.95/month* | *Premium – multiple users, and the ability to stream movies in HD without buffering* |
| *$149.95/month* | *Gaming – for users with gaming devices that need the speed to play without lag* |
| *$189.95* | *Optimum – ready for "the Internet of things!"* |

***Installation is $525.***

***A monthly Equipment rental and maintenance and rental fee of $4.95/month applies to all services.***

## Business Internet

***ESC currently offers Fixed Wireless, FIBER to the Business (FTTB) and Dedicated FIBER for Business customers.***

**Fixed Wireless**

| | |
|---|---|
| *$59.95/month* | *Economy Business – up to 3 office devices and will support 2 active phone users* |
| *$79.95/month* | *Premium Business – supports up to 5 office devices and up to 4 active phone users.* |
| *$89.95/month* | *Business Plus – supports up to 8 office devices and up to 6 active phone users.* |

**FIBER To The Business (FTTB) synchronous service with the reliability of 99.9%**

| | |
|---|---|
| *$149.95/month* | *Economy Business – up to 3 office devices and will support 2 active phone users* |
| *$189.95/month* | *Premium Business – supports up to 5 office devices and up to 4 active phone users.* |

| | |
|---|---|
| *$219.95/month* | *Business Plus – supports up to 8 office devices and up to 6 active phone users.* |
| *$249.95/month* | *Business Optimum– supports up to 12 office devices and up to 10 active phone users.* |

**Dedicated FIBER services – Monthly cost for user circuit provisioned by bandwidth and term in years:**

| *Bandwidth (Mbps)* | *Term* | *Monthly* | *Term* | *Monthly* | *Term* | *Monthly* |
|---|---|---|---|---|---|---|
| *3* | *1* | *$359* | *3* | *$299* | *5* | *$260* |
| *5* | *1* | *$538* | *3* | *$449* | *5* | *$390* |
| *10* | *1* | *$718* | *3* | *$598* | *5* | *$520* |
| *15* | *1* | *$897* | *3* | *$748* | *5* | *$650* |
| *20* | *1* | *$1,166* | *3* | *$972* | *5* | *$845* |
| *30* | *1* | *$1,518* | *3* | *$1,265* | *5* | *$1,100* |
| *40* | *1* | *$1,932* | *3* | *$1,610* | *5* | *$1,400* |
| *50* | *1* | *$2,243* | *3* | *$1,869* | *5* | *$1,625* |

**Digital Telephone Service – unlimited local and long distance calling**

**Residential:**

**$19.95/month Stand alone service**
**$14.95/month Combined with ESC internet**

***$50 installation fee. Additional charges apply for e911 service ($.75/month); Porting $15/line; additional programming dependent on time.***

**Business - unlimited local and long distance calling starting at:**
**$44.95/month Stand alone service 1st Did**
**$34.95/month Combined with ESC internet 1st Did**

***$100 installation. Additional charges apply for e911 service ($.75/month); Porting $15/line; additional programming dependent on time.***

**The following information describes our support and service offerings. These services are offered as annual contracts or hourly charges.**

## Network Management

***ESC provides implementation, architectural, operational and strategic planning for small to medium sized IP based networks with the ability to utilize our Cisco Partner relationship for larger more complex network design and implementation.***

## Desktop and Laptop Support

***ESC provides a complete solution for securing, supporting and managing desktop/laptop workstations in your company thus improving end-user productivity while managing the***

***computing assets of the company.***

## Telephony Support, Service, and Design

***ESC provides communication analysis, design, equipment, implementation and phone service to both residential and business customers We can provide both the phone system and the phone lines so that you get the best possible mix of service, features and pricing, allowing the best range of options from a single source.***

## Cloud services

***ESC is a Microsoft & Symantec Member Partner with a specialization in cloud services and small business solutions providing next-generation communications and collaboration cloud based services.***

## Consulting and Solutions Design

***ESC's objective is to be a trusted IT Solutions Partner that enables companies to realize the enormous benefits of today's emerging technologies. We pride ourselves in being a Strategic Business Technology Partner that businesses trust to take a problem or need and provide cost effective technology solutions that will work. ESC employees have over 15 years in developing technology solutions for small and mid sizes businesses in various departments and industries.***

### 6.2.4 Customer Service capabilities and Technical Support practices, including service standards

### Local Office and Live Call Attendant

***ESC will establish an office within the City limits staffing Installation Technicians and Contractors for initial buildout and deployment of services after which Customer Service Representatives will follow. During normal business hours (Monday through Friday 8:00 AM to 5:00 PM) customer support calls are answered by a live Customer Support Specialist. All calls are answered in a timely and courteous manner with an emphasis on customer service and issue resolution.***

### On Call Support System (OCSS)

***The OCSS provides the ability to be in touch with one of our trained Support Specialists 24 hours a day, 7 days a week, and 365 days a year. In the event of a critical issue, an emergency, or other service related technical problem; customers can call our afterhours support line and a Support Specialist will respond in the specified SLA response time if not sooner.***

### Operations Support System (OSS)

***The OSS provides an easy to use, but comprehensive solution for managing both simple and complex issues, provisioning services, monitoring performance and analyzing network faults. Key Features of the OSS include:***

- ***Management of multi-technology and multi-vendor networks.***
- ***Monitor network resources and map them to the actual services.***
- ***Automated tools for managing network configuration and parameters, provisioning changes and correcting inconsistencies.***
- ***Real-time activity in network, and get the full picture of customers' experience.***

## Business Support System (BSS)

***The BSS is a group of software solutions used to support billing, customer management, sales, marketing, orders and service activation.***

***Key Features of the BSS include:***

- ***The sales and management of products and services.***
- ***Keep track of and easily access information about customers and prospects.***
- ***Billing, charging and settlement of customer accounts.***
- ***Order and provisioning management.***
- ***Customer support and issue management.***

***The following SLA is applicable to all FTTB, FTTH, and Direct Fiber Customers. Our Fixed Wireless customers will fall under a best effort standard.***

This Service Level Agreement ("SLA") only applies to ESC's Enterprise Data Products, as defined herein (the"Services"), and is offered as part of networking services provided by the company. The SLA does not apply to any applications or enhanced telecommunications services, local access circuits, equipment sales and related maintenance services, or any other services provided by the company or any third party provider. The SLA is effective as of the first day of the first whole calendar month after the initial installation of Services. This SLA shall be deemed an addendum to either the written contract executed by the parties or the ESC Online Terms and Conditions to which Customer is subject, whichever is applicable. To be eligible for the credits under this SLA, Customer must be in good standing with ESC and current in Customer's obligations.

### *Description of Services*

The Services covered under this SLA are Ethernet Internet ("EI"), Dedicated Internet ("DI"), and MPLS Networking

Services. MPLS Networking Services ("MPLS Networking") are IP Virtual Private Network ("IP VPN"), Virtual LAN Services ("VLS"), Dynamic IP, and Virtual PBX. Individually, the Services may be referenced in this SLA by the noted abbreviations. Collectively, the term "Services" as used in this SLA refers to any of the qualifying EI, DI, and MPLS Networking Services but does not refer and shall not be interpreted as referring to other services offered by ESC or any third party provider. Services under this SLA shall only be entitled to credits consistent with the terms of this SLA and shall not be subject to credits under any other agreement or arrangement that may exist between ESC and Customer. To the extent of any conflict between the terms of this SLA and such other agreement with respect to service credits, this SLA shall govern.

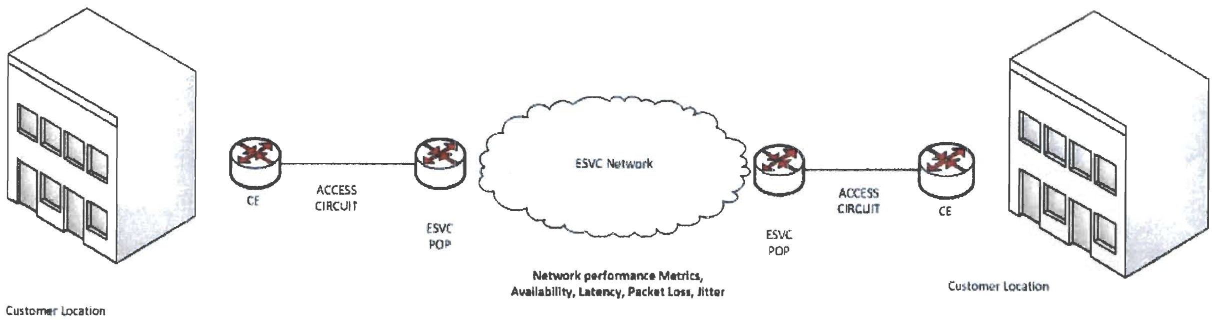
### MPLS Networking

As noted above, MPLS Networking includes for purposes of this SLA only IP VPN, VLS, Dynamic IP, and Virtual

PBX. ESC's MPLS Networking provides connectivity through ESC's network at designated speeds, enabling Customer to transport private data between two or more Customer locations. MPLS Networking enables Customer to prioritize voice or data through Quality Of Service ("QOS") levels, as defined later, based on Customer's unique business requirements. The performance of ESC's network for purposes of measuring MPLS Networking deliverables under this SLA is measured through Network Availability, Network Latency, Network Packet Loss, and Network Jitter. These individual metrics are defined in Section 3 below and collectively may be referenced in this SLA as "Network Performance

Metrics." All Network Performance Metrics will be measured across specific Points of Presence ("POP") on ESC's Network **(See figure 2-1).** ESC's network management system is the sole and conclusive measurement for purpose of this SLA regarding Network Performance Metrics.

**Figure 2-1**

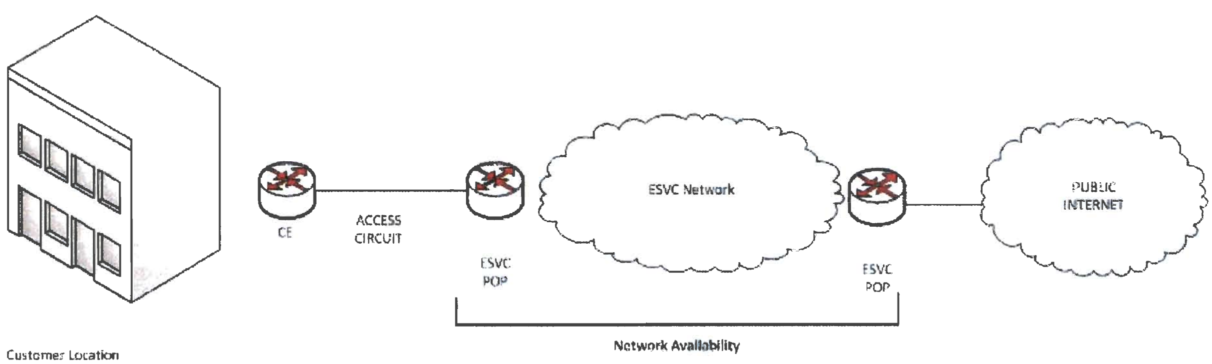



## Dedicated Internet / Ethernet Internet Access

As noted previously, in addition to MPLS Networking, this SLA applies to DI and EI. DI and EI provide connectivity to the public internet through ESC's network at designated speeds.

The performance of ESC's network for purposes of measuring DI and EI deliverables under this SLA is measured through Network Availability. For purposes of DI and EI, Network Availability will be measured across
specific POPs on the ESC Network. **(See figure 2-2).** ESC's network management system is the sole and conclusive measurement for purpose of this SLA regarding Network Availability.

**Figure 2-2**




*Definition*

## On-Net:

On-Net is defined as those Services which are provided by the applicable ESC company and reside on ESC's wholly owned facilities.

### Off-Net:

Off-Net is defined as those services / circuits, which are provided by the applicable ESC company and *do not reside* on ESC's wholly owned facilities.

### Service Outage:

A Service Outage is defined as the complete unavailability or degradation of Services during any unscheduled period of time except that ESC is not responsible for failure to meet performance objectives for any of the following reasons which shall not be deemed a Service Outage (collectively, "Exclusions"):

- Any Service Outage for which Customer may have previously obtained credit or compensation outside the terms of this SLA;
- Actions, failures to act or delays by Customer or others authorized by or acting on behalf of Customer to use the Services;
- Failure of power, equipment, services or systems not provided by ESC including, but not limited to, other providers' networks and interconnections to or from and connectivity with other Internet service providers' networks;
- Customer owned or leased equipment or facilities (*e.g.*, Customer's PBX or local area network);
- Failure of Customer to afford ESC or its agents access to the premises where access lines associated with the Services are terminated;
- Election by Customer not to release the Services for testing and/or repair during which time Customer continues to use Services;
- Maintenance activities (including planned and emergency) as set forth in Section 5 of this SLA;
- Implementation of a Customer order that requires Services interruption;
- Failure to report a Service Outage to ESC or reporting of a trouble where no trouble was found;
- Labor difficulties, governmental orders, civil commotion, acts of God, and other circumstances beyond ESC's reasonable control; and
- Failure of equipment or systems responsible for network measurements.

### ESC Point of Presence ("POP"):

Physical location of ESC router at the edge of ESC's network that faces the Customer Edge and delivers private data and/or Internet Services to Customer's network.

### Customer Edge ("CE"):

CE refers to the router at Customer's premises that is connected to the ESC POP.

### Quality of Service ("QOS"):

QOS is the ability to provide different priority to different applications, users, or data flows, or to offer a certain level of performance for data flows. For example, a required bit rate, delay, jitter, packet dropping probability and/or bit error rate may be offered by ESC to Customer. To determine what QOS level applies to the Services, Customer either must select from the following QOS classes of service or subscribe to a Service that is defaulted into one or more QOS classes. The ESC QOS classes are identified as:

| | |
|---|---|
| Real Time | Real-time Class of Service delivers premium QOS to a customer's site and is optimized for<br>low latency and low jitter performance required for voice communications. All managed VoIP services are defaulted into Real-time QOS |
| Mission Critical Data | Mission Critical Class of Service provides the highest priority treatment for data. Intended |

| | |
|---|---|
| | for applications with high business value requiring large bandwidth allocations and/or lower<br>latency such as interactive video conferencing, streaming video, credit card transactions, and ERP applications like SAP and PeopleSoft |
| Business Critical Data | Business Critical Data Class of Service provides priority treatment to transactional and interactive data such as email, or client/server applications |
| Standard Data | Standard Data class of Services enables customers to share latency and jitter tolerant data<br>and Internet applications across all locations. DI and EIA traffic are defaulted into Standard<br>Data QOS. |

## Calendar Month:

For the purpose of this SLA a Calendar Month is based on 60 Minutes/Hour, 24 Hours/Day, 30 Days/Month = 43,200 average monthly minutes. In no event shall any obligation for a service credit arise under this SLA until such time as the Services are fully installed and operational.

### *Service Levels*

## Network Availability

For purposes of measuring ESC's MPLS Networking, DI, and EI QOS under this SLA, the term "Network Availability" is defined as the percentage of time in one Calendar Month during which POPs on ESC's wholly owned IP/MPLS network can deliver traffic to/from other ESC POP locations and does not apply to local access circuits. Network Availability shall be calculated based on an aggregate monthly measurement average between specific ESC POP endpoints. Network Availability measurements do not include the specified Exclusions (*e.g.*, scheduled maintenance windows or planned outages).

The following outlines the Network Availability objectives in any given Calendar Month:

| | |
|---|---|
| **On-Net MPLS Networking DIA / EIA** | **99.99%**<br>(≤ 4.32 minutes of network unavailability per month) |

Services Credit for time when Network Availability is not provided ("Network Unavailability")

| Network Unavailability / Duration | Services Credit |
|---|---|
| >4.32 minutes and ≤ 1 hour | 1/30th of the Monthly Recurring Charge |
| >1 hour and ≤ 2 hours | 2/30th of the Monthly Recurring Charge |
| >1 hour and ≤ 3 hours | 3/30th of the Monthly Recurring Charge |
| >1 hour and ≤ 4 hours | 4/30th of the Monthly Recurring Charge |
| >1 hour and ≤ 5 hours | 5/30th of the Monthly Recurring Charge |
| >1 hour and ≤ 6 hours | 6/30th of the Monthly Recurring Charge |
| >1 hour and ≤ 7 hours | 7/30th of the Monthly Recurring Charge |
| >1 hour and ≤ 8 hours | 8/30th of the Monthly Recurring Charge |
| >1 hour and ≤ 9 hours | 9/30th of the Monthly Recurring Charge |
| >1 hour and ≤ 10 hours | 10/30th of the Monthly Recurring Charge |
| >1 hour and ≤ 11 hours | 11/30th of the Monthly Recurring Charge |
| >1 hour and ≤ 12 hours | 12/30th of the Monthly Recurring Charge |
| >1 hour and ≤ 13 hours | 13/30th of the Monthly Recurring Charge |
| >1 hour and ≤ 14 hours | 14/30th of the Monthly Recurring Charge |

| | |
|---|---|
| >14 hours | 15/30th of the Monthly Recurring Charge |

| Product | Target Commitment |
|---|---|
| On-Net<br>MPLS Networking<br>DIA / EIA | **99.99%**<br>(≤ 4.32 minutes of network unavailability per month) |

## Network Latency

**For purposes of measuring ESC's MPLS Networking under this SLA, Network Latency is defined as the round trip delay (in milliseconds) of packets transported between specific ESC POP locations across ESC's wholly owned IP/MPLS network and does not apply to local access circuits. Network Latency shall be calculated based on an aggregate monthly measurement average between specific ESC POP endpoints. The following outlines the latency objectives, depending on the class selected by Customer, in any given Calendar Month.**

| QOS Class of Service | Target Commitment |
|---|---|
| **Real Time** | ≤ **40 ms** (Roundtrip) |
| **Mission Critical Data** | ≤ **45 ms** (Roundtrip) |
| **Business Critical Data** | ≤ **48 ms** (Roundtrip) |
| **Standard Data** | **N/A** |

### *Services Credit for Network Latency*

| QOS Class | Target | Network Latency – (Credit as a fraction of the MRC for the Affected Service) |
|---|---|---|
| Real Time | ≤ **40 ms** (Roundtrip) | 1/30 MRC if ESC fails to meet the Network Latency SLA for Real Time QoS during any Calendar Month |
| Mission Critical Data | ≤ **45 ms** (Roundtrip) | 1/30 MRC if ESC fails to meet the Network Latency SLA for Real Time QoS during any Calendar Month |
| Business Critical Data | ≤ **48 ms** (Roundtrip) | 1/30 MRC if ESC fails to meet the Network Latency SLA for Real Time QoS during any Calendar Month |
| Standard Data | **N/A** | N/A |

## Network Packet Loss

For purposes of measuring ESC's MPLS Networking under this SLA, Network Packet Loss is defined as the percentage of packets in a Calendar Month that are dropped between specific ESC POP locations across ESC's wholly owned IP/MPLS network and does not apply to local access circuits. Network Packet Loss shall be calculated based on an aggregate monthly measurement average between specific ESC POP endpoints. The following outlines the Network Packet Loss objectives, depending on the class selected by Customer, in any given Calendar Month.

| [illegible] | [illegible] |
|---|---|
| **Real Time** | **≤ .10%** |
| **Mission Critical Data** | **≤ .30%** |
| **Business Critical Data** | **≤ .50%** |
| **Standard Data** | **N/A** |

### *Services Credit for Network Packet Loss*

| QOS Class | Target | Network Packet Loss, –(Credit as a fraction of the MRC for the Affected Services) |
|---|---|---|
| Real Time | **≤ .10%** | 1/30 MRC if ESC fails to meet the Network Packet Loss SLA for Real Time QoS during any Calendar Month |
| Mission Critical Data | **≤ .30%** | 1/30 MRC if ESC fails to meet the Network Packet Loss SLA for Real Time QoS during any Calendar Month |
| Business Critical Data | **≤ .50%** | 1/30 MRC if ESC fails to meet the Network Packet Loss SLA for Real Time QoS during any Calendar Month |
| Standard Data | **N/A** | N/A |

## Network Jitter

**For purposes of measuring ESC's MPLS Networking under this SLA, Network Jitter is defined as the variation in the delay of received packets transmitted between specific ESC POP locations across ESC's wholly owned IP/MPLS network and does not apply to local access circuits. Network Jitter shall be calculated based on an aggregate monthly measurement average between specific ESC POP endpoints. Network Jitter measurement is only available to customers selecting the Real Time and/or Mission Critical QOS class. The following outlines the Network Jitter objectives in any given Calendar Month:**

| QOS Class | [illegible] |
|---|---|
| **Real Time** | **≤ 2.5 ms** |
| **Mission Critical Data** | **≤ 3.5 ms** |
| **Business Critical Data** | **N/A** |
| **Standard Data** | **N/A** |

### *Services Credit for Network Jitter*

| [illegible] | [illegible] Services) |
|---|---|
| ≤ 3 ms | 1/30 MRC if ESC fails to meet the Network Jitter SLA for Real Time QoS during any Calendar Month. |

### *Credits*

When Customer's Services fail to meet the applicable commitments outlined in this SLA after being reported by Customer, Customer may receive a credit adjustment to its account. ESC maintains internal escalation procedures and call-out technical support for observed holidays and after-business hours emergencies and critical outages. To request a credit under this SLA, Customer shall email their Business Sales Representative with a description of the requested credit along with the ESC trouble ticket number(s) provided by the Service Center within thirty (30) calendar days of the asserted Service Outage. The Business Sales Representative shall notify Customer when the requested credit has been approved or declined.

### Calculations of Credits

Maximum Credit - In no event may the credits provided for hereunder (either individually or on a cumulative basis) in any billing period exceed the total MRCs for that period for service and facilities.

## *Maintenance*

As set forth above, maintenance activities are Exclusions and do not constitute a Service Outage for purposes of this SLA. ESC reserves the right to schedule maintenance and upgrades to the network 7 days a week from 12 a.m. to 6 a.m. in the local time zone of the affected area without prior notice to Customer or upon reasonable advance notice outside these time frames.

### Scheduled Network Maintenance

The term "Scheduled Network Maintenance" refers to upgrades or modifications to network equipment software, network equipment hardware, or network capacity. Scheduled Network Maintenance may temporarily degrade the quality of Customer's Services. ESC takes every reasonable precaution to minimize the duration of any impacts during the Scheduled Network Maintenance window. Such effects related to Scheduled Network Maintenance shall not give rise to credits under this SLA and shall not be deemed a Service Outage. Scheduled Network Maintenance shall be undertaken **between the hours of 12:00AM and 6:00AM of the local time zone.**

### Emergency Network Maintenance:

The term "Emergency Network Maintenance" refers to efforts to correct network conditions that are likely to lead to a material Service Outage and that require immediate action. Emergency Network Maintenance may temporarily degrade the quality of Customer's Services, including the possibility of causing short-duration outages. Such effects related to Emergency Network Maintenance shall not give rise to credits under this SLA and shall not be deemed a Service Outage. ESC may undertake Emergency Network Maintenance at any time deemed necessary to preserve network services.

## *LIMITATION OF LIABILITY*

ESC's total liability to Customer under this SLA is limited to 50% of the MRCs for the affected Services for the applicable Calendar Month in which the Service Outage occurs. Except for the credits identified in this SLA, this SLA does not modify or amend the written contract executed by the parties or the Online Terms and Conditions to which Customer is subject, whichever is applicable, including but not limited to any warranty disclaimers or limitation of liability provisions.

THE PROVISIONS OF THIS SLA ARE CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES FOR ESC'S FAILURE TO MEET THE STANDARDS IN THIS SLA AND ANY OTHER NETWORK, EQUIPMENT OR SERVICE ISSUES.

### 6.2.5 Identify three references (names and contact information) who are familiar with your previous experience as a service provider

**Chad Ballard – President Ballard Fish and Oyster**
**1588 Townfield Drive, Cheriton, VA 23316**
**(757) 695-3804**

**Beverly Butler – President English Towers Condominium Association**
**10000 Coastal Highway, Ocean City, MD 21842**
**(301) 466-6070**

**Harvey Spurlock – Town of Chincoteague Utilities Manager**
**6150 Community Drive, Chincoteague Island, VA**
**(757)-990-3159**

## 6.3 Preliminary proposal for Internet service and broadband content you would offer in the Elizabeth City market

### 6.3.1 Provide a detailed preliminary description of Internet service and broadband content you would propose to offer in the Elizabeth City market

***ESC's initial intent is to offer Fixed Based Wireless, FTTB, and Dedicated FIBER internet services to EC. With the understanding that bandwidth will be readily available, the provisioning and availability of services can be uniquely designed to meet consumer needs. ESC also intends to initially offer Digital Telephone services to include UNLIMITED local and long distance calling. ESC is also developing IPTV with the intent for a late 2016 offering. IPTV, however, is a technology that requires significant development, tremendous bandwidth, and subscriber requirement to be viable.***

### 6.3.2 What technical engineering and design resources would you provide to leverage the City's smart grid infrastructure and available surplus wireless network capacity to enable the delivery of high speed Internet service and broadband content?

***ESC will be using a multi-vendor network infrastructure to include but not limited to equipment from Cisco, Ubiquiti, Cambium, Mikrotik, Powercode, and Motorola. Existing Eastern Shore Communications network infrastructure will be utilized where possible, additional circuits and infrastructure may be provided by, but not limited to EC Nexgrid designed WiFi Network, and MCNC Fiber Network.***

***Capabilities include but are not limited to following features:***

- ***Existing infrastructure to support existing residential customers with scalability.***
- ***Currently providing Metro Ethernet service, connecting multiple locations and delivering dedicated Internet to Business and Government entities.***
- ***Support of world class equipment manufacturers.***
- ***Redundant equipment for disaster recovery capabilities.***
- ***Data Center equipped with UPS and Generator Backup Systems for uninterrupted and conditioned power.***
- ***Field equipment equipped with UPS systems designed to provide over 4 hours uninterrupted and conditioned power.***

***ESC takes network security and customer privacy very strongly. Various security policies and techniques are in place to prevent intrusion and unauthorized access to the network and services. The system supports all network protocols and security measures. Customers may take advantage of VPN's and VLAN's all traffic is passed through 802.11QnQ Tunnels.***

***Wireless Bridges are protected by and not limited to the following policies:***

- ***Components are well-guarded with adequate authentication and authorization policies.***
- ***Proprietary Channel Frequency Shifting is enabled to prevent devices from being detected by other WiFi equipment.***
- ***AP and CPE IP addresses are MAC controlled by provisioning system.***
- ***Backhaul links use FCC licensed frequencies***
- ***WPA2-AES wireless security is used with 24 key passwords***

***Network Infrastructure is protected by and not limited to the following policies:***

- ***Components are well-guarded with adequate authentication and authorization policies***
- ***Network Infrastructure is not visible or accessible by client networks.***
- ***Users are authenticated by provisioning server***

***FCC and Industry Security Standards***

- ***Communications Assistance for Law Enforcement Act (CALEA) compliance certificate on file since 2012.***
- ***Customer Proprietary Network Information (CPNI) compliant and policies in place since 2012***
- ***Payment Card Industry Data Security Standard (PCI DSS) compliant and policies in place since 2012.***
- ***FCC Licensed TV, Internet and VOIP Provider***

### Monitoring and Management Systems

***From ESC's office and data center in Cape Charles all aspects of the network, customers and systems are monitored 24 hours a day, 7 days a week, 365 days a year. Reporting provides notice of unauthorized equipment on network, data and circuit usage, uptime/downtime, latency and packet loss.***

***PRTG Network Monitor is used for to monitor the Network Infrastructure, collecting statistics from the switches, routers and AP's. PRTG's easy-to-use web interface with point-and-click configuration easily shares historical data with non-technical colleagues and customers, including via live graphs and custom reports from its easy-to-use web interface. Supporting multiple protocols for collecting this data, PRTG will alert support technicians when there is a network abnormality or outage.***

***Industry designed software and systems allow ESC to automate billing, subscriber management and provisioning. The ability to assign many types of services to customer accounts - data services, monthly recurring services, self-expiring charges and discounts, referral credits and automatically billed on a monthly basis by credit card, manual cash or check payments. The software also provides ESC with strong capabilities in sales force automation, customer data management, marketing automation, customer service, and analytics.***

## 6.3.3 What customer segments would you serve?

### Coverage

***Best effort will be to given to provide coverage of but not limited to EC using wireless technologies. When wireless services are not possible other means may be used to provide similar service to the location. All interested and service eligible entities will be included in the service offerings.***

***Factors which may limit access to Wireless network include:***

- ***Line of Sight (LOS) to AP not available***
- ***Excessive Tree/Vegetation coverage***
- ***Inability to safely install CPE in range of AP***
- ***Frequency interference***

## 6.3.4 What services and content would you offer to various customer segments, including pricing and contract terms?

***We suggest the following pricing structure for EC. We have introduced an "Economy" level of service for residential customers. We must further explore the locations and interest for our Dedicated FIBER, FTTH and FTTB products to determine appropriate pricing.***

## Residential Internet:

| | |
|---|---|
| *\$9.95/month* | *Economy – surfing the net; checking email* |
| *\$24.95/month* | *Basic – surfing the net; checking email; stream movies (not in HD)* |
| *\$34.95/month* | *Streaming – multiple users, and the ability to stream movies in HD without buffering* |
| *\$54.95/month* | *Gaming – for users with gaming devices that need the speed to play without lag* |

***Installation is FREE with a 2 year commitment; \$75 with a 1 year commitment; \$135 with a month to month service. A monthly Equipment rental and maintenance and rental fee of \$3.95/month applies to all services.***

**FIBER To The Home (FTTH) synchronous service with the reliability of 99.9%**

***Pricing to be determined***

## Business Internet

***ESC currently offers Fixed Wireless, FIBER to the Business (FTTB) and Dedicated FIBER for Business customers.***

**Fixed Wireless**

| | |
|---|---|
| *\$44.95/month* | *Economy Business – up to 3 office devices and will support 2 active phone users* |
| *\$64.95/month* | *Premium Business – supports up to 5 office devices and up to 4 active phone users.* |
| *\$74.95/month* | *Business Plus – supports up to 8 office devices and up to 6 active phone users.* |

**FIBER To The Business (FTTB) synchronous service with the reliability of 99.9%**

***Pricing to be determined***

**Dedicated FIBER services – single user circuit provisioned by bandwidth**

***Pricing to be determined***

**The following information describes the intended support and service offerings. These services are offered as annual contracts or hourly charges.**

## Network Management

***ESC provides implementation, architectural, operational and strategic planning for small to medium sized IP based networks with the ability to utilize our Cisco Partner relationship for larger more complex network design and implementation.***

## Desktop and Laptop Support

***ESC provides a complete solution for securing, supporting and managing desktop/laptop workstations in your company thus improving end-user productivity while managing the computing assets of the company.***

## Telephony Support, Service, and Design

***ESC provides communication analysis, design, equipment, implementation and phone service to both residential and business customers We can provide both the phone system and the phone lines so that you get the best possible mix of service, features and pricing, allowing the best range of options from a single source.***

## Cloud services

***ESC is a Microsoft & Symantec Member Partner with a specialization in cloud services and small business solutions providing next-generation communications and collaboration cloud based services.***

## Consulting and Solutions Design

***ESC objective is to be a trusted IT Solutions Partner that enables companies to realize the enormous benefits of today's emerging technologies. We pride ourselves in being a Strategic Business Technology Partner that businesses trust to take a problem or need and provide cost effective technology solutions that will work. ESC employees have over 15 years in developing technology solutions for small and mid sizes businesses in various departments and industries.***

### 6.3.5 What Customer Service and Technical Support would you offer?

On Call Support System (OCSS)

***The OCSS provides the ability to be in touch with one of our trained Support Specialists 24 hours a day, 7 days a week, and 365 days a year. In the event of a critical issue, an emergency, or other service related technical problem; customers can call our afterhours support line and a Support Specialist will respond in the specified SLA response time if not sooner.***

Operations Support System (OSS)

***The OSS provides an easy to use, but comprehensive solution for managing both simple and complex issues, provisioning services, monitoring performance and analyzing network faults. Key Features of the OSS include:***

- ***Management of multi-technology and multi-vendor networks.***
- ***Monitor network resources and map them to the actual services.***
- ***Automated tools for managing network configuration and parameters, provisioning changes and correcting inconsistencies.***
- ***Real-time activity in network, and get the full picture of customers' experience.***

#### 6.3.5.1 How and where would you staff this?

**Local Office and Live Call Attendant**

***ESC will establish an office within the City limits staffing Installation Technicians and Contractors for initial buildout and deployment of services after which Customer Service Representatives will follow. During normal business hours (Monday through Friday 8:00 AM to 5:00 PM) customer support calls are answered by a live Customer Support Specialist. All calls are answered in a timely and courteous manner with an emphasis on customer service and issue resolution.***

#### 6.3.5.2 What service standards would you provide?

***Please see section 6.2.4***

## 6.4 Options and terms you would propose for structuring the lease-based partnership between the City and the Provider

### 6.4.1 How would you propose to structure the lease-based partnership between the City and the Provider?

***ESC would suggest that the Term of the Lease be initially ten (10) years, commencing upon the execution date of the agreement. ESC shall have the right to extend the Term of this Lease Agreement for successive periods of two (2) years for each ("Renewal Term") on the same terms and conditions. This agreement shall be extended for each successive Renewal Term unless ESC notifies the City and/or the City notifies ESC of its intention not to extend the Term at least 90 days prior to the commencement of the next Renewal Term.***

***ESC shall provide the City in exchange for using the City Fiber Optic Network, Co-location Sites and Surplus Bandwidth a Gross Receipts Fee to the City, on a quarterly basis, throughout the duration of this Agreement. The Gross Receipts Fee shall be ten percent (10%) of ESC's Gross Receipts derived any revenue received from Subscribers for Broadband Internet Services, net of refunds, rebates, or discounts made to Subscribers or other third parties.***

***ESC shall be granted access to the Premises 24 hours a day, 7 days a week without prior notice for the purpose of examining, maintaining, or repairing ESC's equipment.***
***ESC shall have access to Telecom Area during The City's operating hours Monday through Sunday with notice; at any other times only as permitted by authorized representatives of the City.***

***ESC's equipment shall be installed in such a way as to do no physical harm to the Premises, Building or Structure and shall be of adequate strength to give reasonable and normal support. Said construction and ESC's subsequent maintenance of the RF Transmission Site shall be at ESC's sole risk and cost and shall be in compliance with all applicable laws and ordinances.***

***ESC may establish RF Transmission Sites on City structures including but not limited to water towers, antenna towers, utility poles and buildings ("Co-location Sites"). The RF Transmission Site may be modified at ESC's discretion with varying equipment as needed to account for changes in technology needs, and maximize potential subscriber revenue. ESC may run such cabling and other lines from the Premises into the Telephone/Internet/Wiring closet of the Building (the "Telecom Area") where it shall have wall-mounted equipment not larger than two (2) by two (2) feet (the "Broadband Feed"). ESC may install at the Premises a communications enclosure no larger than 6'x6' at the ESC's expense. ESC may provide wireless connectivity to any third party subscriber ("End User") who desires to purchase wireless Internet service from ESC.***

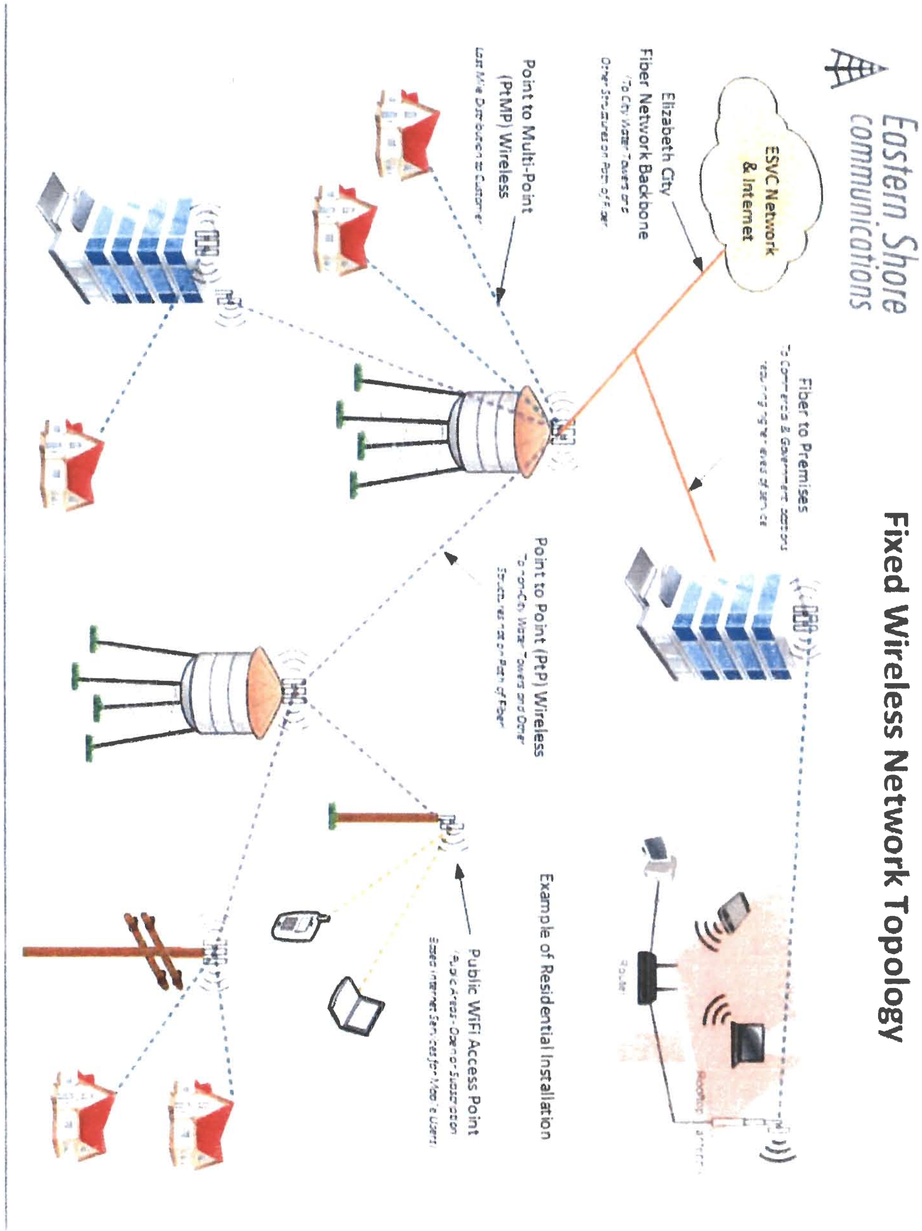
### 6.4.2 Which party should be responsible for the additional engineering costs and initial capital expenses to leverage the City's smart grid infrastructure to deliver Internet service and broadband content?

***ESC will be responsible for engineering and capital expenses for establishing the RF Transmission Sites.***

### 6.4.3 Who holds ownership and maintenance responsibility for these infrastructure and system improvements?

***All equipment used to establish the RF Transmission Sites will remain the property of ESC. ESC will operate and maintain the equipment per standard operating procedures and equipment will be replaced or upgraded as needed.***

### 6.5 Other information, advice, or counsel you would offer to EC with respect to this project



## 7. QUESTIONS

Any questions about the RFP or submission matters should be directed to Angela B. Cole, Assistant to the City Manager / Special Projects, City of Elizabeth City, P. O. Box 347, Elizabeth City, NC, 27907-0347 acole@cityofec.com 252.337.6864.