

CITY OF COOS BAY CITY COUNCIL
Agenda Staff Report

MEETING DATE November 4, 2014	AGENDA ITEM NUMBER
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TO: Mayor Shoji and City Councilors

FROM: Susanne Baker, Finance Director *AB*

Through: Rodger Craddock, City Manager

ISSUE: Downtown Wi-Fi

BACKGROUND:

At the July 1st Council meeting staff was requested to look into the use and connectivity of the downtown Wi-Fi system. The downtown Wi-Fi system started as a centrally focused system in the downtown area and over time additional equipment was added to expand the connectivity footprint. Expanding the footprint included locating equipment on City property and leasing property at various locations (Coos Bay Fire Station No. 1, City Hall, Sause Brothers, Visitors Information Center, Hub Building, and the BNT building). When the downtown Wi-Fi system was first operational in 2006, Wi-Fi systems for the public in the downtown area were generally not available and this met the needs at the time to entice people to spend time in the downtown area. Over the last several years as cell phone technology has improved, Wi-Fi has become more commonplace and businesses offer free Wi-Fi in their establishments to encourage patronage. Additionally, smartphones and even vehicles can access the internet and be Wi-Fi hotspots, which do not require people to stop to access the internet. With the increase of Wi-Fi systems, the downtown area has become “cluttered” with networks and the existing City system does not provide the connectivity that it once did. To provide connectivity at an acceptable level in the downtown area, at a minimum, a more sophisticated system capable of blocking out the interference from the multitude of networks in the downtown area would need to be constructed.

Staff has been working with ORCA for quite some time to troubleshoot the existing system and modify the system to ensure the existing equipment is working optimally. ORCA completed a series of economic upgrades and modifications over the last couple of years which have included upgrading some radios, wiring and infrastructure, configuration changes on the core components of the system, testing, and benchmarking. Though ORCA has remained diligent in their efforts and they confirm in an email dated May 7, 2013 that a significant amount of interference still remains which is causing the lack of connectivity.

“...we are still seeing an overwhelming amount of traffic on the system involving many different types of devices. Since we have begun our troubleshooting we have been able to significantly increase the performance of the Wi-Fi system although the limitations of the components that are currently in place cannot handle the increased load. Among all the devices connected we are seeing a wide range of different quality of connections, simply put, each end users experience is different depending on their device and many other factors.”

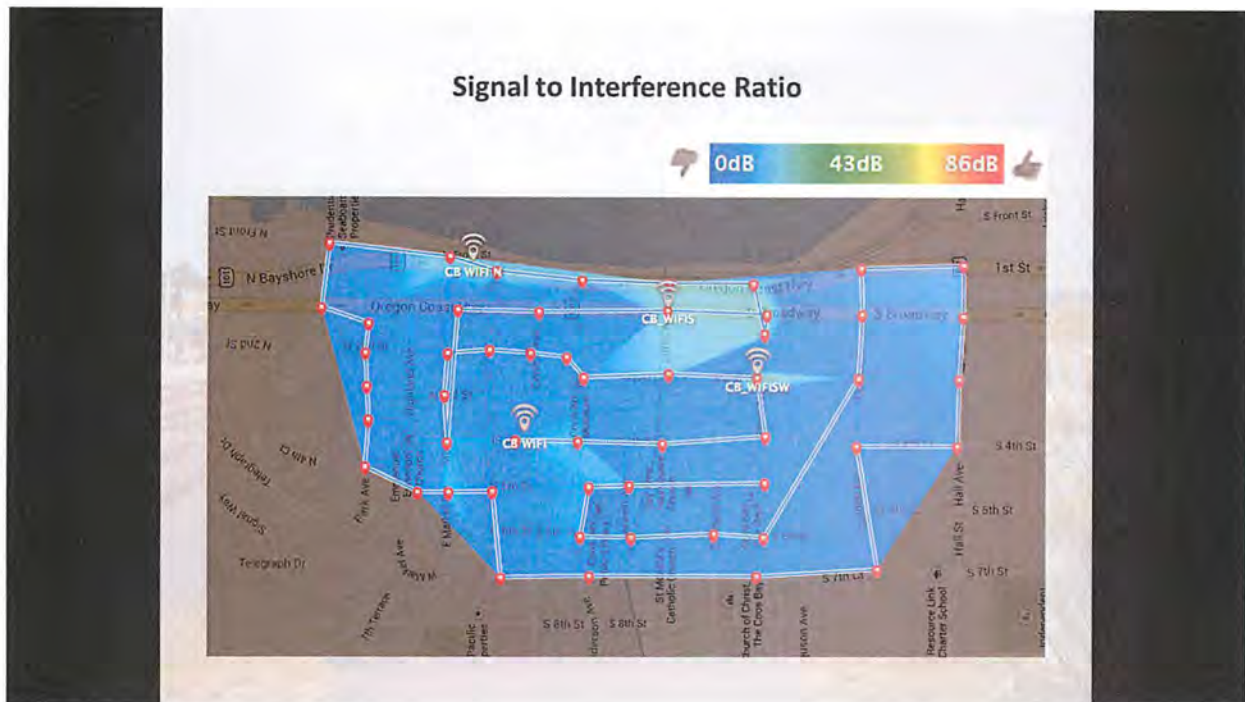


Figure 2

The combination of interference due to “noise” between both Frontier analyses accurately reflects the complaints received about the lack of connectivity and confirms the analysis completed by ORCA. The current Wi-Fi system does not provide connectivity at an acceptable level and only very slightly provides some connectivity in the one block area of Curtis to Elrod on South Broadway. Due to the results of the analysis performed by both Frontier and ORCA, the downtown Wi-Fi billing with ORCA was ended in September 2014 in an effort to not expend General fund resources when there were not any services provided to the community.

In May 2014 Comspan approached the City regarding the City’s downtown Wi-Fi system and staff requested their recommendation for an operable system, attached. Comspan replied with the recommendation to disband the downtown Wi-Fi system due to the improvements in technology, Wi-Fi availability on smartphones, iPad, laptops such that end users no longer seek out Wi-Fi locations.

In speaking with each of the providers, if the City chooses to retain a downtown Wi-Fi system, the providers recommended replacing the system with a more sophisticated system which would include at a minimum different hardware and additional access points to locate the equipment. This new system would add access points located symmetrically throughout the downtown area to offset the interference with the other networks. These additional access points could be a combination of city owned locations and most likely leased sites from privately owned buildings. Constructing this type of system is compounded in that each access point would require electrical connections, which could increase the number of electric bills received by the City, and expense of maintaining leases/easements to locate equipment.

The response to the informal request for a recommendation from Comspan, ORCA, and Frontier resulted in a mixed response of possible scenarios. The following is a summary of options provided:

Provider	Estimate	Proposal
ORCA	\$14,089.68	Initial investment to provide “adequate” connectivity, not throughout the downtown area, see attached map. Gap areas would still exist. Ongoing monthly costs would be maintenance, additional leases for locating equipment, increase in electric billings, and the City would own the equipment.
Comspan	No estimate provided	See attached letter. Recommended disbanding system, need of public Wi-Fi not justified from their business perspective.
Frontier	Lease a system @\$1,900 per month for 5 years = \$114,000	This is a leased system with a minimum cost per month. Additional costs to lease property to locate equipment and an increase in electric billings.

ADVANTAGES:

This is dependent upon which option is selected.

DISADVANTAGES:

There are no funds budgeted for a new Wi-Fi system. This could potentially be an Urban Renewal project, however it is not listed as a priority for the limited funds in the Downtown Urban Renewal budget.

BUDGET:

There are no funds budgeted for a new Wi-Fi system. The current inoperable system without any upgrades of equipment was approximately \$4,700 per year and was funded from the General fund.

RELATED CITY GOAL:

Finance: Ongoing Activities Aimed at Achieving Goal Priorities - Exercise fiscal responsibility and keep the City Council actively involved in monitoring the financial health of the City.

RECOMMENDATION:

If it pleases the Council, provide staff direction on whether to seek formal proposals for a downtown Wi-Fi system or disband the existing system.

July 3, 2014

Ms. Susanne Baker, Finance Director
City of Coos Bay
500 Central Avenue
Coos Bay, Oregon 97420

RE: Municipal Wireless Project

Dear Ms. Baker:

During our internal discussions regarding the continued support to the City of Coos Bay for issues related to voice, data, managed services and the like, we discussed the technical requirements of a local wireless network and the current deficiencies of the existing service. We certainly can address the technical needs, which include additional options not previously considered such as security, time limits and network congestions. We can recommend solutions; however, before we do so, we would like to revisit the notion or original intent of providing such as wireless service.

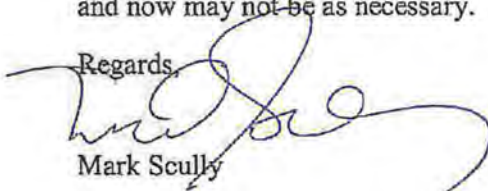
First, since you first installed the existing system, there have been significant upgrades to the local mobile wireless network. Most serving towers in the area now have fiber-optic cable services directly to each tower, which is a prerequisite for mobile carriers providing 4G/LTE Services. More specifically, this is a significant recent change that allows high-speed data to mobile devices and mobile-adapted laptop computers.

Second, during the past few years, travelers overwhelmingly favor smart phones and tablets for their mobile data needs, not necessarily trying to find hotspots to serve their laptops. Smart phones and tablets are connected to mobile networks by design and are ubiquitous now over large geographical areas. Conversely, laptops are mostly dependent on Wi-Fi hotspots.

Third, since the applications for mobile devices have increased dramatically, most notably for high bandwidth video services, the data requirements to provide an acceptable service to transient users is much higher than just a year ago. This is causing a general unhappiness with other free wireless services, especially courtesy Wi-Fi service at airports and coffee shops, since multiple users for video and other higher bandwidth issues, such as moving large files such as photos and streaming music services. This trend will continue.

In summary, we would encourage that we revisit the original purpose of the city's decision to offer a free Wi-Fi service. We may find that the technology that most tourist or other transient users no longer require a localized Wi-Fi connection and the increasing cost of providing the necessary backbone bandwidth may now be a cost that the city may not want to incur, or have us continuously manage over time. The three issues above are recent changes that should be considered before we engineer a sustainable solution that has sufficient bandwidth and utilization so the service performs well. Ill-configured hot spots are common in many public place since subsequent investments have not been made, and now may not be as necessary.

Regards,



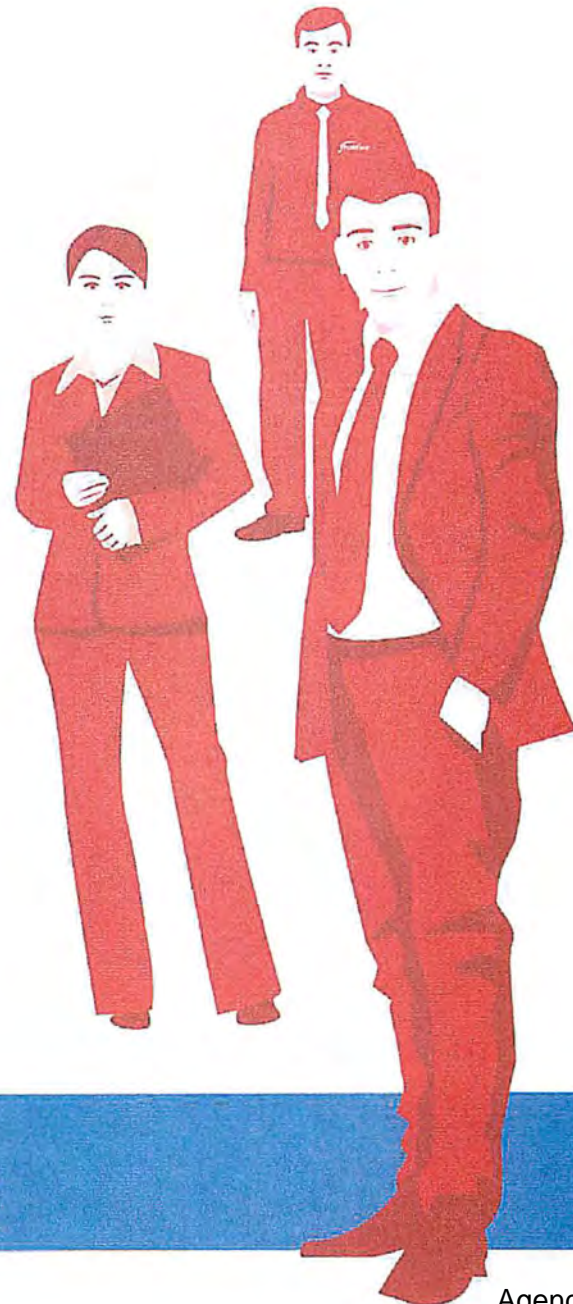
Mark Scully

Open WiFi Network Proposal For:

City of Coos Bay

August 29, 2014

Quote Number: v1



Darren Ford

Account Executive

Phone: 541.269.3472

Mobile: 541.297.7920

Email: Darren.Ford@ftr.com

Frontier Communications Corporation
276 LaClair St. | Coos Bay, OR | frontier.com

Partner with Frontier.

Frontier offers end-to-end data, voice and video solutions to businesses of all sizes. We're committed to providing next-generation technology that's flexible, reliable and ready to grow with your business. And you'll enjoy the convenience of having one single, responsive source for all your communications needs. Choose from our fully integrated product portfolio, including:

- Ethernet Solutions
- Dedicated Internet Access
- Managed IP VPN
- VoIP (hosted and premised based)
- Communications & Network Equipment
- Optical Transport Services
- Managed IT Services
- Audio, Web & Video Conferencing
- Wireless Data Access/Wi-Fi
- Data Backup & Recovery
- Business High-Speed Internet
- Local & Long-Distance Service

Your Business Edge Specialist has created a custom-designed plan based on your needs and budget — all backed by our 24/7 expert tech support. Plus, we monitor the Frontier network to ensure that your business communications run without interruption. It's all part of our dedication to helping you be successful.

Quote Number: v1

- ✓ State-of-the-art network
- ✓ 24/7 expert tech support
- ✓ 100% U.S.-based workforce
- ✓ Global capabilities
- ✓ Customized solutions
- ✓ Comprehensive product portfolio

This proposal is confidential and valid for 30 days from the date issued. It contains proprietary information and the contents contained herein are not to be shared with parties other than the customer and its employees named in this document. This document is confidential and the property of Frontier Communications Corporation.



Executive Summary.

Frontier has more than 75 years of experience, serves over 250,000 business customers, and supports our customers with a dedicated team of locally based professionals. Our extended reach across 27 states and portfolio of equipment, products, and services provide a one-stop solution for commercial communications. Leveraging our coast-to-coast data network we deliver reliable, scalable solutions at competitive prices. To summarize:

Your company's current communications capabilities include:

Current Capabilities for open WiFi are provide by ORCA.

Your immediate and future communications needs are:

To replace your existing open WiFi network serving downtown Coos Bay with a more reliable and robust WiFi network.

Our recommendations based on the needs defined above include:

A standard 802.11n WiFi network supported by our diverse Ethernet network and comprised of new outdoor radios, service controllers, switches and load balancers.

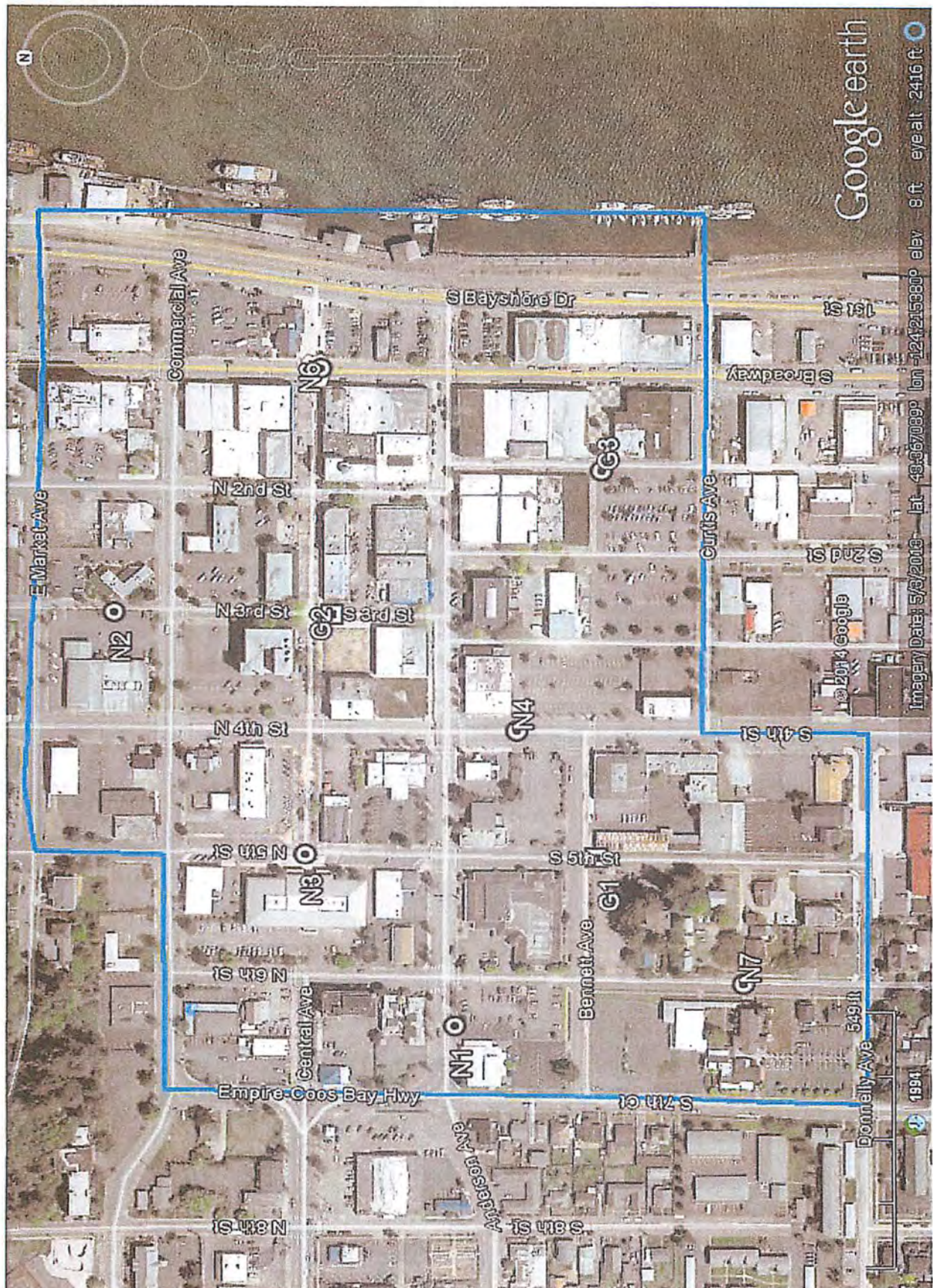
Frontier is pleased to present this proposal to CUSTOMER. The services set forth in this proposal will be provided by Frontier Communications and its affiliates (collectively referred to herein as "Frontier"). Frontier does not consider the proposal itself to be a legally binding offer to contract. Pricing contained within this document is budgetary, and a site survey may be required prior to final quote. This quote is valid for up to thirty days from the date hereof. Taxes and surcharges are

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Quote Number: v1

Frontier Communications (NASDAQ: FTR) provides data, voice, video and equipment solutions to businesses of all sizes. We pride ourselves on our unmatched customer service, locally based tech support, customized solutions and commitment to help our customers succeed.

Frontier
BUSINESS EDGE™



Product and Service Quote

Customer: Susanne Baker
The City of Coos Bay
500 Central Ave
Coos Bay, OR 97420
sbaker@coosbay.org
541.269.8915

Date: 8/29/2014
Prepared By: Darren Ford
Phone: 541.297.7920
Email: darren.ford@ftr.com

Provide a standard open WiFi network for downtown Coos Bay to replace existing WiFi solution.

Description:

Quantity	Description	Contract Term (in months)	One-Time Charge	Monthly Charge
1.00	Open WiFi Network - Downtown Coos Bay	60		\$1,900.00
	Equipment			
	Project Management			
	Installation and testing			
	Labor			
	Internet circuits			
TOTAL				\$1,900.00

Comments: City wide WiFi users will be limited to 1Mbps symmetrical bandwidth per user.
Network can support up to 100 concurrent users.
Open Authentication will be allowed with an Acceptable Use Policy Page will be in place, per your requirement.
Any power requirements will be the responsibility of the City

Thank you for the opportunity to quote this business!

Frontier is pleased to present this proposal. The service set forth in this proposal will be provided by Frontier Communications Corporation. Frontier does not consider the proposal itself to be a legally binding offer to contract. Final installed price may vary based on site survey and other factors. This quote is valid for up to thirty days from the date hereof. Taxes and surcharges are not included.

This proposal is confidential and contains proprietary information. The contents contained herein are not to be shared with parties other than the customer and employees named in this document. This document is confidential and the property of Frontier Communications Corporation.

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Susanne Baker

From: Karl Kennedy <karlkennedy@orcacomm.com>
Sent: Monday, September 08, 2014 12:48 PM
To: Susanne Baker
Cc: Rodger Craddock; David Warrick
Subject: ORCA WiFi proposal
Attachments: City of CB WiFi Upgrade Cost Estimate 9-8-14.pdf; Coos Bay WiFi upgrade ESTIMATED coverage area 9-8-14.pdf

Susanne,
Please find ORCA's response to your request for a projected cost to upgrade and improve the City of Coos Bay's wifi network. Included are the terms and conditions that are of significance to this project.

I have also included a drawing with the estimated coverage area. The areas in PINK are our best and most accurate prediction of ADEQUATE coverage. The only way to get this coverage is by obtaining permission from building owners to attach and use the buildings we have identified. The City currently has agreements with a couple of owners, however to meet the needs of the City, additional access points on the buildings and at lower attachment locations will be required in addition to new sites. There are many factors that are impacting the current system the most relevant which are: age of the system, low number and position of current access points, and interference of other systems. We believe that this solution will mitigate all those issues except interference.

Feel free to contact either myself or David Warrick with any questions.

Thank you,

Karl Kennedy
President
Tribal One Broadband Technologies, LLC
dba ORCA Communications
(541) 756-3899

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WiFi Equipment, Installation Estimate for:
City of Coos Bay
Finance Director
600 Central Ave
Coos Bay, OR 97420
541-269-1181 ext. 2244

ORCA Point of Contact:
David Warrick
3201 Tremont
North Bend, OR 97459
541-756-3899
support@oreacomm.com

OPTION 1		QTY	UNIT PRICE	TOTAL PRICE	PART/MODEL #	COMMENTS
Wireless Equipment						
Access Point Radio		18	\$95.00	\$1,710.00		
Access Point Router/Gateway		1	\$574.68	\$574.68		
10dBi Omni Directional		4	\$192.00	\$768.00		
120 Degree 15dBi Directional w/cable		13	\$135.00	\$1,755.00		
Power over Ethernet injector(included)		18	\$19.00	\$342.00	18023AF-OD	
8-port switch		11	\$210.00	\$2,310.00	SF-302-08	
LX/LH SFP		22	\$90.00	\$1,980.00		
Installation		1	\$4,500.00	\$4,500.00		
Shipping				\$150.00		
TOTAL				\$14,089.68		

This project involves replacing all radios, Router/Gateway and upgrading antennas using the existing deployment locations with an additional 5 locations and increasing the number of deployed access points from 5 to 17.

TERMS and CONDITIONS

Pricing based on quantities listed in quote and is subject to change if order is placed after Oct 31, 2014. This is a COST ESTIMATE ONLY, actual pricing may change based on Customer requirements and site visits.

Pricing valid only for end-user listed in header of this quote

"Standard Terms and Conditions of Sale" required with purchase and available upon request

Additional locations subject to approval of right to use by Owner. Additional costs for right to use not estimated in this solution.

Coverage in the area will be affected by building materials and existing and future wireless networks being utilized by others. Coverage and service availability NOT GUARANTEED.

ORCA Communications certifies that all equipment sold to the International City of Coos Bay as unlicensed 2.4GHz wireless equipment using the 802.11a,b, or n protocols. Actual Internet Access throughput rates (aka "speed") will be determined by multiple factors including, but not limited to: service level of internet service selected by network owner, cloud server/web site service level and number of users on that cloud server/website, number of simultaneous users on the local wireless network, number of remote users accessing internet at any given time, real time wireless frequency interference, and user device/equipment, end user concurrent applications, location of end user with respect to network layout, environmental conditions such as temperature.

