



Insight Client Account Number	10629147
Statement of Work #	4010071048
State/Fed Contract	Equalis Group-Technology Software, Equipment and Services-EQ-013120-01C-61001946

Statement of Work
("SOW")

Parties and addresses for notice:

"Insight"	"Client" or "El Paso County"
Company name: Insight Public Sector, Inc.	Company name: El Paso County
Primary contact: Sam Esparza	Primary contact: Mr. Cristian Martinez
Address: 13755 Sunrise Valley Drive, Suite 750 Herndon, VA 20171	Address: 800 E. Overland Avenue El Paso, TX 79901
Email: sam.esparza@insight.com	Email: cr.martinez@epcounty.com

Agreed and accepted:

Insight	Client
Authorized signature:	Authorized signature:
Name:	Name:
Title:	Title:
Date:	Date:

The Invoicing procedures section must be completed before this SOW can be processed.

Invoicing procedures:

Method (Client MUST select ONE option below.)	PO Process (Client MUST select ONE option below.)
<input type="checkbox"/> Mail Invoice – Hard copy of invoice will be mailed to: Company name: Address: Attention: Accounts Payable or Accounts Payable Contact: Phone:	<input type="checkbox"/> Client issues system-generated POs or internal reference numbers for service engagements. Please fill in the PO number below and attach a hard copy of the PO to this signed SOW. Note: Services cannot be performed until a hard copy of the PO is received, or a billing reference is provided. PO number: PO release number (if applicable): Internal billing reference number/name:
OR <input type="checkbox"/> Email invoice – Invoice copy will be sent electronically via email to:	<input type="checkbox"/> Client does NOT issue system generated POs for service engagements. Accordingly, performance of and payment for any Services under this SOW do not require, and are not contingent upon, the issuance of any PO or other similar document.
<input type="checkbox"/> Submit invoice via VMS/Client Portal – Please provide name of VMS/Portal as well as any relevant details/instructions:	

This Statement of Work ("SOW") is effective as of the date last signed above ("SOW Effective Date") and shall be governed by the Equalis Group-Technology Software, Equipment and Services-EQ-013120-01C, dated May 1st, 2020, (hereinafter, the "Agreement").

1. Purpose

The purpose of this SOW is to set forth the specific Services that Insight will provide to Client in connection with the Agreement.

2. Definitions

- a. "Deliverables" means the items created by Insight in connection with the Services and as specifically described in the Scope of Services and Delivery Schedule Section below.
- b. "Services" has the meaning given to it in the Scope of Services and Delivery Schedule Section.

3. Scope of Services and Delivery Schedule

Insight will perform the following services ("Services") per the terms of this SOW.

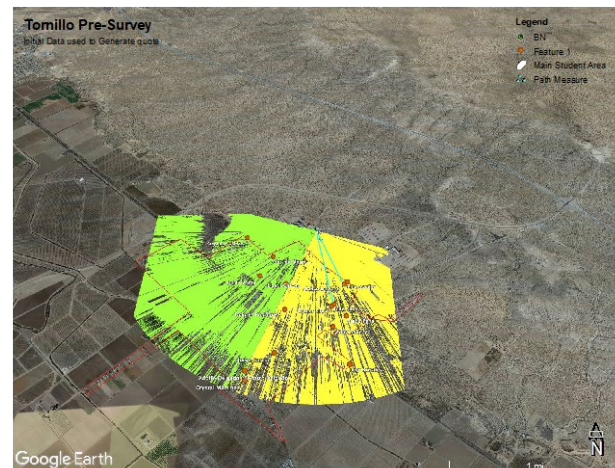
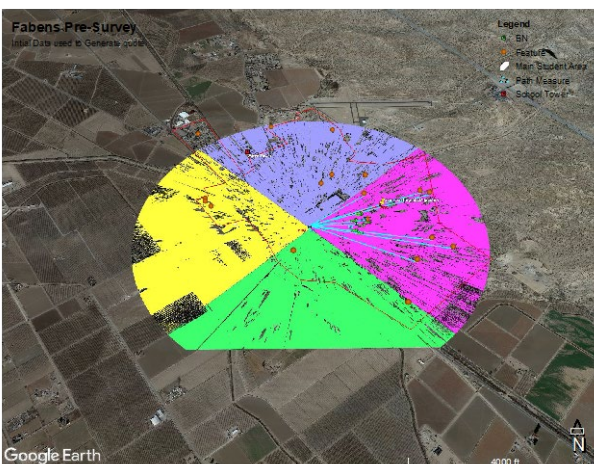
3.1. Service Description

The following is a high-level description of the Services Insight will provide:

1. Phase I
 - a. Assist with Grant Submission for the United States Department of Agriculture (USDA) Rural Utilities Service (RUS) addendum to the Consolidated Appropriations Act, 2022 (Public Law 107-103, the CAA).
2. Phase II
 - a. The core network buildout Services to support the Cotton Valley Community Wireless Broadband Proof of Concept (POC) Initiative as outlined in the Exhibit(s) of this SOW.
 - b. The wireless network buildout services to include POC use case with test group candidates as outlined in the Exhibit(s) of this SOW.
3. Phase III
 - a. The wireless network expansion services to increase the number of household users as outlined in the Exhibit(s) of this SOW.

3.1.1. Locations

- The proper municipalities of Tornillo and Fabens, TX, located in El Paso County
 - Target coverage areas provided for Tornillo and Fabens, TX community areas are illustrated below:



3.2. Project Management

Insight will provide project management services as detailed in the applicable Exhibit of this SOW.

3.3. How Services are Accepted

After Insight performs a Service or delivers a Deliverable to Client, if the Service or Deliverable does not meet the material requirements described in the SOW, then Client will provide Insight with a written explanation describing how the requirements were not met within 5 days following the date the Service or Deliverable was delivered to Client. If Client fails to provide the written explanation within this 5-day period, the Service and Deliverable will be deemed accepted by Client.

3.4. Business Hours

Services will be performed during normal United States business hours unless otherwise mutually agreed upon in the attached Exhibit(s). Normal business hours are defined as an 8-hour day, Monday through Friday, excluding designated Insight Holidays.

3.5. Client Responsibilities

Client is responsible for the following:

1. Client will provide a project contact with decision-making authority to support the scope of services described in this SOW and ensure the proper personnel are scheduled to review each completed Service or Deliverable upon notification of completion by Insight.
2. If applicable, Client will provide site contacts for each Client location. Each such contact will provide Insight with sufficient detail regarding his/her site, and will coordinate or perform required onsite work, as reasonably requested by Insight and Client IT, for the duration of the project.
3. Client will provide Insight the necessary access to its internal experts, location(s), critical systems, applications, workspace, and equipment required at each field location to complete the project. Access to Client systems will be provided to Insight via either onsite direct access or remote/VPN access. If Client cannot provide access or required resources under this SOW, then additional project duration, labor hours, travel expenses, and other costs may be incurred and due to Insight by Client.
4. Client will provide the necessary hardware, software, tools, and permits required for the successful completion of the project prior to Insight's arrival. Further, Client is responsible for all licensing requirements to be compliant per their own agreements.
5. Client is responsible for all product and material, including distribution and transport of Client-owned product and material, unless otherwise specified in writing. Product and material are defined as any items purchased, owned and/or provided by Client (or others) that Insight is required to use for fulfillment of any Services described herein.
6. Client is responsible for providing adequate and secure onsite storage for all Client-owned product and material unless otherwise specified in writing.
7. Client will be responsible for managing and maintaining, if applicable: (a) back-up and/or data migration of existing data and Client's information unless otherwise agreed to by Insight; (b) computer system and network designs; (c) component selection as it relates to the performance of the computer system and/or the network; (d) reasonable firewalls and if appropriate encryption; (e) least-privileged-based access controls (including provisioning, de-provisioning, authentication, authorization, and accountability controls); and (f) physical, electronic, and procedural controls to ensure the confidentiality, integrity, and availability of Client's information on all applicable Client computing systems used to store or transmit Client's information, in accordance with current applicable industry standards and best practices.
8. Client and its employees, contractors, and agents will: (a) cooperate with any reasonable request of Insight, (b) provide input throughout the project and will review progress at review meetings requested by Insight; and (c) provide Insight with access to all of Client's information, documentation, and technology, necessary for Insight to perform the Services, including a list of all Client and third-party contacts necessary for Insight to do so.

3.6. Assumptions

1. If applicable, any onsite skills transfer that takes place during this project will not replace the manufacturer's formal system implementation and administration classes.
2. Outside the scope of this SOW, Insight has no obligation to mount, affix, or otherwise fasten any cable, hardware, or other product to any building or structure (inside or outside), and Insight has no obligation to run cable above, under, behind, or through any ceiling, floor, or wall of any building or structure. If such services are requested by Client, such services may be performed by Insight only to the extent permitted by applicable law and will be subject to a Change Request for additional services.
3. Each party agrees that personnel will not be asked to perform, nor volunteer to perform, engineering and/or consulting tasks that lie outside the skill sets and experience of personnel. Personnel have the right to decline a service request if the request falls outside their scope of experience and expertise.

3.7. Change Request Procedure

If either party identifies any alterations to the scope of work, specifications, or requirements in this SOW, it shall be brought to the attention of the other party's management for pre-authorization by completing and submitting a written Change Request in a manner described in this section and signed by both parties ("Change Request Form").

Without limitation, Change Request Forms are appropriate in the following examples, as well as other situations that alter the scope of work, specifications, or requirements in this SOW:

- Changes to environment, scope, management, performance of projects (regular and special), milestones, tasks, systems, service levels
- Additional resources, scope, projects, new services, tasks
- Changes to management and control of hardware and software
- Adjustments to baselines, assets, volumes, or other areas where changeover time results in the need to adjust pricing
- Additions, deletions, and/or changes to sites where services are provided, or the nature of services provided at a site

If any such change causes an increase or decrease in the cost or time required for the performance of the Services, the price and/or delivery schedule shall be equitably adjusted and identified within the Change Request Form.

If Insight believes an operational change is required and Client does not agree to the change (or the applicable Change Request), Insight will be relieved of any related service level obligations. Any additional resources or costs expended or incurred to address the failure to make the change will be treated as an additional service.

3.8. Project Kickoff

A project kickoff meeting will be held to review project expectations, discuss IT infrastructure design, discover any possible problems/risks, and formulate an appropriate plan (including a firm engagement schedule and downtimes).

3.9. Start Date

The project start date will be mutually determined upon receipt of this signed SOW and, if applicable, a valid Purchase Order (PO). A minimum lead time of at least 20 business days from receipt of both documents may be required for scheduling purposes.

If Client causes any delays to the delivery start date, which was agreed upon by both parties in writing (email is acceptable), Client may incur additional fees based upon such delay, including but not limited to, travel expenses already incurred, if any, and/or other equitable relief as a remedy for such delay. The delays and charges will be defined and communicated through the Change Request process described in this SOW.

Services will be performed over a consecutive timeframe unless otherwise provided herein. If Client requests or causes a change in the schedule that prohibits Services from being delivered in a consecutive timeline, an additional lead time of 20 business days (from written confirmation to resume Services) may be required, new resources may be assigned, and there may be additional fees.

3.10. Estimated Duration

The Services' duration for each Phase as shown below:

- Phase I – 4 weeks
- Phase II – 16 weeks
- Phase III – 24 weeks

3.11. Certain Termination Rights In Respect Of Phases II and III

Under certain circumstances described in Subsection 6 of Section 4.2 (Pricing Notes) of this SOW, either party hereto will have the right to terminate Phases II and III of this SOW.

4. Pricing and Payments

4.1. Fixed Fee

Client shall pay Insight the fixed fee of **\$2,324,683.00** for the completion of all 3 phases. The total amount paid to Insight will not exceed the total fixed fee without the prior written approval of Client. Client will not reimburse Insight for travel expenses, if any are required.

The fixed fee is based on the following:

Phase	Project Description	Price
Phase I	Grant Application Support <ul style="list-style-type: none"> • In-scope data necessary for the Grant Submission for the United States Department of Agriculture (USDA) Rural Utilities Service (RUS) addendum to the Consolidated Appropriations Act, 2022 (Public Law 107-103, the CAA) 	\$10,000.00
Phase II	Network and Security Hardware <ul style="list-style-type: none"> • Network core hardware (separate quote provided by Insight not included in total of this SOW) (SMART quote # 0226263947)** <ul style="list-style-type: none"> ○ Firewalls ○ Switches ○ UPS ○ DHCP Servers 	\$237,497.40
Phase II	Network Installation and Materials for the POC <ul style="list-style-type: none"> • Core network build out (2) <ul style="list-style-type: none"> ○ All cabling, racks, and materials and labor (includes network core labor) • Wireless network build outs (Tornillo and Fabens) <ul style="list-style-type: none"> ○ All electrical, radios, cabling materials, and labor 	\$841,355.00
Phase III	Redundant Network and Security Hardware <ul style="list-style-type: none"> • Network core hardware (separate quote provided by Insight not included in total of this SOW) (SMART quote # 0226337013)** <ul style="list-style-type: none"> ○ Redundant <ul style="list-style-type: none"> ▪ Firewalls ▪ Switches 	\$236,580.86

Phase III	Household FWA Expansion	\$1,483,328.00
	<ul style="list-style-type: none"> • Redundant core network build out at each location <ul style="list-style-type: none"> ○ All cabling, racks, and materials and labor (includes network core labor) • Household CPE wireless network expansion (Tornillo and Fabens) <ul style="list-style-type: none"> ○ All electrical, radios, cabling materials and labor ○ Estimated 425 additional households TOTAL 	
Insight Project Cost		\$2,324,683.00
**Core Network and Security Hardware (quoted separately)		\$474,078.26
NET TOTAL		\$2,798,761.26
*Project Cost Provided by Others		
	Data circuits (will be procured direct by El Paso County) pricing estimates provided by local carriers to Insight* Spectrum (1 gig circuit Tornillo / 1 gig circuit Fabens) 36 months	\$1,699.00 per month*

* Project Cost Provided by Others is for information purposes only and not covered in this SOW.

4.1.1. Invoicing

Upon completion of the Phase I Services related to the Grant Submission for the United States Department of Agriculture (USDA) Rural Utilities Service (RUS) addendum to the Consolidated Appropriations Act, 2022 (Public Law 107-103, the CAA), Insight will invoice Client in the amount of \$10,000.00 as described in the pricing table in Section 4.1 above.

Insight will invoice Client monthly for all other Services performed based upon a percentage complete, plus any taxes incurred (if applicable).

4.2. Pricing Notes

1. Pricing offer is valid for 30 days from the date a copy of this SOW is first presented to Client. This SOW must be executed and returned to Insight by Client within such 30-day period or pricing will expire.
2. Travel expenses are included in the Fixed Fee amount.
3. In the event that work effort is paused for a period in excess of 90 days, Insight will invoice Client for Services provided to date based on percent complete after 90 days of inactivity.
4. Pricing and estimated time to complete this engagement are based upon Client providing necessary access to internal experts, location(s), all critical systems, applications, and hardware required to complete the project. Any additional requirements, including without limitation, additional screening, background check, vaccination or covid-related requests and other out-of-scope or previously undisclosed resource-related requests may result in Service commencement or completion delays and additional fees.
5. The parties will not commence Services under Phases II or III hereunder until Client receives a final response to its Grant Submission. In the event the Grant Submission does not result in an actual “**Grant Award**” to Client, either party may terminate the Phase II and Phase III scope of this SOW by providing not less than thirty 30 days prior written notice to the other party, provided that such notice is received within ninety 90 days following the date Client first receives written notice of the failure to have been awarded the Award.
6. In the event Client receives written notice that it has been awarded the Award, the Client will be legally bound and obligated hereunder with respect to Phases II and III of this SOW and to the greatest extent permissible under applicable law will use the Award solely to purchase the Phases II and III Services under this SOW (and related hardware and materials) from Insight, absent a material, unexcused breach of this SOW by Insight. In this event, the initial \$10,000.00 will be credited from Phase I to the balance.

7. If an Insight resource arrives on site per an agreed-upon schedule and is unable to start or complete the project due to any Client, site, and/or equipment issues, a fee equal to time expended and applicable travel expenses will be incurred. Insight will have 10 business days to schedule the return visit, if required.
8. Insight is not responsible for delays or repeated tasks caused by factors outside of Insight's control. These factors include, but are not limited to, availability of Client personnel, equipment, and facilities.
9. Client will compensate Insight for any out-of-scope work requested by Client on an hourly basis at Insight's standard hourly rates (unless otherwise agreed to in writing by the parties).

4.3. Client Work Product

All results of the Services described in and delivered pursuant to this SOW, including Deliverables and Client's proprietary information contained therein, authored or created by Insight specifically for Client as a Work Made for Hire, excluding any Insight IP incorporated therein ("Work Product"), will be and remain the property of Client. Insight retains all right, title, and interest in, without limitation, any intellectual property rights in works of authorship, know-how, or any invention, device, process, method, development, design, specifications, technique, apparatus, reports, schematic, or technical information (whether patentable or not), documentation, software or enhancements, improvements, alterations, interfaces, workflows, and best practices developed, invented, created, or reduced to practice by Insight and used for the Services, including any derivatives or modifications ("Insight IP"). To the extent Work Product includes any works of authorship that are Insight IP, Insight grants Client a nonexclusive and non-transferable license to use each such portion of the Work Product for its internal business purposes, provided that no Insight IP may be unbundled or separated from the Work Product or used on a stand-alone basis.

5. Exhibit – Project Management

Insight will provide the following project management and technical direction:

Project Manager

- Serve as the primary point of contact on all project issues, needs, and concerns
- Provide team leadership and guidance
- Facilitate kickoff meeting to review scope and project expectations, discuss IT infrastructure design, assess Client readiness (hardware, software, infrastructure pre-requisites, etc.), discover any possible problems/risks, formulate an appropriate work breakdown structure for primary project tasks, and create project timeline/schedule (including potential downtimes and maintenance windows)
- In conjunction with Client, measure and communicate weekly progress against mutually agreed-upon milestones
- Maintain a project log proactively to identify and communicate key decisions made, action items to be completed, risks/issues that may impact scope, schedule, and lessons learned; and mitigate and/or escalate any critical risks or issues under Insight’s control, as needed
- Manage Client expectations and satisfaction throughout the life of the project
- Schedule and coordinate the necessary resources to support the project
- Schedule and conduct project team update/status meetings
- Prepare written status reports for Client at mutually agreed-upon intervals
- Monitor, manage, and communicate changes to the project’s scope, budget, schedule, and resources; complete Change Request (CR) documentation as required; and obtain signed CRs for mutually agreed upon changes
- Facilitate closeout meeting, as needed

Services Manager

- Provide oversight and function as the primary escalation point for the project
- Maintain contact and communication with all Insight project team members and project stakeholders to ensure conformance with requirements of project delivery and Client expectations
- Oversee project to ensure consistency of project practices (Change Requests, issue management, risk management, decision tracking, etc.); follow and contribute to standard Client implementation methodologies and best practices
- Oversee project communications plans and associated documents
- Provide Project Management leadership and guidance throughout the project
- Work closely with the Insight Project Manager and key Client team members and stakeholders to ensure that the project is effectively executed

5.1. Project Contacts

Contact Name	Contact Email
Client Sponsor – Mr. Cristian Martinez	cr.martinez@epcounty.com
Client Executive - Sam Esparza	sam.esparza@insight.com
Services Manager – Tim Ouellette	tim.ouellette@insight.com and
Services Director – John Brooks	john.brooks@insight.com

6. Exhibit – Cotton Valley Community Wireless Broadband Buildout

6.1. Service Description

Summary

Insight will provide the municipalities of Tornillo and Fabens, TX, located in El Paso County, with a Community Wireless Broadband solution. This will be accomplished through multiple stages. The first stage will involve Insight working with the county to submit the appropriate response to the Grant Submission for the United States Department of Agriculture (USDA) Rural Utilities Service (RUS) addendum to the Consolidated Appropriations Act, 2022 (Public Law 107-103, the CAA).

Phase II of this project is the buildout of the core broadband network that will support delivering broadband connectivity to the communities of Fabens and Tornillo. This POC project also provides a limited wireless deployment for predetermined community locations as part of the POC project. The scope of the POC project for CPE (Customer Premise Equipment) is 25. Tornillo will include 16 CPE locations, and Fabens will consist of 9. The POC wireless solution includes all labor and materials for the buildout. The core network will consist of redundant firewalls, a core network switch, and a dynamic host protocol server to provide local IP addresses for wireless clients. The firewalls will include content filtering. Each core network buildout rack will have an uninterruptible power unit (UPS). Uplink Internet services provider circuits to be provided by the client El Paso County in a quantity of 2 and should be 1 gig upstream internet connections. Insight has line items costed the circuits in this proposal for 24 months. The wireless network is designed for capabilities of greater than 100 Mbps / 20 Mbps. In addition, the Tornillo wireless network includes park installation to provide internet access for the park.

The final phase will expand from the POC project and build out the solution to an estimated 425 additional resident locations. When all 3 phases are completed, the Cotton Valley Connection Project will provide Broadband Service for over 450 homes throughout the Fabens and Tornillo townships. Additionally, broadband service will be provided at Fabens High School and the Tornillo Coyote Park.

Requirements

Design and implement a community broadband network that provides broadband internet access to students and residents of Fabens and Tornillo TX:

- Demonstrate ability of a fixed wireless solution that can deliver at least 100Mbps down and 100Mbps up broadband internet service
- Demonstrate ability to support connectivity in MDU facilities and public and residential environments
- Provide an expandable Broadband Network to the communities of Fabens and Tornillo

High-Level Approach

Utilize existing assets owned by the Community and/or obtained through partnership with other asset owners to minimize deployment costs

- Establish high site locations at Client-friendly properties
- Utilize fiber network where available and/or;
 - Utilize licensed or unlicensed PTP microwave to interconnect sites, as needed
- Backhaul network can originate at a fiber PoP facility and establish PTP connectivity to remote, non-fiber-based node/sites
- Be able to use multiple fiber PoPs, if available
- Utilize existing powered assets at street level for network deployment, if needed
- PoC will utilize list of target households provided by Fabens ISD and Tornillo ISD to validate selected technologies based on use case

High-Level Design Overview

- Use existing tower at the Tornillo Middle School
- Install 2 Tarana Massive MIMO Base Station Sector on Tower
- Solution is capable to add mesh Wi-Fi network, if needed

- PTMP Connectivity to CPE on exterior wall of residences in viewshed with cabling inside residence to Wi-Fi access point
- Solution capable of exceeding 100/20Mbps throughput

Representative Design Photo

Fabens



Tornillo



The following is a high-level description of the Services Insight will provide:

- Provide core network build out Services
 - 2 locations
- Provide wireless network construction and build out Services
 - 2 locations
- Insights high-level project phases and approach to the POC project includes the following:



- Validate Requirements – validation of the high-level Design requirements and expectations
- Low Level Survey and Design - Perform the low-level core network and wireless surveys and design
- Implementation – Installation and configuration of the project equipment
- Testing Validation – Testing the wireless and core network and perform tuning
- Production and Operations – Turn over the new network to operations and end users for the community use

6.2. Scope and Approach

Insight will perform the following Services:

6.2.1. Phase I - Grant Application Consultation

- Assist with Grant Submission for the United States Department of Agriculture (USDA) Rural Utilities Service (RUS) addendum to the Consolidated Appropriations Act, 2022 (Public Law 107-103, the CAA)
 - Insight will assist with the compilation of the data necessary to respond to the USDA’s addendum pertaining to the solution outlined in this approach
 - Insight will provide the information to El Paso County
 - The following sections will be completed in collaboration with El Paso County for submission to the USDA:
 - Section 2 - General Project and Awardee Information
 - Section 3 - Executive Summary

- Section 4 - PFSA Description
- Section 5 – Network Design
- Section 6 – Itemized budgets
- Section 7 – Service Offerings
- Section 8 – Subscriber Projections
- Section 9 – Environmental information on the RUS Shapefiles
- Section 12 – License & Agreements review
 - Internet Service Agreements
 - Pole Attachment Agreements
 - Spectrum lease Agreements
 - Tower lease Agreements
 - Fiber lease Agreements
 - Wireless spectrum for backhaul
 - Wireless spectrum license
 - Network Management agreements
- Section 13 – Provide additional information or consider adjusting the service area of a project in the course of reviewing information submitted by RUS

6.2.2. Phase II – Core and Wireless network buildout and End User Proof of Concept(s)

Network Core Buildout Planning Phase - 2 Locations

The network core buildout will commence in each municipality of Tornillo and Fabens. Each buildout of the core will be identical with the detailed installation of equipment listed below.

The high-level scope and approach to the build out by task is listed below:

Detailed Task of Equipment Installed

Tornillo and Fabens locations (identical buildouts)

- Provide network closet build out for 2 locations, 1 for Tornillo and 1 for Fabens
 - 1 network floor mounted cabinet lockable / 2 total installed of each below:
 - 45RU Tall x 42-inch Deep, equipment cabinet, with locking doors per site
 - 1 x cabinet grounding and bonding kit per site
 - 1RU fiber enclosure per site
 - 1 x NEMA rated fiber enclosure to be mounted on the pole at each site
 - 12-strand Indoor/Outdoor, OS2, single-mode fiber optic cable per site
 - 2 x fiber adapter panels per site
 - 4 x fiber jumpers per site
 - 1 x 24 port modular patch panel per site
 - Category 6a cabling for demark extension at both sites
 - 4 x Category 6a jacks per site
 - 2 Network Palo Alto Firewalls configured with content filtering and with high availability mode / 4 total installed
 - 2 Arista Core Network Switches in redundant mode / (4) total installed
 - 1 DHCP Servers / 2 DHCP total installed

- 1 installation of Backup Power UPS Unit / 2 total installed
- 1 copper and or fiber DMARC Connection Uplink to the ISP within the same facility. / (2) total installed

Insight assigned project manager, network architects, and engineering will develop a comprehensive network design to include the following:

- Gather core network requirements from Fabens and Tornillo Independent School Districts
 - IP Address Schema
 - VLAN definitions
 - Network firewall security parameters
 - Network content filtering requirements
- Network design session to diagram and buildout the core network
 - Logical network diagrams
 - Physical network diagrams
 - IP address schema
 - VLAN Schema
 - Documented design
- Validate physical site installation location
 - Cabinet
 - Power
 - Circuit location
 - Validate uplinks
- Inventory the equipment
 - Firewalls
 - Switches
 - DHCP Servers
 - UPS units
- Preconfigure the equipment based on the network design
 - Firewalls
 - Switches
 - DHCP Servers
 - UPS units
- Install and configure the equipment
 - Firewalls
 - Switches
 - DHCP Servers
 - UPS units
- Test and tune the core network
- Document the core network
 - Logical diagrams
 - Physical diagrams

- Backup configurations
- Wireless network test results for each location post installation

Wireless Network Construction and Build Out - 2 Locations

For itemized material provided see Exhibits 7 and 8 within this scope of work. The wireless buildout materials and parts list includes all external cabling, radios, and materials for the external wireless network. This includes all of the Client premise equipment and ongoing licenses and maintenance. Installation of all of the materials is included in this Statement of Work.

- Furnish and install Community Wireless Broadband equipment in the Tornillo Community of El Paso County as a broadband POC network to include:
 - Design, install, and configure 2 x Tarana Point-to-Multipoint (PTMP) Base Nodes (BNs) on the Tower near the High School
 - Design, install, and configure 16 x CPE locations on residence locations in the coverage area include a Tarana Point-to-Multipoint (PTMP) Remote Nodes (RNs), and an indoor Ruckus H350 access points
 - Design, install, and configure 1x Park location in the coverage area including a Tarana Point-to-Multipoint (PTMP) Remote Node, and 2 outdoor Ruckus T750 Mesh access points and 6-port switch
- Furnish and install Community Wireless Broadband equipment in the Fabens Community of El Paso County as a broadband POC network to include:
 - Construction and installation of 1 x light-weight non-penetrating roof mount SLED on the roof of the school gymnasium
 - Design, configure, and install 1 x Multigigabit Point-to-Point (PTP) Link between the Gymnasium Roof and the Water Tower
 - Design, install, and configure 4 x Tarana Point-to-Multipoint (PTMP) Base Nodes (BNs) on the Water Tank
 - Design, install, and configure 2 x RAP locations on streetlights at a public housing location to include 2 x Tarana Point-to-Multipoint (PTMP) Remote Nodes (RNs), 2 x outdoor switches, and 2 x Ruckus T750 access points
 - Design, install, and configure 4 x MAP locations on streetlights at a public housing location to include 4 x Ruckus T750 access points
 - Design, install, and configure 9 x CPE locations on residence locations in the coverage area include a Tarana Point-to-Multipoint (PTMP) Remote Nodes and an indoor Ruckus H350 access points

Electrical Remediation

- Installation cost includes Electrical Remediation included for up to \$26,666.00 for electrical remediation at the Fabens Gymnasium, Water Tower, and Tornillo Tower sites
 - Cost above the amount above will be pre-approved by the Client and could result in a Change Request
- Services include only isolated circuits to power equipment from closest feasible tap-point within 100-feet

Operations and Maintenance

The ongoing operations and maintenance include network monitoring and remote support for 1 year.

The wireless backhaul and base nodes do include remote dispatch in the event of equipment failure or replacement.

Wireless Network Planning Phase - RF Predictive Analysis

The purpose of this phase is to better understand the area, requirements, and determine the components and architecture of the network. Based on boundaries, general coverage and capacity requirements, redundancy requirements, device type, fiber location information, and any other asset agreements provided by Client, Insight will perform the following work:

- Gather Building, GIS, and land use data and generate estimated number of nodes based on provided information and general area types
- Cut clutter to depict RF Environment obstacles for outdoor radio locations
- Utilize tools-based software analysis to identify:
 - Potential issues with backhaul/capacity injection
 - Topology, trees, and building/housing coverage issues
 - Potential mounting assets required to meet general coverage area requirements
 - Potential access coverage/exclusion area issues
- Create a preliminary high level design document containing:
 - Network requirements
 - Access point estimates from land use and general drive area
 - Preliminary BOM for materials required
 - Radio and antenna mounting recommendations
- Provide predictive model for coverage, identifying ingress/egress points, and exclusion areas

Network Design Phase - RF Field Site Survey

The purpose of this phase is to validate the network architecture developed during the Planning Phase and collect data regarding mounting assets and locations. During this stage, Insight will perform the following work:

- Perform requested site surveys to validate selection of mounting assets, and issues with assets (e.g., power), no assets available, and interference problems
- Conduct basic analysis of access coverage, backhaul/capacity links, redundancy, and hop counts
- Identify and document mounting solutions at each surveyed location
- Conduct an RF sweep at each access point location
- Conduct an RF drive sweep of the coverage area

Wireless Network - Design Phase Deliverables

Upon completion of the Wireless Network Planning and Design Phases, Insight will provide the necessary documentation required to begin the configuration, commissioning and deployment of the network. Deliverables will include the following:

- Create Survey and Design Document
- Update BOM and cost estimate for implementation as required
- Identify Client network requirements
- Define basic network configurations for nodes plus identify any site/node specific parameters
- Create configuration spreadsheet with design information
- Conduct as-needed design review meetings and provide document updates, as needed
- Base Node (BN) Radio Installation Services
- Insight will provide the following Services:
 - Configure the radio equipment
 - Install all mounting hardware for radio equipment
 - Install and align antennas
 - Install grounding wire, surge protection, and weatherproof all connectors on outdoor radio equipment with external antennas
 - Install DC power cable to radio equipment

- Install fiber cable to radio equipment
- Move wireless equipment to production
- Perform post installation testing
- Residence CPE Installation Services
- Insight will provide the following Services:
 - Configure the CPE RN and Indoor WiFi access point
 - Install all RN Radio and mounting bracket on exterior wall of residence facing Tower
 - Install WiFi access point and RN POE injector inside residence by wall closest to RN location
 - Install outdoor grade Category 6 cable from the RN to the indoor POE injector
 - Install patch cable between the WiFi access point and the RN POE injector
 - Install grounding wire, surge protection, and weatherproof all connectors on outdoor radio equipment
 - Power on equipment and move wireless equipment to production
 - Perform post installation testing

6.2.3. Phase III – Core Redundancy and End User Expansion

Design and Implement Redundant Network Core Buildout Planning Phase - 2 Locations

The network core will be expanded to include a redundant buildout in each municipality of Tornillo and Fabens. Each buildout of the core will be identical with the detailed installation of equipment listed below.

The high-level scope and approach to the build out by task is listed below:

Detailed Task of Equipment Installed

Tornillo and Fabens locations (identical buildouts)

- Provide network closet high availability build out for 2 locations, 1 for Tornillo and 1 for Fabens
 - Install and configure an additional Network Palo Alto Firewall with content filtering and with high availability mode in both locations
 - A total of 4 firewalls will be installed
 - Install and configure an additional Arista Core Network Switch in redundant mode
 - A total of 4 total switches will be installed

Insight assigned project manager, network architects, and engineering staff will work with El Paso County to develop a comprehensive network design to include the following:

- Update network design session to diagram and buildout the core network redundancy
 - Logical network diagrams
 - Physical network diagrams
 - IP address schema
 - VLAN Schema
 - Documented design
- Inventory the equipment
 - Firewalls
 - Switches
- Preconfigure the equipment based on the network design
 - Firewalls

- Switches
- Install and configure the equipment
 - Firewalls
 - Switches
- Test and tune the core network
- Document the core network
 - Logical diagrams
 - Physical diagrams
 - Backup configurations
- Wireless network test results for each location post installation

Wireless Network Expansion - 2 Locations

For itemized material provided see Exhibit 9 within this scope of work. The wireless buildout materials and parts list includes all external cabling, radios, and materials for the external wireless network. This includes all of the Client premise equipment and ongoing licenses and maintenance. Installation of all of the materials is included in this Statement of Work.

- Furnish and install Community Wireless Broadband equipment to expand the number of households in the Tornillo Community of El Paso County to include:
 - Design, install, and configure additional CPE locations on residence locations in the coverage area include a Tarana Point-to-Multipoint (PTMP) Remote Nodes (RNs), and an indoor Ruckus H350 access points
- Furnish and install Community Wireless Broadband equipment in the Fabens Community of El Paso County as a broadband POC network to include:
 - Design, install, and configure additional CPE locations on residence locations in the coverage area include a Tarana Point-to-Multipoint (PTMP) Remote Nodes and an indoor Ruckus H350 access points

Wireless Network Expansion Planning Phase

The purpose of this phase is to better understand the area, requirements, and determine the components and architecture of the network. Based on boundaries, general coverage and capacity requirements, redundancy requirements, device type, fiber location information, and any other asset agreements provided by Client, Insight will perform the following work:

- Update the high level design document containing:
 - Network requirements
 - Access point estimates from land use and general drive area
 - Radio and antenna mounting recommendations
- Update predictive model for coverage, identifying ingress/egress points, and exclusion areas

Residence CPE Installation Phase

Upon completion of the Wireless Network Expansion Planning Phases, Insight will provide the necessary documentation required to begin the expansion of connected households in each community.

- Work with El Paso County to define target households for installation
 - El Paso County will provide a priority list of households and their contact information that have been approved for connectivity to the Cotton Valley Connect network
 - Insight will contact the approved households to schedule Residence CPE Installation services

Residence CPE Installation will include the following:

- Define basic network configurations for nodes plus identify any site/node specific parameters

- Insight will provide the following Services:
 - Configure the CPE RN and Indoor WiFi access point
 - Install all RN Radio and mounting bracket on exterior wall of residence facing Tower
 - Install WiFi access point and RN POE injector inside residence by wall closest to RN location
 - Install outdoor grade Category 6 cable from the RN to the indoor POE injector
 - Install patch cable between the WiFi access point and the RN POE injector
 - Install grounding wire, surge protection, and weatherproof all connectors on outdoor radio equipment
 - Power on equipment and move wireless equipment to production
 - Perform post installation testing
 - Verify site is registered on Cloud controller and diagnostic portal
 - Obtain subscriber sign off on installation along with serial numbers of installed equipment.

Operations and Maintenance

- In Phase 3, the Cotton Valley Connect network will continue to include ongoing operations and maintenance that consists of:
 - Monitoring and management of all Radio Access Network (Base Nodes, Point-to-Point Links, and Wireless Mesh access points)
 - If a service disruption occurs, Insight's Support Team will isolate the issue and initiate corrective actions to restore services, including crew dispatch to align, repair or replace impacted radio equipment with onsite spare inventory
 - Monitoring, management, and support of all households connected to the Cotton Valley Connect network, including:
 - Customer Service Team – Online web and toll-free number for end users to request support or notify of outages
 - The Customer Service team will work with end users to resolve issues remotely, if possible, or schedule a crew to the house for onsite troubleshooting and repairs
 - Subscriber ACP billing services – Insight will work with subscribers to register for the Affordable Connectivity Program (ACP) to help ensure households can afford broadband services
 - New Service Requests - Residents in the coverage area can contact the Insight Customer Support team to request new service installation and activation
 - The Customer Service Team will schedule a crew to install the CPE network equipment at the new service address
 - Service Disconnect – Disconnect requests can be submitted to the Insight Customer Service Team
 - Disconnect dates will at date agreed to by subscriber and Insight
 - The subscriber will be required to return the indoor and exterior CPE equipment to avoid a non-returned equipment charge
 - Insight can schedule a crew to go onsite and remove the equipment for a disconnect service fee

Note: Phase 2 and Phase 3 include a total of 3 years of maintenance and support for the radio access (Base Node-PTP) and core network and security equipment. Maintenance and support include dispatch services, software maintenance, operational support for down equipment (Mesh APs, MAP/RAP) or network outages as well as monitoring, management, and (Helpdesk/Web) support for all households (Troubleshooting/Tier 1 Support –1-800 number and dispatch services/Tier 2 Support) connected to the Cotton Valley Connect Network. In addition, the ongoing support services includes ACP billing services as well as assisting clients with their initial ACP enrollment.

6.2.4. Out of Scope

1. The following are considered out-of-scope and are not part of the Services:
 - a. Moving/relocation of Client-owned hardware/active components (unless specifically detailed in Scope and Approach as part of the SOW Services)
 - b. Cable removal (unless specifically detailed in Scope and Approach as part of the SOW Services)
 - c. Union labor (unless specifically detailed in Scope and Approach as part of the SOW Services)
 - d. Drilling/coring through rooftops
 - e. Lifts unless outlined within this scope of work
 - f. Relabeling of existing patch cables
 - g. Data wiping or boxing of old equipment
 - h. Permitting processes and fees
2. Services and Deliverable items not expressly described in the Scope and Approach section are considered to be out of scope. Any out-of-scope items must be pre-authorized and verified by Insight in writing through the Change Request Form process.

6.3. Deliverables

Phase I

- In-scope data necessary for the Grant Submission for the United States Department of Agriculture (USDA) Rural Utilities Service (RUS) addendum to the Consolidated Appropriations Act, 2022 (Public Law 107-103, the CAA)
- Project acceptance and sign-off document

Phase II and III

- Project contact list
- Project escalation list
- Project kickoff deck
- Associated meeting minutes and agendas
- High-level design document
- Documentation of the final implementation
 - Logical and physical diagrams
 - Design documents
 - Configuration sheets
 - As-built documentation of installed network to include all outdoor wireless radio equipment
 - Provide a radio inventory to include Serial Numbers and MAC addresses
 - Configuration sheets
 - Post installation photos of each installed core network
- Residence CPE Installation Post Install deliverables for each installation use case
- Project acceptance and sign-off documents
 - Phase I to Phase II approval(s)
 - Phase II to Phase III approval(s)

6.4. Offering-Specific Client Responsibilities

1. Client will provide POC project candidates for each municipality, and these will be agreed upon prior to end point installations.
2. Client will provide network core installation locations at local school districts for the core network buildouts for each municipality, 2.
3. Insight will leverage 2 high site assets for mounting primary radio installations at each of the 2 network core installation sites.
4. Data circuits will be procured direct by El Paso County.
5. Client will be responsible for disposal or recycling of the cardboard, pallet, and other waste from the shipments and installation. Insight technicians will move such waste to a Client-defined location on the premises.
6. Client has existing EA Agreement for Windows licensing. No Microsoft Windows licensing fees included for DHCP Server.
7. The following sections are the sole responsibility for El Paso County to answer for the (Phase I: Grant Application Consultation) submission to the USDA grant request.
 - a. Section 1 - Unique Entity Identifier (UEI) Number
 - b. Section 10 - Tribal Government Resolution of Consent
 - c. Section 11 - Certifications

6.5. Offering-Specific Assumptions

1. Insight will perform the Services using the cabling best practices listed in the Exhibit(s) of this SOW.
2. Estimated Duration outlined in this SOW is for Services only and does not include material delivery lead time.
3. Insight will provide an assigned project manager and services manager for the project.
4. All products are provided by Insight "as is." Insight makes no representation, guarantee, or warranty, express or implied, with respect to any products. Insight will transfer to Client, to the extent transferable, whatever transferable warranties and indemnities Insight receives from the manufacturer of the Products. Insight will supply marked-up prints with drop locations and a corresponding cable schedule.
5. No Cost Internet services are provided only to End Users who qualify for the ACP Program
6. All requests for additional material must be submitted via fax or email for a T&M project and via signed CR for a fixed fee project.

7. Exhibit – Wireless Network Materials Provided – Tornillo

MATERIAL / EQUIPMENT DESCRIPTION	MANF. PART #	QUANTITY	
High School Tower Equipment			
TW 5.8GHz Base Node (BN), FCC	35-0134-001	2	ea
TW Base Node Pole Mounting Kit, 64-114mm Pole Diameter	34-0028-001	2	ea
DC Defender (DC Surge Protector) w/Mounting Kit (1101-1110) (Up to 100M)	35-0104-001	4	ea
Power Supply Outdoor AC_DC, 90-264V AC IN, 54V DC Out, 480W	44-0013-001	2	ea
SFP+ Short Range, Industrial Temp, Duplex LC connector Optical Transceiver Multi-Mode	73-0032-001	4	ea
50m Outdoor Shielded Power Cable with Harting Push-Pull Connector	33-0004-010	2	ea
Outdoor Multi-Mode Fiber Optic Cable With Harting SFP to LC (70m)	33-0021-070	2	ea
ICX 7150 Compact Switch, 2x 100/1000/2.5/5/10G PoH ports, 2x 100/1000/2.5G PoH ports, 6x 100/1000/2.5G PoE+ ports, 2x 10G SFP uplink-ports, 240W PoE budget, L3 features (OSPF, VRRP, PIM, PBR), 3 year remote support.	ICX7150-C10ZP-2X10GR-RMT3	1	ea
NEMA Box, 18x16x8 Inch 120 VAC Weatherproof Enclosure with Solid State Fan Controller	SWNB181608-10FS	1	ea
Grounding wire, weatherproofing, misc and consumable items	SWMISC	1	ea
FWA CPE plus In Home AP			
5.8 GHz Residential Node (RN), FCC, ISED - 100Mbps Throughput	35-0129-001	16	ea
TW Remote Node Mounting Kit	34-0027-001	16	ea
TW RN POE Injector	44-0017-001	16	ea
vSCG License supporting 1 Ruckus Access Points	L09-0001-SG00	16	ea
Perpetual license for WiFi analytics, to analyze 1 AP with SCI 2.0 ststem. Smart Licensing enabled (LiMAN)	L09-0001-SCIW	16	ea
Ruckus H350 802.11AX dual-band concurrent 2.4 GHz & 5 GHz, Wired/Wireless Wall Switch, MU-MIMO, BeamFlex+, 1 10/100/1000 & 2 10/100 Ethernet Access Ports, POE	901-H350-XX00	16	ea
Outdoor Grade Shielded Cat6 Cable Materials	SWCAT6OD	16	ea
Grounding wire, weatherproofing, misc and consumable items	SWMISC	16	ea
Park Mesh/CPE			
5.8 GHz Residential Node (RN), FCC, ISED - 100Mbps Throughput	35-0129-001	1	ea
TW Remote Node Mounting Kit	34-0027-001	1	ea
vSCG License supporting 1 Ruckus Access Points	L09-0001-SG00	2	ea
Perpetual license for WiFi analytics, to analyze 1 AP with SCI 2.0 ststem. Smart Licensing enabled (LiMAN)	L09-0001-SCIW	2	ea
Ruckus T750 802.11ax Outdoor Wireless Access Point, 4x4:4 Stream, Omnidirectional Beamflex+ coverage, 2.4GHz and 5GHz concurrent dual band, (1x) 2.5G Ethernet port, (1x) 10/100/1000 Ethernet port, 100-240 Vac, POE in and PSE out, Fiber SFP/SFP+, GPS, IP-67 Outdoor enclosure, -40 to 65C Operating Temperature.	901-T750-US00	2	ea
6-Port Gigabit Managed High Power 802.3bt PoE Switch with 4 PoE Ports and 2 SFP Fiber Gigabit Ports, 95W Per PoE Port, 300W Total	LPS3400ATMP-300-T1	1	ea
Linkpower Injector Converts 802.bt to 51V Passive PoE, Output 72W 1.41A	APC1048-BT	1	ea
Outdoor Pole Mounting Kit for Outdoor Switch	MMK0001-L	1	ea
Photocell Power Tap Continuous On; 120V; Base– Standard 7-pin Twist-lock per ANSI; C136.10; Cord length – 20 ft.; Cord Connection – pigtail; Circuit breaker – 10A, auto-reset; Load rating – 10A	SW-5771-20-1	2	ea
Grounding wire, weatherproofing, misc and consumable items	SWMISC	1	ea
Manufacturer Support, Network Monitoring/Optimization and Reporting			
SMS Yearly Access for RN - 1 Year	25-0056-001	17	ea
G1 RN BW License Upgrade - 1 Year License - DL Throughput from 50Mbps to 100Mbps	25-0019-001	17	ea
SmartWave Technical Support - CPE+Indoor AP - Cloud Controller, Network Monitoring, Ruckus Support, Optimization and Reporting - 1st Year	SWSPPT-RNHOME-1YR	16	ea
SmartWave Technical Support - Outdoor AP - Cloud Controller, Network Monitoring, Ruckus Support, Optimization and Reporting - 1st Year	SWSPPT-RNODAP-1YR	3	ea
SmartWave Technical Support - Base Nodes Only - Network Monitoring, Optimization and Reporting - 1st Year	SWSPPT-BN-1YR	2	ea

8. Exhibit – Wireless Network Materials Provided – Fabens

<u>MATERIAL / EQUIPMENT DESCRIPTION</u>	<u>MANF. PART #</u>	<u>QUANTITY</u>	
Gymnasium Equipment			
60GHz cnWave V3000 Client Node Radio Only	C600500C024A	1	ea
60GHz cnWave V3000 Client Node Antenna Assembly, 44.5 dBi	C600500D001A	1	ea
cnWave Precision Mounting Bracket	C000000L125A	1	ea
Waterproof PSU Cable Joiner 14-16 AWG	N000000L180A	2	ea
Cable Gland, Long, M25, Qty 5	C000000L124A	1	ea
Cable Gland for 6-9mm cable, M25, Qty 10	C000000L123A	1	ea
Grounding Cable, 0.6m with M6 ring to M6 ring	C000000L138A	1	ea
10G SFP+ MMF SR Transceiver, 850nm. -40C to 85C	SFP-10G-SR	1	ea
Outdoor Multi-Mode Fiber Optic Cable With Harting SFP to LC (70m)	33-0021-070	1	ea
Outdoor Grade Shielded Cat6 Cable Materials	SWCAT6OD	1	ea
PoE, 60W, 56V, 10GbE DC Injector, Indoor, Energy Level 6 Supply	60WPOE	1	ea
Non-penetrating Ridge Mount SLED, 10FT Mast, Protective Mat, Blocks	SWUR-288x10-R	1	ea
Grounding wire, weatherproofing, misc and consumable items	SWMISC	1	ea
Water Tank Equipment			
60GHz cnWave V3000 Client Node Radio Only	C600500C024A	1	ea
60GHz cnWave V3000 Client Node Antenna Assembly, 44.5 dBi	C600500D001A	1	ea
cnWave Precision Mounting Bracket	C000000L125A	1	ea
Grounding Cable, 0.6m with M6 ring to M6 ring	C000000L138A	1	ea
TW 5.8GHz Base Node (BN), FCC	35-0134-001	4	ea
TW Base Node Pole Mounting Kit, 64-114mm Pole Diameter	34-0028-001	4	ea
DC Defender (DC Surge Protector) w/Mounting Kit (1101-1110) (Up to 100M)	35-0104-001	8	ea
Power Supply Outdoor AC_DC, 90-264V AC IN, 54V DC Out, 480W	44-0013-001	4	ea
10G SFP+ MMF SR Transceiver, 850nm. -40C to 85C	SFP-10G-SR	1	ea
SFP+ Short Range, Industrial Temp, Duplex LC connector Optical Transceiver Multi-Mode	73-0032-001	4	ea
50m Outdoor Shielded Power Cable with Harting Push-Pull Connector	33-0004-010	4	ea
Outdoor Multi-Mode Fiber Optic Cable With Harting SFP to LC (70m)	33-0021-070	4	ea
ICX 7150 Compact Switch, 2x 100/1000/2.5/5/10G PoH ports, 2x 100/1000/2.5G PoH ports, 6x 100/1000/2.5G PoE+ ports, 2x 10G SFP uplink-ports, 240W PoE budget, L3 features (OSPF, VRRP, PIM, PBR), 3 year remote support.	ICX7150-C10ZP-2X10GR-RMT3	1	ea
NEMA Box, 18x16x8 Inch 120 VAC Weatherproof Enclosure with Solid State Fan Controller	SWNB181608-10FS	1	ea
Grounding wire, weatherproofing, misc and consumable items	SWMISC	1	ea
Apartment Complex WiFi Equipment and Gym Parking Area			
TW 5.8GHz Remote Node (RN), FCC	35-0128-001	2	ea
TW Remote Node Mounting Kit	34-0027-001	2	ea
vSCG License supporting 1 Ruckus Access Points	L09-0001-SG00	8	ea
Perpetual license for WiFi analytics, to analyze 1 AP with SCI 2.0 ststem. Smart Licensing enabled (LiMAN)	L09-0001-SCIW	8	ea
Ruckus T750 802.11ax Outdoor Wireless Access Point, 4x4:4 Stream, Omnidirectional Beamflex+ coverage, 2.4GHz and 5GHz concurrent dual band, (1x) 2.5G Ethernet port, (1x) 10/100/1000 Ethernet port, 100-240 Vac, POE in and PSE out, Fiber SFP/SFP+, GPS, IP-67 Outdoor enclosure, -40 to 65C Operating Temperature.	901-T750-US00	6	ea
Ruckus T750-S 802.11ax Outdoor Wireless Access Point, 4x4:4 Stream, MU-MIMO, 120 degree sector Beamflex+ coverage, 2.4GHz and 5GHz concurrent dual band, Dual 10/100/1000 Ethernet ports, POE in, IP-67 Outdoor enclosure, -40 to 65C	901-T750-US51	2	ea
Photocell Power Tap Continuous On; 120V; Base– Standard 3-prong Twist-lock per ANSI; C136.10; Cord length – 20 ft.; Cord Connection – pigtail; Circuit breaker – 10A, auto-reset; Load rating – 10A	SW-5771-20-1	8	ea
Outdoor Grade Shielded Cat6 Cable Materials	SWCAT6OD	2	ea
Non-penetrating Flat Mount SLED, 5FT Mast, Protective Mat, Blocks	SWB3-288x5-R	2	ea
6-Port Gigabit Managed High Power 802.3bt PoE Switch with 4 PoE Ports and 2 SFP Fiber Gigabit Ports, 95W Per PoE Port, 300W Total	LPS3400ATMP-300-T1	2	ea
Linkpower Injector Converts 802.bt to 51V Passive PoE, Output 72W 1.41A	APC1048-BT	2	ea
Outdoor Pole Mounting Kit for Outdoor Switch	MMK0001-L	2	ea
Grounding wire, weatherproofing, misc and consumable items	SWMISC	1	ea

FWA CPE plus In Home AP			
5.8 GHz Residential Node (RN), FCC, ISED - 100Mbps Throughput	35-0129-001	9	ea
TW Remote Node Mounting Kit	34-0027-001	9	ea
TW RN POE Injector	44-0017-001	9	ea
vSCG License supporting 1 Ruckus Access Points	L09-0001-SG00	9	ea
Perpetual license for WiFi analytics, to analyze 1 AP with SCI 2.0 ststem. Smart Licensing enabled (LiMAN)	L09-0001-SCIW	9	ea
Ruckus H350 802.11AX dual-band concurrent 2.4 GHz & 5 GHz, Wired/Wireless Wall Switch, MU-MIMO, BeamFlex+, 1 10/100/1000 & 2 10/100 Ethernet Access Ports, POE	901-H350-XX00	9	ea
Outdoor Grade Shielded Cat6 Cable Materials	SWCAT6OD	9	ea
Grounding wire, weatherproofing, misc and consumable items	SWMISC	9	ea
Manufacturer Support, Network Monitoring/Optimization and Reporting			
SMS Yearly Access for RN - 1 Year	25-0056-001	11	ea
G1 RN BW License Upgrade - 1 Year License - DL Throughput from 50Mbps to 100Mbps	25-0019-001	0	ea
G1 RN BW License Upgrade - 1 Year License - DL Throughput from 50Mbps to Uncapped	25-0021-001	0	ea
SmartWave Technical Support - CPE+Indoor AP - Cloud Controller, Network Monitoring, Ruckus Support, Optimization and Reporting - 1st Year	SWSPPT-RNHOME-1YR	9	ea
SmartWave Technical Support - Outdoor AP - Cloud Controller, Network Monitoring, Ruckus Support, Optimization and Reporting - 1st Year	SWSPPT-RNODAP-1YR	10	ea
SmartWave Technical Support - Base Nodes Only - Network Monitoring, Optimization and Reporting - 1st Year	SWSPPT-BN-1YR	6	ea

9. Exhibit – Phase 3 Wireless Network Expansion Materials

<u>MATERIAL / EQUIPMENT DESCRIPTION</u>	<u>MANF. PART #</u>	<u>QUANTITY</u>	
Remote Node Equipment			
5.8 GHz Residential Node (RN), FCC, ISED - 100Mbps Throughput	35-0128-001	425	ea
Remote Node (RN) Mounting Kit	34-0027-001	425	ea
RN PoE Injector	44-0017-001	425	ea
Power Cord - US, for use with 44-0013-001 power supply	50-0012-001	425	ea
POE Surge Protection Unit	SWCMJPOE8A	425	ea
Heavy Duty Universal Mount, 18" x 2" OD mast	WCA-HDMB-18	425	ea
Cat6 100ft Black Outdoor Patch Cable, UTP, 24AWG, 550MHz, Pure Bare Copper, Molded Snagless RJ45, Zeroboot Series Ethernet Cable	MP36218	425	ea
vSCG License supporting 1 Ruckus Access Points	L09-0001-SG00	425	ea
Perpetual license for WiFi analytics, to analyze 1 AP with SCI 2.0 system. Smart Licensing enabled (LiMAN)	L09-0001-SCIW	425	ea
Ruckus Wi-Fi 6 dual-band concurrent 2.4 GHz & 5 GHz, Wired/Wireless Wall Switch, BeamFlex+, 1 10/100/1000 & 2 10/100/1000 Ethernet Access Ports, POE in	901-H350-XX00	425	ea
Grounding wire, weatherproofing, misc and consumable items	SWMISC	425	ea
Manufacturer Support, Network Monitoring/Optimization and Reporting			
BN Extended Warranty Two Year	37-0011-001	6	ea
SmartWave Technical Support - Outdoor AP - Cloud Controller, Network Monitoring, Ruckus Support, Optimization and Reporting - Includes Truck Rolls	SWSPPT-RNODAP-2YR	8	ea
SmartWave Technical Support - Base Nodes Only - Network Monitoring, Optimization and Reporting - Includes Truck Rolls	SWSPPT-BN-2YR	6	ea
Spare Inventory			
TW 5.8GHz Base Node (BN), FCC	35-0134-001	1	ea
Ruckus T750 802.11ax Outdoor Wireless Access Point, 4x4:4 Stream, Omnidirectional Beamflex+ coverage, 2.4GHz and 5GHz concurrent dual band, (1x) 2.5G Ethernet port, (1x) 10/100/1000 Ethernet port, 100-240 Vac, POE in and PSE out, Fiber SFP/SFP+, GPS, IP-67 Outdoor enclosure, -40 to 65C Operating Temperature.	901-T750-US00	1	ea
5.8 GHz Residential Node (RN), FCC, ISED - 100Mbps Throughput	35-0129-001	5	ea
TW Remote Node Mounting Kit	34-0027-001	5	ea
TW RN POE Injector	44-0017-001	5	ea
Ruckus H350 802.11AX dual-band concurrent 2.4 GHz & 5 GHz, Wired/Wireless Wall Switch, MU-MIMO, BeamFlex+, 1 10/100/1000 & 2 10/100 Ethernet Access Ports, POE	901-H350-XX00	5	ea

10. Exhibit – Cabling Best Practices

The following are the cabling best practices specified and implemented by Insight for all cabling projects.

Architecture and Installation

- All cable pathways will be secured to the building and installed in accordance with industry standards, best practices, and specifications
- J-Hooks will be installed in staggered intervals of 4-5 feet
- The cable pathways, if possible, will be installed to allow a minimum of 12 inches between the cables and the suspended ceiling
- All cables will be installed point-to-point, or “home run”. The cables will be installed in a manner to assure the aesthetics of the building are maintained

Copper

- Insight will ensure the installed cables meet the applicable fire ratings and are installed in a manner to ensure maximum performance of the cable is maintained. This will include, but is not limited to, ensuring the bend radius of the cable is not exceeded, the cable is not nicked or cut, appropriate cable pathway support, and the appropriate use of cable ties
- Insight will ensure no horizontal cable link length exceeds 295 feet
- Lightning protection will be installed on both ends and properly grounded for all copper cables installed outside of the building structure and the lightning cone of protection
- To meet the proper termination requirements and channel performance, the cable sheath shall be stripped back no more than the manufacturer recommended length. Twists of the individual pairs will remain intact up to the cable's termination point
- Outdoor-rated PVC cable may only enter a building for a maximum of 50 feet. If it is practical, the primary protector should be mounted within 50 feet of the entry point. Should the length of the cable exceed 50 feet, the entire length inside the building will be installed in an appropriate-sized rigid metal conduit or Indoor/Outdoor (I/O) copper cable will be used

Fiber Optic

- Insight will ensure all fiber optic cable meets the applicable fire ratings. The fiber optic cables will be installed in a manner to assure the maximum performance of the fiber is maintained
- Insight will install the fiber to ensure the entire length of fiber is protected and each end will be secured in the Light Interface Unit
- Outdoor-rated PVC cable may only enter a building for a maximum of 50 feet. Should the length of the cable exceed 50 feet, the entire length inside the building will be installed in an appropriate-sized rigid metal conduit or Indoor/Outdoor (I/O) fiber will be used

Equipment Racks/Cable Management

- All equipment, conduit, racks, and panel boards shall be anchored for seismic stability in accordance with the latest State and Local Codes, but not less than the requirements as set forth in the currently enforced addition of the Uniform Building Codes
- All 2- and 4-post equipment racks will be anchored and secured to the floor. All cable trays or ladder racks will be mounted and secured to the wall and the equipment cabinet or rack to provide horizontal support
- 7-foot floor racks will have vertical cable management installed on each side
- All wall mount racks and cabinets will be mounted to a ¾” fire-retardant plywood and secured to 2 studs minimum (3 studs preferred when possible) using 2 anchors per stud minimum (3 anchors preferred when possible). The cabinet will be secured to the plywood using a heavy-duty and appropriately rated toggle bolt to support the weight of the rack or cabinet. Installations in a concrete wall will utilize drop-in anchors and lag bolts. Any installation outside of this standard will require Client signoff
- All racks will be grounded and bonded to a ground bus bar in each distribution closet utilizing green #6 AWG copper cable

- Horizontal cable management will exist for each Light Interface Unit unless built-in wire management is included in the Light Interface Unit
- All cables and inner-duct will be routed neatly into the rack and secured to the panels utilizing strain relief as specified by the manufacturer
- Unless otherwise specified, starting at the top of the rack, the rack layout will be as follows:
 - Light Interface Unit
 - Horizontal cable management
 - Patch panels

Conduit and Wall/Floor Penetrations

- Any conduit that is to be placed will follow these requirements:
 - Above ground, EMT, or rigid (metal conduit, depending on the application)
 - Below ground, schedule 40 electrical grade PVC
 - For indoor conduit, EMT, or rigid (metal conduit, depending on the application)
- Any penetrations of floors, firewalls, and/or exterior walls will be sleeved and fire stopped
- Sleeves in floor penetrations should extend above the finished floor by at least 1 inch

Labeling

- All labels will be adhesive P-Touch or laser-type labels (white backing with black letters) or as specified by Client
- Insight will work with Client prior to the start of the project to ensure the labeling scheme matches Client's current labeling scheme
- All cables will be labeled on the sheath no more than 2 inches from the jack and patch panel termination points utilizing machine generated wraparound cable labels

Surface-Mounted Raceway, Boxes, and Faceplates

- Blank inserts will be installed in any non-used faceplate positions
- Faceplates will be properly secured to the wall box, or wall box eliminator if no wall box is available
- All surface-mount raceway and boxes will be secured with anchors. The surface-mounted raceway and box will be secured with a minimum of 2 anchors per section or piece. Gluing or using the adhesive on the back of the raceway or box as the sole means of securing the raceway or box is unacceptable
- All surface-mount raceway will be installed in a manner that is both aesthetically pleasing and straight on both the horizontal axis and vertical axis
- To avoid pinching of the cable and to provide an adequate cable pathway, all surface-mount raceway will be installed 2-3 inches above the ceiling tile
- Where possible and feasible, surface mount boxes will be installed to align horizontally with existing outlets

Testing and Certification

- All circuits will be tested and certified to meet minimum requirements for the media installed. These requirements include, but are not limited to, the following:
 - Wiremap
 - Impedance
 - Length
 - Resistance
 - Attenuation
 - Near-end and far-end crosstalk
 - Alien crosstalk

- Return loss
- Opens, shorts, grounds, and pair reversal
- Marginal Pass (PASS*) is not acceptable and will be remedied until verified as PASS. However, if the Marginal Pass is due to the overall length, the marginal pass will be accepted
- All fiber optic strands will be tested with a power meter and light source
- The dB lost for each strand will not exceed the calculated loss budget

Personnel Performance and Actions

- All Insight personnel and subcontractors will adhere to the state, local, and Client rules and regulations
- Each member will present themselves in a professional manner at all times
- All personnel will strictly adhere to the policies set forth by Client and site requirements