



**CITY OF PLANO  
COUNCIL AGENDA ITEM**

<b>CITY SECRETARY'S USE ONLY</b>				
<input type="checkbox"/> Consent <input type="checkbox"/> Regular <input type="checkbox"/> Statutory				
Council Meeting Date:		11/22/2010		
Department:		Technology Services		
Department Head		David Stephens		
Agenda Coordinator (include phone #): <b>Amy Powell X7342</b>				
<b>CAPTION</b>				
To approve a contract for the purchase of microwave backhaul links to the new Emergency Operations Center, in the amount of \$314,775 from Scientel Wireless, LLC, through an existing contract with the Houston-Galveston Area Council (HGAC), and authorizing the City Manager to execute all necessary documents. (HGAC Contract No. CW10-09)				
<b>FINANCIAL SUMMARY</b>				
<input type="checkbox"/> NOT APPLICABLE <input checked="" type="checkbox"/> OPERATING EXPENSE <input type="checkbox"/> REVENUE <input type="checkbox"/> CIP				
FISCAL YEAR: <b>2010-11</b>	<b>Prior Year (CIP Only)</b>	<b>Current Year</b>	<b>Future Years</b>	<b>TOTALS</b>
Budget	0	1,200,000	0	<b>1,200,000</b>
Encumbered/Expended Amount	0	-549,681	0	<b>-549,681</b>
This Item	0	-314,775	0	<b>-314,775</b>
BALANCE	0	335,544	0	<b>335,544</b>
<b>FUND(S):     TECHNOLOGY FUND (62.62350)</b>				
<b>COMMENTS:</b> Funds are available in the 2010-11 Technology Fund budget for the purchase of two microwave backhaul links for the new data center at the EOC facility. The balance of funds will be used for other items required for the completion of the City's wireless backhaul redundant ring project.				
<b>STRATEGIC PLAN GOAL:</b> Providing business continuity with a redundant virtual environment in case of the loss of business center or command center relates to the City's Goal of "Financially Strong City with Service Excellence".				
<b>SUMMARY OF ITEM</b>				
Technology Services recommends Council approve an expenditure for two microwave backhaul links to the new Emergency Operations Center for the purpose of providing a redundant microwave link into the City's wireless backhaul redundant ring. This additional redundancy will help the City make critical network connection to this facility in emergency situations. This work will be performed by Scientel Wireless, LLC through their contract with the Houston-Galveston Area Council, in the amount of \$314,775. The City is authorized to purchase from the State Contract list pursuant to Section 271 Subchapter F of the Local Government Code and by doing so satisfies any State Law requiring local governments to seek competitive bids for items. (HGAC Contract No. CW10-09).				
List of Supporting Documents: Staff Memo and Contract			Other Departments, Boards, Commissions or Agencies	

# Interoffice Memo

Date: 11/03/10  
To: David Stephens, Director Technology Services  
Cc:  
From: Chester M. Helt, Infrastructure Manager  
RE: Plano EOC Backhaul

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This agenda item is for Scientel Wireless, LLC to provide two microwave backhaul links to the new Emergency Operations Center for purposes of providing a redundant microwave link into the City's wireless backhaul redundant ring. This proposal also includes optimizing the overall microwave ring and moving equipment from the Parkwood and Jupiter towers onto the new Communications and School House radio communication towers. These moves will provide a more reliable backhaul and allow us to optimize our existing wireless mesh network.

In addition to the improvements of our existing microwave backhaul ring, the new redundant link and tower at the new emergency operations center will provide us with a redundant connection to the City's network. Currently we are connected to the City's network using the City's OC-48 S.O.N.E.T. ring provided by Verizon. This additional redundancy will help us make the network connection to this facility available in the case of emergency.

Scientel is a Plano firm which currently provides maintenance for our Wireless network and the microwave link. We recommend purchasing this material and installation from Scientel Wireless, LLC from their HGAC cooperative purchasing contract number CW10-09 for the not to exceed price of \$ 314,775.00.

**CONTRACT BY AND BETWEEN  
CITY OF PLANO AND SCIENTEL WIRELESS, LLC  
FOR MICROWAVE BACKHAUL LINKS TO EMERGENCY OPERATIONS CENTER**

**THIS CONTRACT** is made and entered into by and between **SCIENTEL WIRELESS, LLC**, whose address is 948 Springer Drive, Lombard, IL, hereinafter referred to as "Contractor," and the **CITY OF PLANO, TEXAS**, a home rule municipal corporation, hereinafter referred to as "City," to be effective upon execution of this Contract by the Plano City Manager or his duly authorized designee.

For and in consideration of the covenants and agreements contained herein, and for the mutual benefits to be obtained hereby, the parties agree as follows:

**I.  
SCOPE OF SERVICES**

Contractor shall provide two microwave backhaul links to the new emergency Operations Center. These services shall be provided in accordance with this Contract and with the Houston-Galveston Area Council Contract No. CW 10-09, a copy of which is incorporated herein by reference in its entirety as if it were recited here verbatim and which is on file and available for inspection in the City of Plano Technology Services Department. This Contract consists of:

- (a) This Contract;
- (b) Houston-Galveston Area Council Contract No. CW 10-09 on file with the City of Plano Technology Services Department;
- (c) Scientel LLC's Statement of Work (Exhibit "A");
- (d) Insurance Requirements and Certificate of Insurance (Exhibit "B");and
- (e) Affidavit of No Prohibited Interest (Exhibit "C").

In the event there is a conflict in interpretation or terms, the documents shall control in the order listed above. These documents shall be referred to collectively as "Contract Documents."

**II.  
PAYMENT**

Payments hereunder shall be made to Contractor following City's acceptance of the work and within thirty (30) days of receiving Contractor's invoice for the products and services delivered. Total compensation under this contract shall not exceed the sum of **THREE HUNDRED FOURTEEN THOUSAND SEVEN HUNDRED SEVENTY-FIVE AND 00/100 DOLLARS (\$314,775.00)**.

**III.  
TIME OF COMPLETION**

Contractor agrees and covenants that all work hereunder shall be completed by February 28, 2011.

**IV.  
DESCRIPTION OF SERVICES**

Contractor will provide the services described in the Contract Documents and Exhibit "A" attached hereto. At City's request, Contractor may also provide additional services under this Contract at Contractor's then-applicable rates for such services or goods under the Houston-Galveston Area Council Contract No. CW 10-09 or any additional contract addendums as executed by the Plano City Manager or his duly authorized designee.

**V.  
CITY CONTACT**

If requested by Contractor, City will provide Contractor with designated points of contact (list of names and phone numbers) that will be available twenty-four (24) hours per day, seven (7) days per week, and an escalation procedure to enable City's personnel to maintain contact, as needed, with Contractor.

**VI.  
PROTECTION AGAINST ACCIDENT TO EMPLOYEES AND THE PUBLIC**

Contractor shall at all times exercise reasonable precautions for the safety of employees and others on or near the work and shall comply with all applicable provisions of Federal, State, and Municipal safety laws.

**VII.  
TIME AND PLACE OF SERVICE**

Service will be provided at the location specified in the Contract Documents. When Contractor performs service at City's location, City will provide Contractor, at no charge, a non-hazardous work environment with adequate shelter, heat, light, and power and with full and free access to the Equipment. City will provide all information pertaining to the hardware and software elements of any system with which the Equipment is interfacing so that Contractor may perform its Services. Unless otherwise stated in this Contract, the hours of Service will be 8:30 a.m. to 4:30 p.m., local time, excluding weekends and holidays.

**VIII.  
COMPLIANCE WITH APPLICABLE LAWS**

Contractor shall at all times observe and comply with all directly applicable Federal, State and local laws, ordinances and regulations including all amendments and revisions thereto, which affect the work. If Contractor observes that the work is at variance therewith, Contractor shall promptly notify City in writing.

**IX.  
INDEMNIFICATION AND HOLD HARMLESS**

**THE CONTRACTOR AGREES TO DEFEND, INDEMNIFY AND HOLD THE CITY AND ITS RESPECTIVE OFFICERS, AGENTS AND EMPLOYEES, HARMLESS AGAINST ANY AND ALL CLAIMS, LAWSUITS, JUDGMENTS, FINES, PENALTIES, COSTS AND EXPENSES FOR**

Service Contract

Page 2

PERSONAL INJURY (INCLUDING DEATH), PROPERTY DAMAGE, INTELLECTUAL PROPERTY INFRINGEMENT CLAIMS (INCLUDING PATENT, COPYRIGHT AND TRADEMARK INFRINGEMENT) OR OTHER HARM OR VIOLATIONS FOR WHICH RECOVERY OF DAMAGES, FINES, OR PENALTIES IS SOUGHT, SUFFERED BY ANY PERSON OR PERSONS, THAT MAY ARISE OUT OF OR BE OCCASIONED BY CONTRACTOR'S BREACH OF ANY OF THE TERMS OR PROVISIONS OF THIS CONTRACT, VIOLATIONS OF LAW, OR BY ANY NEGLIGENT, GROSSLY NEGLIGENT, INTENTIONAL, OR STRICTLY LIABLE ACT OR OMISSION OF THE CONTRACTOR, ITS OFFICERS, AGENTS, EMPLOYEES, INVITEES, SUBCONTRACTORS, OR SUB-SUBCONTRACTORS AND THEIR RESPECTIVE OFFICERS, AGENTS, OR REPRESENTATIVES, OR ANY OTHER PERSONS OR ENTITIES FOR WHICH THE CONTRACTOR IS LEGALLY RESPONSIBLE IN THE PERFORMANCE OF THIS CONTRACT. THE INDEMNITY PROVIDED FOR IN THIS PARAGRAPH SHALL NOT APPLY TO ANY LIABILITY RESULTING FROM THE SOLE NEGLIGENCE OF THE CITY, AND ITS OFFICERS, AGENTS, EMPLOYEES OR SEPARATE CONTRACTORS. THE CITY DOES NOT WAIVE ANY GOVERNMENTAL IMMUNITY OR OTHER DEFENSES AVAILABLE TO IT UNDER TEXAS OR FEDERAL LAW. THE PROVISIONS OF THIS PARAGRAPH ARE SOLELY FOR THE BENEFIT OF THE PARTIES HERETO AND ARE NOT INTENDED TO CREATE OR GRANT ANY RIGHTS, CONTRACTUAL OR OTHERWISE, TO ANY OTHER PERSON OR ENTITY.

CONTRACTOR AT ITS OWN EXPENSE IS EXPRESSLY REQUIRED TO DEFEND CITY AGAINST ALL SUCH CLAIMS. CITY RESERVES THE RIGHT TO PROVIDE A PORTION OR ALL OF ITS OWN DEFENSE; HOWEVER, CITY IS UNDER NO OBLIGATION TO DO SO. ANY SUCH ACTION BY CITY IS NOT TO BE CONSTRUED AS A WAIVER OF CONTRACTOR'S OBLIGATION TO DEFEND CITY OR AS A WAIVER OF CONTRACTOR'S OBLIGATION TO INDEMNIFY CITY PURSUANT TO THIS AGREEMENT. CONTRACTOR SHALL RETAIN DEFENSE COUNSEL WITHIN SEVEN (7) BUSINESS DAYS OF CITY'S WRITTEN NOTICE THAT CITY IS INVOKING ITS RIGHT TO INDEMNIFICATION UNDER THIS AGREEMENT. IF CONTRACTOR FAILS TO RETAIN COUNSEL WITHIN THE REQUIRED TIME PERIOD, CITY SHALL HAVE THE RIGHT TO RETAIN DEFENSE COUNSEL ON ITS OWN BEHALF AND CONTRACTOR SHALL BE LIABLE FOR ALL COSTS INCURRED BY THE CITY.

IN ADDITION TO CONTRACTOR'S INTELLECTUAL PROPERTY INFRINGEMENT INDEMNIFICATION AND DEFENSE REQUIREMENTS HEREIN, IF AN INFRINGEMENT CLAIM OCCURS, OR IN CONTRACTOR 'S OPINION IS LIKELY TO OCCUR, CONTRACTOR SHALL, AT ITS EXPENSE: (A) PROCURE FOR THE CITY THE RIGHT TO CONTINUE USING THE PRODUCT; (B) REPLACE OR MODIFY THE PRODUCT SO THAT IT BECOMES NON-INFRINGEMENT WHILE PROVIDING FUNCTIONALLY EQUIVALENT PERFORMANCE; OR (C) ACCEPT THE RETURN OF THE PRODUCT AND GRANT THE CITY A REIMBURSEMENT FOR THE PRODUCT. CONTRACTOR WILL PROCEED UNDER SUBSECTION (C) ABOVE ONLY IF SUBSECTIONS (A) AND (B) PROVE TO BE COMMERCIALY UNREASONABLE.

THE INTELLECTUAL PROPERTY INFRINGEMENT INDEMNIFICATION HEREIN APPLIES TO ALL PRODUCTS PROVIDED, SUPPLIED OR SOLD UNDER THIS AGREEMENT BY CONTRACTOR TO CITY WHETHER MANUFACTURED BY CONTRACTOR OR A THIRD PARTY. CONTRACTOR REPRESENTS THAT, TO THE BEST OF ITS KNOWLEDGE, THE CITY'S USE OF PRODUCTS THAT ARE PROVIDED SUPPLIED, OR SOLD BY CONTRACTOR TO CITY AS PART OF THIS AGREEMENT DOES NOT CONSTITUTE AN INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS AND THE CITY HAS THE LEGAL RIGHT TO USE SAID PRODUCTS. THE CITY ENTERS INTO THIS AGREEMENT RELYING ON THIS REPRESENTATION.

THE INDEMNIFICATION HEREIN SURVIVES THE TERMINATION OF THE CONTRACT AND/OR DISSOLUTION OF THIS AGREEMENT INCLUDING ANY

**INFRINGEMENT CURE PROVIDED BY THE CONTRACTOR PURSUANT TO PARAGRAPH 3  
IN THE HEREIN INDEMNIFICATION SECTION.**

**X.  
VENUE**

The laws of the State of Texas shall govern the interpretation, validity, performance, and enforcement of this Contract. The parties agree that this Contract is performable in Collin County, Texas, and that exclusive venue shall lie in Collin County, Texas.

**XI.  
ASSIGNMENT AND SUBLETTING**

Contractor agrees to retain control and to give full attention to the fulfillment of this Contract and that this Contract shall not be assigned without the prior written consent of City, except for assignments to a Contractor affiliate. An assignment of this Contract with the consent of the City or to an affiliate of Contractor is conditioned on the assignee agreeing to be bound by the terms of this Contract. Contractor may subcontract any portion of its performance under this Contract. Contractor further agrees that the subletting of any portion or feature of the work, or materials required in the performance of this Contract, shall not relieve Contractor from its full obligations to City as provided by this Contract. In the event any additional or different subcontractors are required or requested by City, or in the event City rejects the use of a particular subcontractor, such rejection must be submitted in writing and be based on just and reasonable cause. Any resultant change in contract price and/or schedule shall be mutually agreed upon.

**XII.  
INDEPENDENT CONTRACTOR**

Contractor covenants and agrees that Contractor is an independent contractor and not an officer, agent, servant or employee of City; that Contractor shall have exclusive control of and exclusive right to control the details of the work performed hereunder and all persons performing same, and shall be responsible for the acts and omissions of its officers, agents, employees, contractors, subcontractors and consultants; that the doctrine of respondeat superior shall not apply as between City and Contractor, its officers, agents, employees, contractors, subcontractors and consultants, and nothing herein shall be construed as creating a partnership or joint enterprise between City and Contractor.

**XIII.  
INSURANCE AND CERTIFICATES OF INSURANCE**

Contractor shall procure and maintain for the duration of the Contract insurance coverage as set forth in Exhibit "B" including the City as a named insured.

**XIV.  
FORCE MAJEURE**

Neither party is liable for delays or lack of performance resulting from any causes beyond the reasonable control of a party including acts of God or the public enemy, war, Service Contract

Page 4

riot, civil commotion, insurrection, government or de facto governmental action (unless caused by the intentionally wrongful acts or omissions of the party), fires, explosions or floods, strikes, slowdowns or work stoppages any of which event(s) directly impact the Company's operations in the City.

**XV.  
AFFIDAVIT OF NO PROHIBITED INTEREST**

Contractor acknowledges and represents Contractor is aware of all applicable laws, City Charter, and City Code of Conduct regarding prohibited interests and that the existence of a prohibited interest at any time will render the Contract voidable. Contractor has executed the Affidavit of No Prohibited Interest, attached and incorporated herein as Exhibit "C."

**XVI.  
TERMINATION FOR CAUSE**

If either party defaults in the performance of this Contract, the other party will give to the non-performing party a written and detailed notice of the default. If City is the defaulting party, it will have thirty (30) days to provide a written plan to cure the default that is acceptable to Contractor and begin implementing the cure plan immediately after plan approval. If the non-performing party fails to provide or implement a cure plan, then the injured party, in addition to any other rights available to it under law, may immediately terminate this Contract effective upon giving a written notice of termination to the defaulting party.

Any termination of this Contract will not relieve either party of obligations previously incurred pursuant to this Contract, including payments which may be due and owing at the time of termination. All sums owed and not in dispute by City will become due and payable immediately upon termination of this Contract. Upon the effective date of termination, Contractor will have no further obligation to provide Services.

**XVII.  
SEVERABILITY**

The provisions of this Contract are severable. If any paragraph, section, subdivision, sentence, clause, or phrase of this Contract is for any reason held to be contrary to the law or contrary to any rule or regulation having the force and effect of the law, such decisions shall not affect the remaining portions of the Contract. However, upon the occurrence of such event, either party may terminate this Contract by giving the other party thirty (30) days written notice.

**XVIII.  
TERMINATION FOR CONVENIENCE**

City may, at its option, with or without cause, and without penalty or prejudice to any other remedy it may be entitled to at law, or in equity or otherwise under this Contract, terminate further work under this Contract, in whole or in part by giving at least sixty (60) days prior written notice thereof to Contractor with the understanding that all services being terminated shall cease upon the expiration of the 60-day period.

If Contractor provides Services after the termination or expiration of this Contract, the terms and conditions in effect at the time of the termination or expiration will apply to those Services.

**XIX.  
PROPRIETARY INFORMATION; CONFIDENTIALITY;  
INTELLECTUAL PROPERTY RIGHTS**

To the extent permitted by law, any information or data in the form of specifications, drawings, reprints, technical information or otherwise furnished to City under this Contract will remain Contractor's property, will be deemed proprietary, will be kept confidential, and will be promptly returned at Contractor's request. City may not disclose, without Contractor's written permission or as required by law, any such information, or data to any person, or use such information or data itself for any purpose other than performing its obligations under this Contract. The obligations set forth in this Section will survive the expiration or termination of this Contract.

**XX.  
MAILING OF NOTICES**

Unless instructed otherwise in writing, Contractor agrees that all notices or communications to City permitted or required under this Contract shall be addressed to City at the following address:

City of Plano  
Technology Services  
P.O. Box 860358  
Plano, Texas 75086-0358  
Attn: David Stephens

City agrees that all notices or communications to Contractor permitted or required under this Contract shall be addressed to Contractor at the following address:

Scientel Wireless, LLC  
948 Springer Drive  
Lombard, IL 60148  
Attn: Nelson Santos

All notices or communications required to be given in writing by one party or the other shall be considered as having been given to the addressee on the date such notice or communication is posted by the sending party.

**XXI.  
ENTIRE AGREEMENT**

This Contract and its attachments embody the entire agreement between the parties and may only be modified in writing if executed by both parties.

City agrees to reference this Contract and the Houston-Galveston Area Council Contract No. CW 10-09 on any purchase order issued in furtherance of this Contract, Service Contract

Page 6

however, an omission of the reference to this Contract shall not affect its applicability. In no event shall either party be bound by any terms contained in a City purchase order, acknowledgement, or other writings unless: (i) such purchase order, acknowledgement, or other writings specifically refer to this Contract; (ii) clearly indicate the intention of both parties to override and modify this Contract; and (iii) such purchase order, acknowledgement, or other writings are signed by authorized representatives of both parties.

**XXII.  
AUTHORITY TO SIGN**

The undersigned officers and/or agents of the parties hereto are the properly authorized officials and have the necessary authority to execute this Agreement on behalf of the parties hereto.

**XXIII.  
SUCCESSORS AND ASSIGNS**

This Contract shall be binding upon the parties hereto, their successors, heirs, personal representatives and assigns.

**XXIV.  
HEADINGS**

The headings of this Contract are for the convenience of reference only and shall not affect in any manner any of the terms and conditions hereof.

**IN WITNESS WHEREOF**, the parties have executed this Contract by signing below.

**SCIENTEL WIRELESS, LLC**

Date: \_\_\_\_\_ By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

**CITY OF PLANO, TEXAS**

Date: \_\_\_\_\_ By: \_\_\_\_\_  
Thomas H. Muehlenbeck  
CITY MANAGER

APPROVED AS TO FORM

\_\_\_\_\_  
Diane C. Wetherbee, CITY ATTORNEY  
Service Contract





Proprietary Information  
**CITY OF PLANO**

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## **PLANO EOC MICROWAVE BACKHAUL**

**Submitted to**



**Date**

**November 1, 2010**

Joe Mancino  
Scientel Wireless, LLC

**Scientel Wireless LLC**  
948 Springer Drive  
Lombard, IL 60148  
Office: (630)-652-3800  
Fax: (630)-652-3805





#### **A. EOC MICROWAVE NETWORK**

Scientel Wireless is pleased to provide this proposal to City of Plano for two links of microwave backhaul to connect the Emergency Operations Center (EOC) into the existing Plano Microwave Ring, including the required equipment moves from Parkwood and Jupiter Water towers to Communication and School House towers.

#### **City of Plano Link Equipment**

Scientel's quote is based on the following device counts:

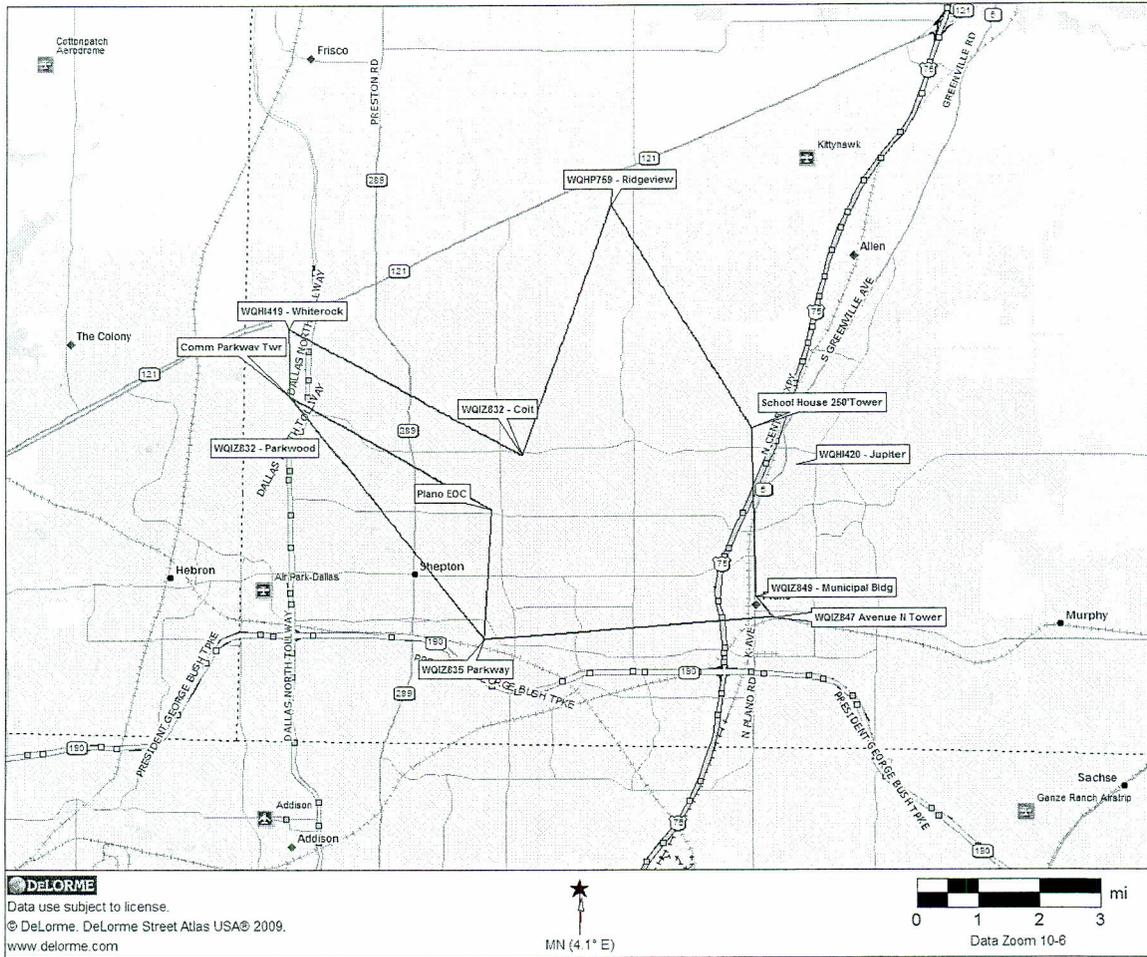
- Four Dragonwave Quantum 18 GHz Microwave Radios
- Two 2' 18 GHz Antennas
- One 2.5' 18 GHz Antenna
- One 4' 18 GHz Antenna
- One Prestressed concrete pole at Plano EOC

#### **Assumptions**

For this proposal, Scientel Wireless has made the following assumptions:

- Detailed RF design is the responsibility of Scientel Wireless.
- The number of devices will not exceed what is in section A1.
- The PTP locations selected are available for use and adequate mounting locations for the antennas exist.
- All equipment will be installed one towers, one pole and one water tower
- Installation permitting (if required) is the responsibility of City of Plano.
- Scientel Wireless can attached the new microwave radio cables to the existing cable runs at each of the existing tower.
- Power shall be provided within 10' equipment installation locations.
- Single mobilization on a per tower perspective.
- EOC Links and Tower moves can be coordinated and worked at the same time.

**Network Overview**



**Path Summary**

	EOC Location	Comm Pkwy Tower Location
Latitude Longitude Height (above mean sea level)  Azimuth 1 - 2 (clockwise from N) Azimuth 2 - 1 (clockwise from N) Elevation 1 - 2 Elevation 2 - 1	33° 2' 32.77" N 96° 46' 21.15" W 14.6 m  299.64° 119.61° 0.30° -0.25°	33° 4' 10.9" N 96° 49' 46.1" W 53.34 m          
DragonWave Radio Product	HP 18 GHz HC277 in 40 MHz	
Antenna Size Antenna Gain (dBi) Coupler Loss (dB)	120 cm / 4 ft 44.5 0.5	180 cm / 6 ft 47.8 0.5
Frequency (GHz) Polarization Link length (miles) Free Space Loss (dB) Atmospheric Absorption (dB) Field Margin (dB) Site 1 Shroud Loss (dB) Site 2 Shroud Loss (dB) Net Path Loss (dB)	18.700 Horizontal 3.80 133.62 0.43 3.00 0.00 0.00 45.75	
Transmit Power (dBm) Transmit Power (mW) EIRP (dBm)	19.50 89.1251 63.50	19.50 89.1251 66.80
Un-Faded Rx Signal Level (dBm) Receiver Threshold (dBm) Link Margin (dB)	-26.25 -60.00 33.75	
0.01% Rain Rate (mm/hr)	65.20	



Rain Availability (%)	99.994
Geoclimatic Factor	5.13E-04
Multipath Availability (%)	100.0000
Cumulative Availability (%)	99.994
Cum. Error Minutes (min/yr)	33.61

Note: Availabilities Calculated using ITU-R P.530-9 Methodology

 <b>DragonWave</b> <i>Bold new ideas in broadband wireless</i>	EOC Location	Parkway Location
Latitude Longitude Height (above mean sea level)  Azimuth 1 - 2 (clockwise from N) Azimuth 2 - 1 (clockwise from N) Elevation 1 - 2 Elevation 2 - 1	33° 2' 32.77" N 96° 46' 21.15" W 20 m  183.99° 3.99° 1.28° -1.25°	33° 0' 42.22" N 96° 46' 30.3" W 85 m      
DragonWave Radio Product	18 GHz HC181 in 40 MHz	
Antenna Size Antenna Gain (dBi) Coupler Loss (dB)	75 cm / 2.5 ft 41 0	120 cm / 4 ft 44.5 0
Frequency (GHz) Polarization Link length (m) Free Space Loss (dB) Atmospheric Absorption (dB) Field Margin (dB) Site 1 Shroud Loss (dB) Site 2 Shroud Loss (dB) Net Path Loss (dB)	18.700 Vertical 3414.62 128.55 0.24 2.00 0.00 0.00 45.30	
Transmit Power (dBm) Transmit Power (mW) EIRP (dBm)	10.50 11.2202 51.50	10.50 11.2202 55.00
Un-Faded Rx Signal Level (dBm) Receiver Threshold (dBm) Link Margin (dB)	-34.80 -69.00 34.20	
0.01% Rain Rate (mm/hr) Rain Availability (%) Geoclimatic Factor Multipath Availability (%) Cumulative Availability (%) Cum. Error Minutes (min/yr)	65.20 > 99.999 5.13E-04 100.0000 > 99.999 < 5.26	

Note: Availabilities Calculated using ITU-R P.530-9 Methodology



### **Detailed Site Survey and Construction Design**

Scientel Wireless will provide a detailed site survey and provide a detailed Engineering Package of all equipment installed on all structures and identify all the materials required including cable lengths. Scientel Wireless shall develop site sketches and drawings depicting the equipment configuration and location recommended for each site. All data collected for the project shall be presented to City of Plano in a formal and usable report format (CAD Drawings). The report will reflect any communications with support structure landlords, potential project expansions, potential project threats, and recommendation for system configuration.

A detailed site survey will include the following:

### **Detailed Site Survey & Design**

- ✓ Antenna support structure vertical plan drawing
- ✓ Site Drawings
- ✓ Equipment site locations on all structures
- ✓ Structural Analysis where required
- ✓ Equipment drawings
- ✓ Engineered Stamped Drawings if required
- ✓ Complete Bill of Materials
- ✓ Confirm power availability at each location including the type of power

### **Implementation, Integration and Configuration Services**

Implementation, integration and configuration services include both implementation and configuration of equipment to the point of ingress to the customer network. Additional configuration of existing network equipment is the responsibility of City of Plano. Services include CAT 6, Fiber and ground cable installation, antenna stand-off installation, antenna installation, CAT 6 cable testing, lightning rod and ground cable installation, D.C. surge protection, and as-built documentation. Additional services include:

- Mobilize installation and construction equipment and tools to sites.



- Install Microwave Radio and antennas on buildings and/or other infrastructure according to the RF plan.
- Install antennas, CAT 5, LMR and accessories as required.
- Perform alignment, configuration and testing of equipment – compare actual results vs. designed results.

### **Warranty Statement**

Scientel Wireless, LLC warrants that work will be performed in accordance with sound engineering practice and professional standards, but makes no other warranty, express or implied including the merchantability.

In the event of any error, omission, or other professional negligence or any breach of the above warranty of which Scientel Wireless, LLC is notified in writing within 90 days after system acceptance, the sole and exclusive responsibility of Scientel Wireless, LLC shall be to re-perform deficient work at its own expense, and Scientel Wireless, LLC shall have no other liability whatsoever.

In no event shall Scientel Wireless, LLC be liable, whether in contract or tort, including negligence, for loss of profit, loss of product, loss of use, or for indirect, consequential or special damages. The liability of Scientel Wireless, LLC for injury or damage to persons or property arising out of this work shall not exceed the lesser of the total amount received by Scientel Wireless, LLC pursuant to this contract or \$1,000,000, whether in contract or tort, including negligence and shall not extend to liability arising out of the negligence or other fault of the client.

## B. WATER TOWER TO TOWER MOVES

### Jupiter Water Tower/COW to School House Tower - Scope of Work

#### *School House Tower Site*

##### **Tower:**

- Install Dragonwave antenna mount at 175' facing 178.91 degree azimuth
- Install Dragonwave antenna mount at 175' facing 327.70 degree azimuth
- Install 3 Canopy FSK sector mounts at 195', one on each leg to achieve 0, 60, 120, 180, 240, and 300 degree azimuths
- Install 4 Canopy OFDM mounts at 190', two on one leg, then one on each additional leg, to achieve 0, 90, 180, and 270 degree azimuths
- Install spare Dragonwave 3' HP antenna on mount facing Municipal Building
- Install spare Canopy 6 FSK and 4 OFDM radios on mounts
- Install 4 lines of LDF4.5 cable (2 for each Dragonwave antenna)
- Install 8 lines of outdoor shielded CAT5 cable to the FSK Canopies at 195' (2 spares)
- Install 4 lines of outdoor shielded CAT5 cable to the OFDM Canopies at 190'
- Install ground kits on LDF4.5 cable
- Install LDF4.5 connectors and sweep lines
- Install GPS antenna for CMM's
- Align Dragonwave antenna facing Municipal Building

##### **Shelter:**

- Install 2 communication racks in predetermined space
- Install CMM4 and CMM Micro
- Install Dragonwave Duo Modems
- Install Cisco Switch
- Install UPs
- Power up all equipment and test

#### *Municipal Building Site*

- Install Duo combiner and proper RF heads on Dragonwave antenna facing School House tower 358.91 degree azimuth
- Connect LDF4.5 lines, add connectors to cable if necessary
- Install Duo Modems in cabinet, connect and test
- Align Muni antenna with School House tower antenna

#### *SM Re-alignment*

- Re-align all SM's currently pointing to the COW to School House Tower or other solution

***COW Removal***

- Remove two Dragonwave antennas and mounts from the top of the COW with a crane lift (take one antenna to School House Tower for path to Ridgeview and return other to Scientel warehouse to store as a spare)
- Remove 4 Canopy OFDM's and mounts with a crane lift
- Remove 6 Canopy FSK's (mount is part of COW, Do Not Remove Mount)
- Decommission COW
  - Lower tower
  - Disconnect power to trailer
  - Remove guy wires
  - Remove guy wire anchors
  - Tow trailer back to Scientel Office

***Jupiter Water Tower Site***

***Tower***

- Remove all cables and conduit from top of tank, thru dry tube to cabinet at bottom
- Plug all holes left from conduit runs
- Remove GPS antenna, line and conduit
- Remove A/C power run and conduit
- Remove all equipment from cabinet
- Remove cabinet and repair any holes in floor

***Ridgeview Tower Site***

- Install Duo combiner and proper RF heads on Dragonwave antenna facing School House tower 147.67 degree azimuth
- Connect LDF4.5 lines, add connectors to cable if necessary
- Install Duo Modems in rack, connect and test
- Align Ridgeview antenna with School House antenna

## Plano Parkwood to Communications - Scope of Work

### Communications Tower Site

#### Tower

- Install Dragonwave antenna mount at 175' facing 141.67 degree azimuth (Parkway)
- Install Dragonwave antenna mount at 175' facing 0.08 degree azimuth (White Rock)
- Install 3 Canopy FSK sector mounts at 195', one on each leg to achieve 0, 60, 120, 180, 240, and 300 degree azimuths
- Install 4 Canopy OFDM mounts at 190', two on one leg, then one on each additional leg, to achieve 0, 90, 180, and 270 degree azimuths
- Install spare Dragonwave 3' HP antenna on mount facing Parkway tower.
- Install spare Canopy 6 FSK and 4 OFDM radios on mounts.
- Install 4 lines of LDF4.5 cable (2 for each Dragonwave antenna).
- Install 8 lines of outdoor shielded CAT5 cable to the FSK Canopies at 195' (2 spares)
- Install 4 lines of outdoor shielded CAT5 cable to the OFDM Canopies at 190'
- Install ground kits on LDF4.5 cable
- Install LDF4.5 connectors and sweep lines
- Install GPS antenna for CMM's
- Align Dragonwave antenna facing Parkway Tower

#### Shelter

- Install 2 communication racks in predetermined space
- Install CMM4 and CMM Micro
- Install Dragonwave Duo Modems
- Install Cisco Switch
- Install UPs
- Power up all equipment and test

#### Parkway Tower Site

- Install Duo combiner and proper RF heads on Dragonwave antenna facing Communications tower at 321.70 degree azimuth
- Connect LDF4.5 lines, add connectors to cable if necessary
- Install Duo Modems in rack, connect and test
- Align Parkway antenna with Communications tower antenna

#### SM Re-alignment

- Re-align all SM's currently pointing to Parkwood to Communications Tower or other solution

## **Parkwood Water Tower Site**

### ***Tower***

- Remove two Dragonwave antennas and mounts (take one antenna to Communications for path to White Rock and save other for School House Tower install)
- Remove 4 Canopy OFDM's and mounts (save for School House Tower install)
- Remove 6 Canopy FSK's and mounts (save for School House Tower)
- Remove all cables and conduit from top of tank, thru dry tube to cabinet at bottom
- Plug all holes left from conduit runs
- Remove GPS antenna, line and conduit
- Remove A/C power run and conduit
- Remove all equipment from cabinet
- Remove cabinet and repair any holes in floor

### ***White Rock Tower Site***

- Install Duo combiner and proper RF heads on Dragonwave antenna facing Communications tower at 180.08 degree azimuth
- Connect LDF4.5 lines, add connectors to cable if necessary
- Install Duo Modems in rack, connect and test
- Align White Rock antenna with Communications antenna



### C. GENERAL PROJECT RESPONSIBILITIES

The following general project responsibilities, not defined by specific tasks, include:

#### **Scientel Wireless Responsibilities**

Scientel Wireless will designate a Project Manager who will direct Scientel's efforts and serve as the primary point of contact for City of Plano Corp. The Scientel Wireless Project Manager will have significant authority to make certain decisions relative to the project, on behalf of Scientel, and will have direct access to Scientel's executive management for resolving problems beyond the Project Manager's immediate authority. The responsibilities of the Scientel Wireless Project Manager include:

- RF and Network Design Document.
- Participate with City of Plano in progress review meetings and submit status reports as requested that identify the activities of the previous review period, as well as activities planned for the upcoming review period, including an updated Project Schedule. Maintain project communications with the City of Plano Project Manager(s).
- Participate in weekly conference calls or face-to-face meetings and issue a mutually agreed upon agenda for each call or meeting.
- Manage the efforts of Scientel staff and coordinate activities with the City of Plano project team members.
- Measure, evaluate and report the progress against the Project Schedule.
- Resolve deviations from the Project Schedule.
- Monitor the project to ensure that support resources are available as scheduled and as identified in the contract.
- Assume accountability for all Scientel Wireless contractor and subcontractor supplied tasks within the Project Schedule, if any.
- Coordinate and oversee the installation of all City of Plano hardware and software.



- Review and administer change control procedures through City of Plano's Project Manager, commonly referenced as a "Project Change Request" (PCR), issued by the Scientel Project Manager.
- Work with the City of Plano Project Manager(s) in designing and approving the format of an action item log to be used in conjunction with the Project Schedule. The purpose of the log is to identify outstanding issues, provide continual status updates on specific tasks and to identify responsibilities of the parties.
- Prepare and submit regular status reports that identifies the activities and milestones completed in the previous month and activities planned for the current month and the next month, including progress and payment milestones, and an updated Project Schedule.
- In the event that Scientel must replace or substitute a Project Manager, Scientel will immediately notify City of Plano of such a change and will provide City of Plano with a resume of the person intends to substitute or change.
- Coordinate lift trucks and trained/authorized operators as well as licensed electricians to install devices as required. If tower crews are required per the defined type of installation in the summary section, it is the responsibility of Scientel.

### **City of Plano Responsibilities**

The client will designate a Project Manager who will direct City of Plano's efforts and serve as the primary point of contact for City of Plano. City of Plano's Project Manager(s) will have significant authority to make certain decisions relative to the project, on behalf of City of Plano, and will have direct access to City of Plano executive management for resolving problems beyond the Project Manager's immediate authority. The responsibilities of the City of Plano Project Manager(s) include:

- Maintain project communications with the Scientel Wireless Project Manager.
- Identify the efforts required of the City of Plano staff to meet the client task requirements and milestones in the Statement of Work and Project Schedule.
- Measure and evaluate progress against the Project Schedule.

- Monitor the project to ensure that support resources are available as scheduled.
- Participate in Progress Reviews meetings.
- Provide timely responses to issues related to project progress raised by Scientel's Project Manager.
- Approve and release payments in a timely manner predicated on project deliverables.
- Ensure that all appropriate City of Plano personnel attend and actively participate in Progress Reviews, conference calls, and other project meetings.
- Assign one or more personnel who will work with Scientel Wireless staff as needed for the duration of the project, including at least one system administrator.
- Ensure acceptable Standard Change Request and Approval Letter(s) are approved by authorized signature(s).
- Provide building access to Scientel Wireless personnel to all facilities where the system is to be installed during the project. Temporary identification cards should be issued to Scientel personnel if required for access to client facilities. Access must be available after business hours where required by Scientel wireless, or as necessary to meet the project schedule.
- Provide any required parking permits to Scientel Wireless personnel for restricted access entry and/or parking.
- Obtain all FCC, zoning, site access, and other permits (including, but not limited to, easements, impact studies, planning commission approval, variances, etc) necessary for this project and any other agreements required to gain use of sites.
- Provide the appropriate fire inspection and building inspection certificates.
- Provide adequate space, electrical, communications lines and environmental appropriations for the Communications equipment to be installed by Scientel Wireless.
- Provide a location to ship and store all communications equipment throughout the duration of the project.



- Review and approve or revise delivered design documents within ten days of submission.
  
- City of Plano must inform Scientel Wireless of all relevant rules, regulations, and requirements for installation. Should these conditions impact the project schedule and limit installation, City of Plano may incur additional cost.
  
- The Scientel Wireless demarcation point on the network infrastructure end is the clients owned switch (to be determined on the IP Network Design). The client is responsible for connecting and configuring Host end servers to this router.
  
- Provide wall penetrations, conduit, cable trays and other supporting equipment necessary for the routing of power, grounding and networking cables.
  
- City of Plano shall provide power and grounding within 10' of each location.



**D. PROPOSAL PRICING**

**See Attached HGAC Price Sheet**



**CONTRACT PRICING WORKSHEET**  
For Catalog & Price Sheet Type Purchases

Contract No.:

CW10-09

Date Prepared:

11/1/2010

*This Form must be prepared by Contractor and given to End User. End User issues PO to Contractor, and MUST also fax a copy of PO, together with completed Pricing Worksheet, to H-GAC @ 713-993-4548. Please type or print legibly.*

Buying Agency:	City of Plano, TX	Contractor:	Scientel Wireless
Contact Person:	Amy Powell	Prepared By:	Nelson Santos
Phone:	972-941-7342	Phone:	1-630-652-3807
Fax:		Fax:	1-630-652-3805
Email:	amyp@plano.gov	Email:	nsantos@scientelwireless.com

Catalog / Price Sheet Name:	City of Plano, TX Plano EOC Microwave Backhaul
General Description of Product:	Installation of Microwave System for EOC backup

**A. Catalog / Price Sheet Items being purchased - Itemize Below - Attach Additional Sheet If Necessary**

Quan	Description	Unit Pr	Total
2	DragonWave/Bridgewave Design and Installation (per link)(SCI-DW-DI)(List Price - \$36,500)	34675	69350
4	Licensing Coordination (per link)(SCI-DSSD)(List Price - \$1500)	1425	5700
4	Detailed Site Survey & Design (per link)(SCI-DSSD)(List Price - \$2500)	2375	9500
3	Antenna, 18 GHz;4' Antenna;Clip Mount (SCI - A-ANT-11G-48-C)(List Price \$2,750)	2557.5	7672.5
1	Antenna, 18 GHz;6' Antenna;Clip Mount(SCI - A-ANT-11G-72-C)(List Price - \$4,750)	4,417.50	4417.5
4	Dragonwave 600;Standard Power;18 GHz FCC Band a;No Antenna;Dual Channel, Single Radio;48V DC;Rel.	24300	97200
4	IDU Cable: 80m LMR-400 Cable (SCI - A-CAB-IDU-80-LM)(List Price \$600)	570	2280
4	Licensed PTP Installation Kit(SCI-LPTP-KIT)(List Price \$1000)	950	3800
4	Dragonwave Single Radio AC Install Kit (N. America)(SCI - A-INK-HDS-AC-NA-R1) (List Price - \$1,700)	1615	6460
4	Dragonwave Upgrade 600 Mbps to 800 Mbps (Per Link)(SCI - A-UPG-BNW-600-800-HD)(List Price - \$3000)	2850	11400
220	Project Management Costs (per hour)(SCI-PM-MESH) (List Price - \$175)	166.25	36575
			0
<b>Total From Other Sheets, If Any:</b>			
<b>Subtotal A:</b>			254355

**B. Unpublished Options, Accessory or Service items - Itemize Below - Attach Additional Sheet If Necessary**

(Note: Unpublished Items are any which were not submitted and priced in contractor's bid.)

Quan	Description	Unit Pr	Total
1	60' Concrete Pole and Installation	21500	21500
1	Canopy SM Realignment	29045	29045
1	Water Tower Cleanup & Repair	9875	9875
			0
<b>Total From Other Sheets, If Any:</b>			
<b>Subtotal B:</b>			60420

**Check:** Total cost of Unpublished Options (B) cannot exceed 25% of the total of the Base Unit Price plus Published Options (A+B).

**For this transaction the percentage is:**

24%

**C. Other Allowances, Discounts, Trade-Ins, Freight, Make Ready or Miscellaneous Charges**

<b>Subtotal C:</b>			0

**Delivery Date:** 7/15/2010

**D. Total Purchase Price (A+B+C):**

314775

**City of Plano  
Insurance Requirements**

Requirements

Contractors performing work on City property for the City of Plano shall provide the City a certificate of insurance evidencing the coverage and coverage provisions identified herein. Contractors shall provide the City evidence that all subcontractors performing work on the project have the same types and amounts of coverage as required herein or that the subcontractors are included under the contractor's policy. The City, at its own discretion, may require a certified copy of the policy.

**All insurance companies and coverage must be authorized by the Texas Department of Insurance to transact business in the State of Texas and must be acceptable to the City of Plano.**

Listed below are the types and amounts of insurance required. By requiring such coverage, the City shall not be deemed or construed to have assessed the risk that may be applicable to Contractors under this agreement. The Contractor shall assess its own risks and, if it deems appropriate and/or prudent, maintain higher limits and/or broader coverage. The Contractor is not relieved of any liability or other obligations assumed or pursuant to this agreement by reason of its failure to obtain or maintain insurance in sufficient amounts, duration, or types. The City reserves the right to amend or require additional types and amounts of coverage or provisions depending on the nature of the work.

<b>Type of Insurance</b>	<b>Amount of Insurance</b>	<b>Provisions</b>
Commercial General (Public) Liability to include coverage for: a) Premises /Operations b) Products/Completed Operations c) Independent Contractors d) Personal Injury/Advertising Injury e) Liability assumed under an insured contract (including tort liability of another in a business contract	\$1,000,000 each occurrence, \$2,000,000 general aggregate; \$2,000,000 products/completed operations aggregate	City to be listed as additional insured and provided 30-day notice of cancellation or material change in coverage. A copy of the endorsement to policy must be submitted with the required certificate of insurance. City requires insurers to be rated B+VI or higher by A.M. Best or A or higher by Standard & Poors
Business Auto Liability	\$1,000,000 each accident	
Workers' Compensation & Employers' Liability	Statutory Limits  \$100,000 each accident \$500,000 policy limit by disease, \$100,000 each employee by disease	City to be provided a waiver of subrogation. A copy of the endorsement to policy must be submitted with the required certificate of insurance.

**Additional Requirements:**

- All policies must be written on a primary basis, non-contributory with any other insurance coverage and/or self-insurance maintained by the City of Plano.
- All insurance coverage required by this section must be evidenced by a certificate of insurance submitted by the contractor's insurer or broker. Certificates of insurance received from any other source will be rejected.
- The certificate of insurance must state: (1) the City of Plano is named as an Additional Insured with respect to General Liability Coverage and (2) a Waiver of Subrogation in favor of the City of Plano on the Workers' Compensation Policy

Questions regarding this insurance should be directed to the City of Plano Purchasing Department at (972) 941-7557



