

Professional Services Proposal

Point to Point

Wireless Implementation

City of Columbus

589 West Nationwide Boulevard

120 Marconi Boulevard

Columbus OH

Oct 13, 2016

Confidential

Network Dynamics Inc.
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Quote #1605-04-21013

Network Dynamics Inc.
Corporate Headquarters
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Overview of Customer Requested Services:

Wireless Point to Point Link Implementation

NDI will install a Cisco wireless Point to Point Link with a set of Cisco 1532E outdoor access points in bridging mode. The Site Survey has already confirmed line of sight between the two buildings, and bridge would be viable. The link distance is approximately 3960 Ft. The 120 Marconi Boulevard end is located on last floor in the Police HQ Building and the 589 West Nationwide Boulevard end is located on the roof of the Control building.

Customer: (Ordered and invoiced for services)

Customer Name: City of Columbus
Customer Address:
Primary Contact Name: William Rogers
Primary Contact Phone:
Primary Contact Email: wfrogers@columbus.gov

Service Location(s): (Receives the Service)

Site 1 - 120 Marconi Boulevard, Columbus, OH
Company Name:
Company Address:
Site 2 - 589 West Nationwide Boulevard, Columbus, OH
Company Name:
Company Address:

Scope of Work (SOW):

Wireless Implementation for Outdoor Point to Point Network: This is to install a PTP link between 120 Marconi Boulevard and 589 West Nationwide Boulevard.

Project Overview

The work will include installing two Cisco wireless bridges new Cisco 1532E Bridges. This includes installing the 1532 Bridges, directional antennas, cables, and lightning protection for the units at each end. All other hardware and licenses are expected to be available at the time of the installation, including switches with available ports. Access to the wireless controller that will support this link will be provided by the City of Columbus for configuration.

Point to Point Link Description



Link Profile:

Distance: 3960 Feet

Elevation:

727 Feet 120 Marconi Boulevard (plus 300 feet Antenna Height above ground level)

718 Feet 589 West Nationwide Boulevard (plus 30 feet Antenna Height above ground level)

Terrain: Mostly constant in elevation and with some wooded areas.

Line of Site does exist between the two sites.

Customer Responsibilities

- Provide addresses or GPS coordinates of sites.
- Provide any design documentation that exists
- Provide drawings/schematic/blueprints in electronic format.
- Provide a lift and ladders if found to be needed
 - Provide access to all mounting locations
- All hardware to be onsite and available prior to start of services.
- Provide information on existing wireless bridge radios prior to start of services
- Provide access to the Wireless Controller for configuration purposes.
- Customer is responsible for internal networking equipment – switches, routers, patch panel, etc.
- Customer will have switches in place at each location with available ports.
- It is assumed network closets are within 150' of mounting locations with existing pathways
- Customer may provide assistance with any wall/roof penetration that may be needed.
 - Provider will use existing penetrations and pathways
- Provide a safe working environment for engineers.

Assumptions

- NDI will have full access to all mounting locations for installation.
- Work to be completed during standard business hours (8am-5pm) M-F.
 - If weekend or evening work is required, a change order will be needed.
- Work is planned to be completed in consecutive days by a team of technicians. If additional services or unforeseen circumstances occur, NDI will require a change order for additional time to complete the work.
- The services are intended to take place in consecutive days. If delays occur or the Customer prefers to break the work out over the course of multiple weeks, a change order will be required.
- Customer is responsible for supplying/ordering all hardware including:
 - Radios, lightning protection, mounts, etc.
 - Provider will supply cat5 cables, if necessary
- All hardware and licenses are to be onsite and available prior to start of services.
- NDI is not responsible for network failure or performance issues due to weather related events such as heavy/gale force winds, tornados, torrential rain or snow, lightning strikes, etc.
- Line of sight has been established and verified by the site survey
- Provide make/model of existing radios/links
- The Customer will provide a primary contact to interact with while onsite
- NDI will bill the customer for the actual engineering time incurred for delays caused that are not under the control of NDI and not in the scope of this statement of work. A few examples include:
 - Customer does not have necessary network hardware in place prior to start of services
 - If Provider is not permitted access to required areas during installation
 - If hardware or licenses are not available or onsite at start of installation services
 - The customers network configuration is flawed which impacts the ability of NDIs Engineers to perform their scope of work as scheduled. A change order will be required if the customer requests NDI to remediate the configuration.
 - Dead on arrival equipment or faulty equipment where staging is not part of the scope of work.
 - No access to mounting locations
 - The Customer does not sign off on services before installation team leaves site

- Weather, unsafe working environments, infestation, etc.
- Hardware subject to manufacturer's warranty.
- Provider will warranty the labor for a period of 30-days
- Provider may bill the customer actual incurred costs plus a \$1000 idle engineering fee for scheduled work cancellations occurring 72 hrs. or less from the agreed upon arrival date or delays or stoppage of work lasting more than 2 hrs. due to customer unpreparedness that is out of NDI control.
- This proposal is based on the assumption of two engineers working in consecutive days
- All work intended to be performed in consecutive days and weeks without breaks or delays
 - If delays occur or scheduling has been delayed, NDI reserves the right to invoice for services incurred on a monthly basis.
- All Project requests and changes must be communicated and negotiated through NDI's Project Manager in writing. NDI's Deployment Engineers are specifically instructed not to accept Customer requests that have not been documented and communicated to them through The Project Manager.
- All services to be scheduled through NDI's Project Management team.
- NDI will hold no responsibility for any changes made "after" releasing the system to the Customer. If any errors occur from Customer changes, a Change Order must be written for associated labor and travel to correct the problems.
- Pricing includes project management
- No special security restrictions or time restrictions will be in place.
- This quotation and services is relying on the accuracy of information provided to us by the Customer. Inaccuracy, inconsistency, conflict or ambiguity of information provided to NDI may result in an adjustment in costs, including additional payment to GCI, for services as defined in this agreement.
- NDI is permitted to take digital photographs of the access point locations during the survey if necessary. Each and every photograph is subject to City of Columbus's approval.
- All outdoor services scheduled weather permitting.
- All Project requests and changes must be communicated and negotiated through GCI's Project Manager in writing. Engineers are specifically instructed not to accept customer requests that have not been documented and communicated to them through a Project Manager.

Proposed Pricing:

Pricing for the proposed goods and Professional services are valid for 60 Days from the date of this proposal.

All terms and conditions in our UTC for Engineering Services apply.

Descriptions	Price	Units	Extended Price
CCNP Wireless Engineer	\$105.00	56 hours	\$ 5,880.00
CCIE Wireless Engineer	\$125.00	10 hours	\$ 1,250.00
Project Manager	\$ 95.00	2 hours	\$ 190.00

Services Total : \$7,320.00

Cisco Equipment:

Qty	Part # Provided	Description	UNIT LIST	Discount	Discount Price	EXTENDED PRICE
2	AIR-CAP1532E-A-K9	802.11n Low-Profile Outdoor AP, External Ant., A Reg Dom.	1,495.00	50%	\$ 747.50	\$ 1,495.00
2	S1G3K9W7-15303JA	Cisco 1530 Series IOS WIRELESS LAN	0.00	50%	\$ -	\$ -
2	SWAP1530-CMB-A1-K9	Cisco 1530 Series Combined Unified & Autonomous SW	0.00	50%	\$ -	\$ -
2	AIR-ACC1530-PMK1=	Standard Pole/Wall Mount Kit for AP1530 Series	99.00	28%	\$ 49.50	\$ 99.00
2	AIR-ANT5114P2M-N=	5 GHz 14 dBi Directional Antenna , 2 port , N connectors	599.00	50%	\$ 299.50	\$ 599.00
2	AIR-PWRINJ1500-2=	1520 Series Power Injector	249.00	50%	\$ 124.50	\$ 249.00
2	AIR-PWR-CORD-NA	AIR Line Cord North America	0.00	50%	\$ -	\$ -
4	AIR-ACC245LA-N=	2.4 and 5 GHz Lightning Arrestor, N Connector	209.00	50%	\$ 104.50	\$ 418.00
4	AIR-ANT2547V-N=	2.4 GHz 4dBi/5 GHz 7dBi Dual Band Omni Antenna, N connector	299.00	50%	\$ 149.50	\$ 598.00

Note: (Where Applicable)

Price does NOT include shipping

"Net 30" Terms ONLY with approved credit

This quote valid only for 90 calendar days from issuance

Subtotal	\$3,458.00
Shipping	TBD
Tax	TBD
	\$3,458.00

Provided pricing is according the City of Columbus Contract FL005447

Proposed Methodology:

NDI uses a Best Practices approach to delivering services that includes: Discovery call with the End User customer to ensure our Engineers have a complete understanding of the Customer's business objectives. We then Define the Scope of Work (SOW) to properly set expectations for the Customer and NDI; Once defined, our Project Manager and Wireless Engineer will Develop and communicate our action plan; and lastly we will Deliver the services based on the SOW and the mutually agreed to action plan that will produce Site Survey Report documentation in an electronic format.

The NDI workflow includes:

- Prepare and submit a Proposal to **City of Columbus**
- Review and Accept City of Columbus Purchase Order
- Process the order and assign a Project Manager
- Conduct a "Discovery" call with PM, Wireless Engineer and the End User to set expectations
- Define activities based on expectations and resource availability
- Develop an action plan and timeline
- Deliver services based on SOW and expectations
- Survey **City of Columbus** to determine their level of satisfaction and quality of services rendered

Successful services are dependent upon the Customer's full and timely cooperation with the assigned Project Manager and Wireless Engineer. Network documentation along with accurate & complete information provided by the Customer is essential. Customer participation is critical in many areas and it's important that the Customer assign a Single Point of Contact (SPOC) who will assist NDI Engineers with obtaining Customer unique network information, access to the network and/or physical access to all service locations without delay.

NDI uses a 4-step process: Discover, Define, Develop and Deliver to ensure Customer satisfaction. During the "Discovery" portion of the project, NDI Wireless Engineers will rely on the SPOC to participate in a Q&A session where our Engineers will derive as much of the Customer unique information as necessary to complete their work. The SPOC may need access to key personnel within the Customer's organization who can respond to questions from the NDI Wireless Engineer.

NDI's Wireless Survey practices are tried and tested and are in accordance with Industry and Vendor's Best Practices. The sophistication of the process increases as multiple applications (Data + Voice + Video + High Capacity) are included in the network design. In general NDI performs the following due diligence in preparation for conducting a Wireless Survey of any type:

- Evaluate the wireless specification in regards to coverage, power, and density and overlap requirements
- Understand application and network usage to ensure the design meets the application(s) requirements
- Understand the hardware components to be installed and survey with similar hardware
- Design the physical characteristics of each installation to be architecturally compatible with each location
- Use installation techniques / materials to obscure equipment, antenna, cable, and power runs as requested
- Ensure facility has a lift (if needed) and required number of operators and escort during site survey or make appropriate arrangements otherwise. These resources must be dedicated and available throughout the survey

NDI uses the Air Magnet Surveyor Pro 8.X site survey along with other tools to perform New Network and Post Installation surveys. New Network Survey is used to design a wireless network and a Post Install survey is used to verify that the RF Network that was installed is providing coverage as specified during the New Network Survey.

Resource Requirements & Scheduling:

Upon receipt of an executed "Authorization to Proceed" document (Valid Purchase Order or signed Quote Proposal), a NDI Project Manager will contact City of Columbus to determine a mutually acceptable starting date for the service engagement, and will assign an appropriate resource(s) to provide the services described herein. The Project Manager will ensure the documentation including all authorizations, Floor Plans, and the survey questionnaire are complete. Any delay in providing the documentation can delay the proposed start date. NDI will usually not guarantee a resource earlier than 10 Business days after receiving the "Authorization to Proceed" document. If City of Columbus requests that a NDI resource(s) be deployed sooner, an expedite fee may be implemented as well as actual travel and shipping expenses.

NDI will supply manpower and equipment for services specified in this proposal providing the Customer and its facilities are completely ready prior to the scheduled service delivery date. Customer must affirm that all special items such as ladders over 8 feet, lifts or bucket truck to be made available for use by NDI Engineers.

On-Site Support limitations

Activities such as, but not limited to, the following are excluded from onsite support:

- Second or subsequent on-site visits due to the lack of any form of site readiness
- Activation or Service for any product other than those described in this proposal
- Any services not clearly specified in this proposal or by any supporting SOW
- Services provided outside of normal, local business hours may be subject to additional charges, unless originally purchased and defined in this proposal

Change Control:

NDI manages the quality of services by initially requesting the End User to "Sign-Off" that the services met their expectations prior to Engineer leaving site. This same practice is followed when services are delivered off-site. The difference for an off-site service is that NDI emails the "Sign-Off" to the End User, who acknowledges the services were complete. If the customer indicates a lack of satisfaction with the services delivered then NDI will escalate to a senior Wireless Engineer to assist in resolving any open issues.

NDI will forward a customer satisfaction survey to the End User and ask them to participate in NDI's customer satisfaction survey. Survey results are reviewed to ensure customer satisfaction and to learn if the customer provided any feedback to improve the delivery process. Negative results will cause a member of the management team to call the customer and discuss the customer's concerns and resolve any open issues.

Upon request for or in event of circumstances requiring Out Of Scope (OOS) work NDI will provide City of Columbus with a Change Request Form (see attachment A).

NDI will respond to Out of Scope requests with a quotation and/ or a Change Request Form. This form will be used to administratively track changes to the initial Statement of Work sold to the customer and any additional charges resulting from those changes. NDI will present this change request form to the customer to gain approval to proceed. If the Change Request results in a change in price, the customer will agree to pay NDI for any additional charges incurred as a result of changes to this proposal.

During the course of this service engagement, NDI will alert City of Columbus of any changes in scope required. Such changes could include surveying or installation in other areas than those defined in this document, changes in technology to be deployed, facility access or delays caused by the client in the performance of our services or environmental or hazardous working conditions. If NDI determines that a change order is required, NDI will seek

and get approval from City of Columbus before performing any services beyond the scope defined in this document.

If City of Columbus does not grant approval for any change order requirements, documentation and design deliverables will be limited to the in-scope activities defined in this agreement.

Report Deliverables:

All report documentation will be delivered within 10 Business days of the completion of the service to **City of Columbus**. The report documentation will be delivered via Email if appropriate or via FTP. NDI maintains a FTP server for documentation delivery and retrieval. Authorized deliverables will be identified in the SOW section.

Signature Acceptance Page

By signing below, City of Columbus agrees to the terms and conditions as outlined in Cisco Engineering UTC

Network Dynamics Inc.

SIGNATURE

NAME

TITLE

DATE

City of Columbus

SIGNATURE

NAME

TITLE

DATE

Attachment - A

Change Control Form

Project Name: _____ **Change Number:** _____

Requested By: _____ **Date of Request:** _____

Presented To: _____ **Date Received:** _____

Change Name: _____

Describe the change requested: _____

Reason for Change: _____

Effect on Deliverables (including a list of any affected deliverables): _____

Effect on Organization: _____

Effect on Schedule (including Estimated Completion Date for this change): _____

Effect on Project Cost: _____

Item Description	Hours		Dollars	
	Reduction	Increase	Reduction	Increase
Resource Hours - PM		0		\$ 0.00
		0		\$ 0.00
Total Net Change in Cost:			\$ 0,000.00	

Effect of NOT Approving this Change: _____

Reason for Rejection (if applicable): _____

Client Title: _____

☐ **Approved**

☐ **Rejected**

Signature: _____ **Date:** _____

Printed Name: _____ **Title:** _____