Agenda Item 13.
December 5, 2022
Prepared by Matt McCollough
Information Technology

I. SUBJECT, ATTACHMENTS, AND BACKGROUND

Consider and take action regarding approval of proposal from Motorola Solutions for 800MHz Radio Upgrade to be utilized by Bartlesville Police Department for $1,999,875.

Attachments:
Proposal for Radio Upgrade
Oklahoma State Contract SW1053M Summary

II. STAFF COMMENTS AND ANALYSIS

For several years, the Bartlesville Police Department has been having communication issues with officers' handheld radios in the field. The lower frequency range of the VHF frequency band has caused the issue. Additionally, our dispatch facility, built in 2012, has end of life equipment from the same 10-year-old timeframe. In addition to our communication issues, our analog system does not have the ability to connect to other statewide agencies. However, by building an 800MHz Radio System in Bartlesville, we would address the lack of communications and be able to gain critically important mutual aid with more communities, the Oklahoma Highway Patrol, as well as Oklahoma State Bureau of Investigation and Oklahoma Department of Transportation, extending the statewide radio network to the northeastern corner of the state.

Motorola Solutions offers the public safety communication system needed by the City of Bartlesville via the State of Oklahoma contract. They are the only vendor who offers a direct connection to the current statewide safety communication system with full functionality, making them a sole source vendor. The state and Motorola have agreed upon both equipment and services. Utilizing the state contract bidding system has proven effective in previous City purchases as we have gained money saving opportunities as well as efficiencies with the purchase of City technology needs (both hardware and software alike) as well as City vehicles,etc. It is important to note that we have had great success with the Motorola radio communications equipment that has been in use by our dispatchers 24/7 for the last ten years. Motorola is also the current provider of our Bodycams for Patrol Officers, our In-Car Camera Systems in Patrol Units as well as our 911 Phone System.

The citizens passed a GO bond in 2020, which approved $2,000,000 for an emergency communication infrastructure system. At that time, staff began review of purchase options for this project, however due to many economic and environmental factors, the costs continued to climb causing the project to be inflated over $2,500,000. Motorola has since offered discounts, which bring the total project cost within budget. By utilizing the GO bond funds previously passed, we are now able to consider the purchase of a new 800MHz digital system to mitigate our critical communication issues for our local public safety.

The necessary upgrade and purchase of this system will provide the City of Bartlesville via Bartlesville Police Department:

1. A direct connection to the existing State of Oklahoma, OKWIN APCO Project 25 (P25) core or master site located in Tulsa,
2. Upgraded backend radio equipment at the current dispatch location,
3. Replacement of the dispatch radio computers,
4. Eighty officer handheld radios,
5. Forty-five patrol car radio units,
6. Replacement of the east side repeater site,
7. Replacement of all downtown radio site equipment, and
8. A critical network connection between the 800MHz local system with the statewide system mutual aid system.

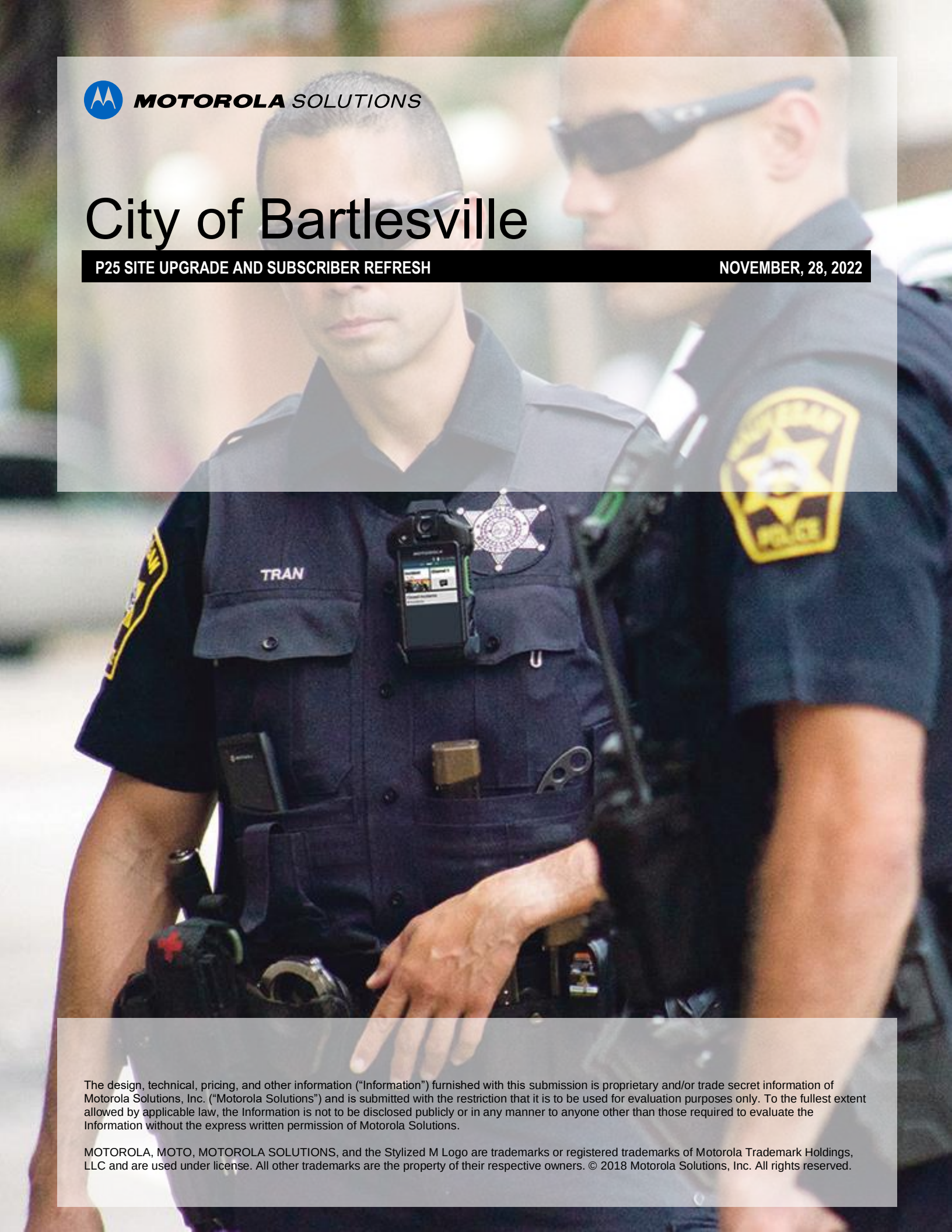
III. RECOMMENDED ACTION

Staff recommends approval of the Motorola Solutions 800MHz system, utilizing the state contract. The recommendation is within our budgetary constraints and meets all of the functional requirements as identified by staff including creation of a statewide alliance for mutual aid, therefore benefiting others in addition to Bartlesville citizens.

MOTOROLA SOLUTIONS

City of Bartlesville

P25 SITE UPGRADE AND SUBSCRIBER REFRESH **NOVEMBER, 28, 2022**



Motorola Solutions, Inc.
500 W Monroe Street, Ste 4400
Chicago, IL 60661-3781
USA

11-28-2022

City of Bartlesville
Attn. Capt. Jay Hastings
615 S Johnstone
Bartlesville, OK. 74003

RE: P25 Upgrade and Subscriber Proposal

Dear Captain Hastings,

Motorola Solutions is pleased to provide the City of Bartlesville with a proposal to add an ASR site to meet their communication and coverage needs. The radio subsystem includes a (6)-channel FDMA ASTRO P25 trunked 800 MHz site based on Motorola Solutions' ASTRO 25 architecture. The site will connect to the OKWIN master site via customer provided backhaul.

The proposed location for a six-channel trunked repeater site is at 36 44 57.7N, 95 58 43.4W. The radio and network equipment will be installed in an existing shelter atop the Phillips 66 building. This cabinet will house the RF radio site system as well as the networking and site monitoring equipment. The existing antenna system will be reused for the new ASR site provided in this proposal.

The proposed offering consists of a Motorola ASTRO 25 radio site with the GTR 8000 ESS. This will be an FDMA-Only Site. The repeater site will utilize Motorola Solutions' G-series RF equipment. The necessary Phase I site licenses for the proposed sites and master site are also included.

Also included in this proposal is a MCC7500E consoles solution to replace the City of Bartlesville's aging and discontinued MCC5500 dispatch system. Additional details are provided in the full proposal.

This proposal is based upon and subject to the terms and conditions of the State of Oklahoma Office of Management and Enterprise Services, Oklahoma Statewide Contract No. SW1053M, executed on November 21, 2022, and remains valid for a period of 45 days from the date of this letter. The State may accept this proposal by issuing a purchase order or notice to proceed document referencing the "Subject to the terms and conditions of the State of Oklahoma Office of Management and Enterprise Services, Oklahoma Statewide Contract No. SW1053M."

Any questions regarding this proposal can be directed to Jason Smalley, Account Manager at 918-808-1669, jason.smalley@motorolasolutions.com.

Sincerely,

Clay Cassard
Territory 6 Vice-President -Texas and Oklahoma
MOTOROLA SOLUTIONS, INC.

TABLE OF CONTENTS

SECTION 1

SYSTEM DESCRIPTION

1.1 ASTRO 25 ADD-ON SITE DESCRIPTION

1.1.1 Introduction

Motorola Solutions is pleased to provide the City of Bartlesville with a proposal to add an ASR site to meet their communication and coverage needs. The radio subsystem includes a (6)-channel FDMA ASTRO P25 trunked 800 MHz site based on Motorola Solutions' ASTRO 25 architecture. The site will connect to the OKWIN master site via customer provided backhaul.

The proposed location for a six-channel trunked repeater site is at 36 44 57.7N, 95 58 43.4W. The radio and network equipment will be installed in an existing shelter atop the Phillips 66 building. This cabinet will house the RF radio site system as well as the networking and site monitoring equipment. The existing antenna system will be reused for the new ASR site provided in this proposal.

The proposed offering consists of a Motorola ASTRO 25 radio site with the GTR 8000 ESS. This will be an FDMA-Only Site. The repeater site will utilize Motorola Solutions' G-series RF equipment. The necessary Phase I site licenses for the proposed sites and master site are also included.

In addition to the ASR site, Motorola is providing a backup GTR8000 Conventional Base Radio site at the BVO Water Tank.

Also included in this proposal is a MCC7500E consoles solution to replace the City of Bartlesville's aging and discontinued MCC5500 dispatch system. Additional details are provided in the sections below.

As a part of this proposal, City of Bartlesville will also be provided with new APX subscribers as detailed in the sections below.

Motorola Solutions has taken great care to propose an offering that will provide a solution that meets the City of Bartlesville's communications needs. A description of the features, benefits, system architecture, and hardware components are provided in this system description.

1.1.2 System Components

The proposed solution includes the following equipment.

- One (1) GTR8000 Expandable Site Subsystem with six (6) Channels.
- Two (2) Site Routers.
- One (1) SDM 3000 Advanced site manager.
- One (1) KVL 5000

*Existing antenna systems will be re-used for this project. Any issues with it, will require replacement of the antenna system which is currently not included in this project.

Master Site Licenses:

- One (1) FDMA site license
- One (1) UNC additional device licenses
- One (1) pack of radio user licenses to support 500 subscribers

Along with an ASR site, the following subscribers have also been included in the project:

- Eighty (80) APX 4000 portables
- Forty-Five (45) APX 4500 dash mount mobiles

Following options have been included on the APX subscribers:

- Compatibility with 9600 Baud Operation
- O2 control head with Dash mount option on the Mobiles
- IMPRES RSM with 3.5mm audio jack option
- 80 single unit chargers
- 2 Multi unit chargers
- 5-year essential service

The BVO Water Tank will consist of one (1) GTR8000 Conventional Base Radio operating on the 800MHz band. The radio will be installed in an outdoor cabinet at the Water Tower along with the following equipment:

- Qty (1) GTR8000 Base Radio
- Qty (1) 800 MHz Duplexer
- Qty (1) Base Radio Preselector
- Qty (1) Antenna System

An update to the existing MCC5500 dispatch at BVO PD is also included in the project with 4 new MCC7500E consoles. New control stations are included to replace existing control stations and enable the dispatchers to talk over the air to users in the field. The following equipment is included at the dispatch:

- Four (4) MCC7500E consoles with the related accessories and backroom equipment.
- Nine (9) XPR5550 control stations – seven (7) VHF and two (2) UHF to replace existing control stations. With a Tone Remote Adapter.
- Seven (7) APX 4500 800MHz control stations
- Will reuse existing antenna lines for VHF and UHF control stations, subject to line sweeps
- New antennas and control station combiner for 800MHz control stations is included
- The existing MTR2000 base station will be interfaced with new consoles
- A 12-port and an 8-port 800MHz Control Station Combiners will be installed at the dispatch for the APX 4500 Control Stations and further expansion along with the necessary cable and coax lines.
- Qty (3) GGM8000 8-port Conventional Channel Gateways will be installed to interface the control stations with the MCC7500E consoles.
- Qty (2) 24-Port LAN Switches

- Qty (2) GGM8000 Site Routers
- Qty (1) GCP 8000 Site Controller with Dispatch operation

The dispatch consoles will be interfaced with the existing logger; no new logging solution is included.
Any update required to be made to the existing logger will be customer responsibility. Motorola demarc is the punch block that transfers control station audio to the logging system. This is expected to be within 10 feet of the radio rack.

Note: The XPR5000 control stations being non-P25 devices, they will only transmit audio to the consoles via the CCGWs. Other metadata such as location or alerting will not be transmitted to the consoles. In order for them to be compatible with the system, a Tone Remote Adapter (TRA) has been added to be used between the XPR radios and the Conventional Channel Gateway.

Also included in this proposal is GenWatch solution as described in the equipment list section.

1.2 SYSTEM COMPONENTS

1.2.1 ASTRO 25 Repeater Site

An ASTRO 25 Repeater Site consists of a single site with up to 28 channels and two site controllers (in a redundant configuration), which can be standalone or housed in a GTR 8000 Expandable Site Subsystem (ESS).

The GTR 8000 Expandable Site Subsystem in a repeater site is set up in a single trunked site, with one active control channel and a number of voice channels at the site. If packet data services are supported at the site, a number of voice channels can be configured with packet data channel capability. Voice traffic is routed from each of the base radios to the system for distribution to other sites and is repeated by the base radios to support other local subscribers. However, data traffic is routed to the GCP 8000 Site Controller. The site controller routes these packets upstream to the zone controller for further processing and routing.

The ASTRO 25 Repeater Site consists of the following components, described in the Component Descriptions section of this System Description.

- GTR 8000 Expandable Site Subsystem (ESS).
- GTR 8000 Repeater/Base Radio.
- GCP 8000 Site Controller.
- Radio Frequency Distribution System (RFDS).
- GGM 8000 Site Gateway.

1.2.2 Components

Each site type in an ASTRO 25 system contains various components. Components included in this system design are described in this section.

1.2.2.1 GTR 8000 Expandable Site Subsystem

The GTR 8000 Expandable Site Subsystem (ESS) enclosure can contain reconfigured GTR 8000 base stations, site LAN switches, and GCP 8000 controllers, along with an optional Radio Frequency Distribution System (RFDS), depending on your configuration needs.

Voice traffic is routed from each of the site base stations to the system for distribution all sites associated with the call. Benefits of the ESS include:

- **Integrated Design** – Provides a smaller footprint at the site.
- **Front/Top Access Design** – Minimized cabling reduces install and service labor.
- **Increased Power Supply** – Provides redundancy through common power bus.

1.2.2.2 GTR 8000 Site Repeater/Base Radio

The GTR 8000 Base Radio consists of transceiver module, power amplifier module, fan module, and power supply. The transceiver module includes the functionality for the exciter, receiver, and station control. The base radio software, configuration, and network management, as well as inbound/outbound traffic handling, are performed through this transceiver module. On-board serial and Ethernet ports are located on this module for local servicing via Configuration/Service Software (CSS).

The power amplifier module amplifies the low-level modulated RF signal from the transceiver module and delivers the amplified signal on the path to the transmit antenna. The power supply module supports the transceiver and power amplifier modules, and can also provide auxiliary power to a connected site controller or Receive Multicoupler/Low Noise Amplifier (RMC/LNA).

1.2.2.3 Gateway

The Gateway is a modular multi-purpose network communications platform, designed to interconnect devices and networks within ASTRO 25 public safety network systems.

It provides a connection to a Wide Area Network (WAN) with no conventional channel interface (V.24, analog, and/or IP).

1.2.2.4 GCP 8000 Site Controller

The GCP 8000 Site Controller (GCP 8000) is the control interface between the transmitter/receiver subsystem and the Zone Controller. The GCP 8000 Site Controller comprises redundant site controller modules; one site controller module acts as the active module, and the second module acts as a standby. The redundancy minimizes the possibility of a single point of failure at the site.

The GCP 8000 provides the following functions:

- Manages the channels to maximize throughput and channel availability.
- Administers registration and context activation requests.
- Monitors base stations and RF distribution equipment and interacts with the MOSCAD site device manager to facilitate centralized alarm and control monitoring.
- Provides redundant site control.
- Enables redundant site link routing for patch redundancy.

Additionally, the GCP 8000 provides the following functions at simulcast sites:

- Provides a time and frequency reference signal to the base stations, maximizing frequency stability and allowing for further site separation in a simulcast configuration.
- Provides IP simulcast capability, enabling true end-to-end IP connectivity in a simulcast configuration.

1.2.2.5 Radio Frequency Distribution System

The Radio Frequency Distribution System (RFDS) provides interconnect between the base radios and antennas, allowing for a completely contained and more compact installation footprint. For the transmitters, this can include isolators, combiners, TX filters, diplexers, and power monitors.

For the receivers, this can include duplexers, site preselectors, and multicouplers. Various RFDS options exist for each of the GTR 8000 Base Radio, GTR 8000 Site Subsystem, and GTR 8000 Expandable Site Subsystem.

1.3 BACKHAUL SOLUTION (PROVIDED BY CITY OF BARTLESVILLE)

The site requires a backhaul link to OKWIN master site. The customer will provide this link/links. The City of Bartlesville can choose to provide redundant links as the site is equipped with redundant site routers. These links should be layer 3 links. The specifications for the site link are as follows:

1.3.1 Bandwidth:

The bandwidths referenced are the minimums that need to be provided to ensure performance of a fully utilized site. The port speed and/or internal backhaul network may need to be greater to ensure the jitter specification is met.

A minimum of 3 Mbps of bandwidth is required.

1.3.2 Tolerance to Backhaul Network Congestion or Outage:

- Repeater Site Links: 2 seconds

1.3.3 Latency

- Latency or IP Packet Transfer Delay is defined per RFC 2681. It is usually in the range of 5 to 60 ms one-way per hop, depending on system type, size, structure, etc.
- The maximum End-to-End Delay cannot exceed a total of 100 milliseconds

1.3.4 Jitter

The measurement method for jitter is based on RFC 3393 (Section 2.4) and ITU-T Recommendation Y.1541. RFC 3393 specifies the calculation of inter-packet delay variation

(IPDV). ITU-T Y.1541 uses IPDV to calculate jitter. All jitter specifications are 99th percentile values. The jitter specification must apply when passing standard 1500 byte packets.

In non-simulcast configurations the jitter budget needs to be kept to 20ms or less. The 20msisa99thpercentile value and is based on Y.1541 method of calculation.

1.3.5 Packet Loss

This refers to "Type-P-One-Way-Packet-Loss" as defined in RFC 2680, section 2.4. In the context of audio for the ASTRO 25 network, reordered packets are also considered packet loss.

The specification for end to end packet loss is no more than 0.01%. Packet loss is additive and can be combined among all the link segments.

1.3.6 QOS Mechanisms

Four QoS levels are recommended for optimal user experience, but at least 2 are required.

The following QoS mechanisms are supported:

- Layer 3 (ToS or DSCP).
- Layer 2 (802.1p Priority).

Motorola would match the QoS of the Microwave provider between 0 to 7 (7 being the highest). Hence we would need to know this information once you have your link configured.

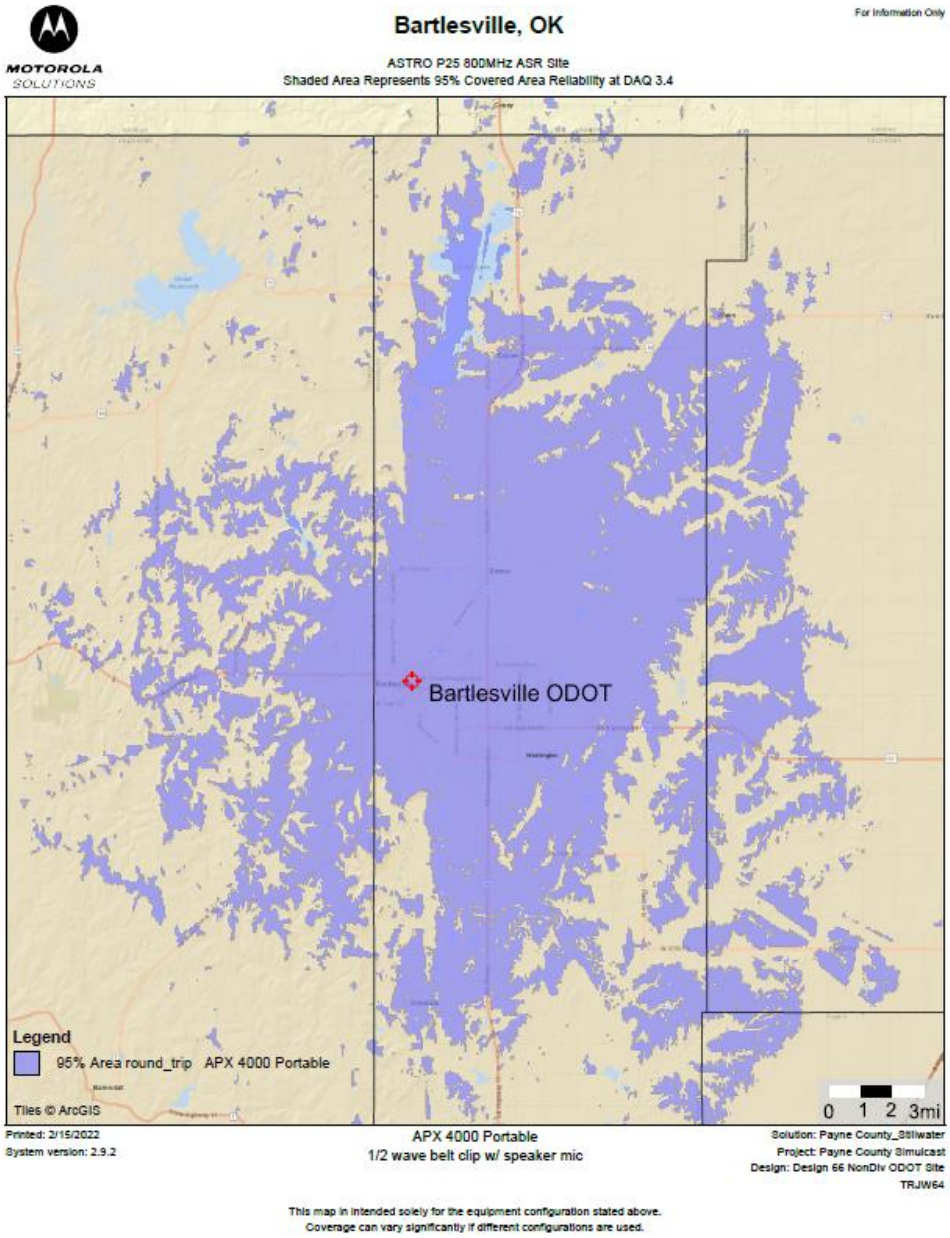
Here is what we currently recommend:

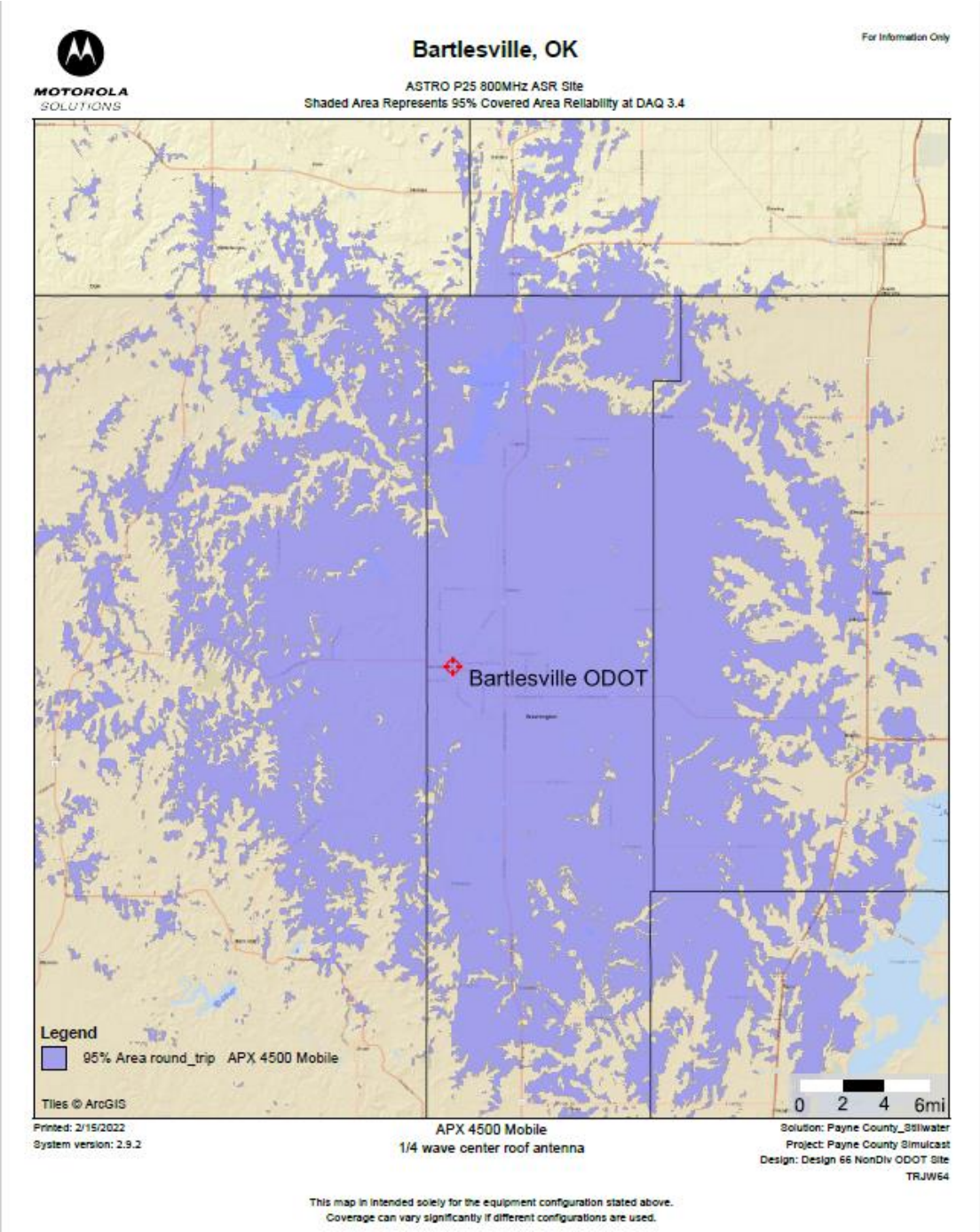
- Highest Mapped QoS value: 6.
- Number of Priority QoS levels: 4.
- QoS type: CoS –L2

SECTION 2

COVERAGE DESIGN

Please see below the coverage maps showing extended portable and mobile coverage. These maps are ***informational only*** maps and are dependent on the existing antenna system performance. No coverage guarantee is included in this proposal. Motorola will provide coverage measurements during the implementation of this project to show the performance of this site.





Coverage parameters:

The coverage is shown for 90% covered area reliability at DAQ 3.0. The site design parameters are mentioned in the table below. The existing antenna system is used for this coverage prediction. Any changes or issues with the antenna system will change the coverage map.

Site Name	Latitude	Longitude	TX Ant Type	TX Ant Height	RX Ant Type	RX Ant Height	ERP
Bartlesville ASR	36°44’57.7” N	95°58’43.4” W	BCD-80010-25 (10 dB omni)	310 ft	BCD-80010-25 (10 dB omni)	310 ft	52.4466 dBm

SECTION 3

EQUIPMENT LIST

RF Site Equipment

QTY	NOMENCLATURE	DESCRIPTION
1	SQM01SUM0273	MASTER SITE CONFIGURATION
1	CA02629AC	ADD: EXPAND 7.17 M CORE
1	UA00153AA	ADD: ASTRO 25 FDMA SITE LICENSE
1	UA00407AA	ADD: CLASSIC DATA-P25 TRNK SITE
2	CA01316AA	ADD: UNC ADDTL DEVICE LIC (QTY 10)
1	UA00152AA	ADD:500 RADIO USER LICENSES
1	SQM01SUM0205	GGM 8000 GATEWAY
1	CA01616AA	ADD: AC POWER
1	SQM01SUM0205	GGM 8000 GATEWAY
1	CA01616AA	ADD: AC POWER
1	SQM01SUM7054	GTR 8000 EXPANDABLE SITE SUBSYSTEM
1	CA00717AA	ADD: ASTRO SYSTEM RELEASE 7.17
1	CA00855AA	ADD: 700/800 MHZ
1	X306AC	ADD: QTY (6) GTR 8000 BASE RADIOS
6	X591AE	ENH: ASTRO 25 SITE REPEATER SW
1	CA02684AA	ADD: AC ONLY POWER DISTRIBUTION
1	CA00862AA	ADD: SITE & CABINET RMC W/CAPABILITY OF 7-24 BRS
1	CA00879AA	ADD: PRIMARY 6 PORT CAVITY COMBINER
1	CA00883AA	ADD: 800 MHZ TX FILTER W/PMU
2	CA00303AA	ADD: QTY (1) SITE CONTROLLER
2	CA02219AA	ADD: ASTRO 25 SITE REPEATER SITE CONTROLLER SOFTWARE IV&D
1	CA00293AA	ADD: 43RU SCHROFF CABINET
6	DS3500072	NEMA 5-20 TO IEC C15 CORD, 10 FT FOR GTR RACKS
1	T8343	GSERIES SOFTWARE LICENSING
4	UA00401AA	ADD: GSERIES BR-P25 TRNK ST RPTR
2	UA00406AA	ADD: GSERIES SC-P25 TRNK ST RPTR
2	DSTSJ48CLT	SPD, RJ-45 OR HARDWIRE CONNECTED FOR T1/E1, PROTECTS 4 WIRES
2	DSTSJADP	RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS
4	0784469Y02	BRKT, CBL SUPPORT
1	DSOP820B	PDU, 120V HARDWIRE (8) 20A OUTLET PDU WITH TYPE 3 SAD PROTECTION
1	3182602Y06	GROUNDING BUS BAR
1	DLN6455	CONFIGURATION/SERVICE SOFTWARE
1	F4544	SITE MANAGER ADVANCED
1	V266	ADD: 90VAC TO 260VAC PS TO SM
1	VA00872	ADD: SDM ASTRO RTU FW CURR ASTRO REL
3	V592	AAD TERM BLCK & CONN WI
1	DSMW3HE11473BE	MOTOROLA 7705 SAR-A BUNDLE - REDUNDANT
2	DSMW3HE10040AA	ROUTER,AC POWER CABLE, LOCKING, 6FT, NA

1	DSMW3HE09095AA	7705 SAR-A/AX REAR ATTACHABLE TRAY
1	DSMW3HE00028CA	SFP - GIGE LX - LC ROHS 6/6 DDM -40/85C

GenWatch Equipment

QTY	NOMENCLATURE	DESCRIPTION
1	TT2264	GENWATCH3 OVER-THE-AIR BASE
1	TT05408AA	ASTRO25 (9600) CONTROL CHANNEL OPTION
1	TT05155AA	AFFILIATION / DEAFFILIATION DISPLAY
1	TT05234AA	UPGRADE FROM (3) EXCEL REPORTS TO FULL SUITE (20+)
1	L3561	GW3 OTA PC BUNDLE
1	L3624	GENESIS APX MODEM 700/800MHZ
1	L3625	GENESIS APX MODEM 900MHZ

MCC7500E Dispatch Infrastructure

QTY	NOMENCLATURE	DESCRIPTION
1	SQM01SUM0273	MASTER SITE CONFIGURATION
1	CA02629AC	ADD: EXPAND 7.17 M CORE
1	UA00156AA	ADD: MCC7500 CONSOLE LICENSES (QTY 5)
1	B1949	MCC 7500E SOFTWARE DVD
1	B1948	MCC 7500E DISPATCH POSITION LICENSES
4	UA00652AA	ADD: 160 RADIO RESOURCES LICENSE
4	UA00653AA	ADD: BASIC CONSOLE OPERATION
4	UA00654AA	ADD: ASTRO 25 TRUNKING OPERATION
4	UA00655AA	ADD: ADVANCED CONVENTIONAL OPERATION
4	UA00658AA	ADD: SECURE OPERATION
4	UA00659AA	ADD: ADP/AES/DES-OFB ENCRYPTION
0		
4	TT3903A	Z2 G5 MINI WORKSTATION NON RETURNABLE
4	DSST7300U3M	STARTECH 7 PORT USB 3.0 HUB
4	B1914	MCC SERIES DESKTOP GOOSENECK MICROPHONE
8	B1952	SPEAKER, DESKTOP, USB
1	DSLOGITECHZ130	LOGITECH Z130 SPEAKERS
8	CA03406AA	ADD: AC LINE CORD, NORTH AMERICA
8	CA03413AA	ADD: USB CABLE, TYPE A TO TYPE C, 4.5M
8	CA03405AA	ADD: POWER SUPPLY WITH DC CORD
8	DDN2825	USB HEADSET BASE WITH PTT
8	B1913	MCC SERIES HEADSET JACK
4	DSTWIN6328A	PROVIDES ONE DUAL PEDAL FOOTSWITCH FOR USE WITH MOTOROLA MCC 7500 DISP
8	RMN5150A	OVER-THE-HEAD, MONAURAL, NOISE-CANCELING HEADSET
4	DSEV221B	TECH GLOBAL EVOLUTION SERIES 22INCH WITH TOUCH
4	B1941	USB AUDIO INTERFACE MODULE

QTY	NOMENCLATURE	DESCRIPTION
4	DSRMP615A	SPD, TYPE 3, 120V RACK MOUNT, 15A PLUG-IN W/ (6) 15A NEMA 5-15 OUTLETS
0		
1	SQM01SUM0205	GGM 8000 GATEWAY
1	CA01616AA	ADD: AC POWER
1	CA02086AA	ADD: HIGH DENSITY ENH CONV GATEWAY
1	SQM01SUM0205	GGM 8000 GATEWAY
1	CA01616AA	ADD: AC POWER
1	CA02086AA	ADD: HIGH DENSITY ENH CONV GATEWAY
1	SQM01SUM0205	GGM 8000 GATEWAY
1	CA01616AA	ADD: AC POWER
1	CA02086AA	ADD: HIGH DENSITY ENH CONV GATEWAY
0		
1	T7038	GCP 8000 / GPB 8000 / XHUB / DSC HUB
1	CA00717AA	ADD: ASTRO SYSTEM RELEASE 7.17
1	CA01136AA	MCC 7500 CONVEN SITE OPER
1	CA00303AA	ADD: QTY (1) SITE CONTROLLER
0		
1	SQM01SUM0205	GGM 8000 GATEWAY
1	CA03656AA	GGM 8000 REFURB GATEWAY
1	SQM01SUM0205	GGM 8000 GATEWAY
1	CA03656AA	GGM 8000 REFURB GATEWAY
2	CLN1868	2930F 24-PORT SWITCH
2	CLN1866	FRU: 1M DAC CABLE
0		
1	F4543	SITE MANAGER BASIC
1	V266	ADD: 90VAC TO 260VAC PS TO SM
1	VA00874	ADD: AUX I-O SERV FW CURR ASTRO REL
3	V592	AAD TERM BLCK & CONN WI
1	DSRMP615A	SPD, TYPE 3, 120V RACK MOUNT, 15A PLUG-IN W/ (6) 15A NEMA 5-15 OUTLETS
1	DS1101990	SPD, SHIELDED RJ-45 JACK, SINGLE LINE GBE (1000MBPS) R56 COMPLIANT
1	DSTSJADP	RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS
4	0784469Y02	BRKT, CBL SUPPORT
1	3182602Y06	GROUNDING BUS BAR
DISPATCH SPARES		
1	SQM01SUM0205	GGM 8000 GATEWAY
1	CA03656AA	GGM 8000 REFURB GATEWAY
1	SQM01SUM0205	GGM 8000 GATEWAY
1	CA01616AA	ADD: AC POWER
1	CA02086AA	ADD: HIGH DENSITY ENH CONV GATEWAY
1	DLN6966	FRU: GCP 8000/GCM 8000/GPB 8000
1	CLN1868	2930F 24-PORT SWITCH
2	DDN2825	USB HEADSET BASE WITH PTT
1	DSST7300U3M	STARTECH 7 PORT USB 3.0 HUB
1	TT3903A	Z2 G5 MINI WORKSTATION NON RETURNABLE
1	DDN1396	USB DUAL ACTION FOOTSWITCH W/INPUT JACK KINESIS
2	B1952	SPEAKER, DESKTOP, USB
2	CA03406AA	ADD: AC LINE CORD, NORTH AMERICA

QTY	NOMENCLATURE	DESCRIPTION
2	CA03413AA	ADD: USB CABLE, TYPE A TO TYPE C, 4.5M
2	CA03405AA	ADD: POWER SUPPLY WITH DC CORD
2	B1913	MCC SERIES HEADSET JACK
1	B1914	MCC SERIES DESKTOP GOOSENECK MICROPHONE
2	RMN5150A	OVER-THE-HEAD, MONAURAL, NOISE-CANCELING HEADSET

Subscriber Equipment

QTY	NOMENCLATURE	DESCRIPTION
80	H51UCF9PW6 N	APX 4000 7/800 MHZ MODEL 2 PORTABLE
80	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY
80	QA01833	EXTREME NOISE REDUCTION
80	Q887	ADD: 5Y ESSENTIAL SERVICE
80	QA02750	ALT: IMPRES LI-ION 2800MAH (PMNN4448)
80	Q629	ENH: AES ENCRYPTION AND ADP
80	QA02756	ENH: 3600 OR 9600 TRUNKING BAUD SIN
12	PMNN4448B	BATT IMPRES LIION IP68 2800T
80	PMPN4174A	CHGR DESKTOP SINGLE UNIT IMPRES, US/NA
2	PMPN4284A	CHARGER DESKTOP MULTI-UNIT IMPRES 2 1 DISPLAY EXT PS 100-240VAC US/NA
80	PMMN4069AL	MICROPHONE,IMPRES RSM, 3.5MM JACK, IP55
1	T8476B	KVL 5000
1	CA00182AW	ADD: AES ENCRYPTION SOFTWARE
1	CA03358AA	ADD: ASTRO 25 MODE
1	DQUUSBOTG	STARTECH.COM 5IN MICRO USB TO USB OTG HOST ADAPTER M/F - USB ADAPTER
1	CA03467AA	ADD: NORTH AMERICA MICRO USB CHARGER 100/240V
1	WPLN6904A	KEYLOAD CABLE FOR APX7000
1	PMNN4549A	BATT IMPRES 2 LIION 2925T
1	HKN6182B	CABLE KEYLOADING ADAPTER CGAI
1	TKN8531C	CABLE FOR RNC, DIU MGEG

QTY	NOMENCLATURE	DESCRIPTION
45	M22URS9PW1BN	APX4500 ENHANCED 7/800 MHZ
45	QA02756	ADD: 3600 OR 9600 TRUNKING BAUD SINGLE SYSTEM
45	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY
45	GA00804	ADD: APX O2 CONTROL HEAD
45	G444	ADD: APX CONTROL HEAD SOFTWARE
45	G66BF	ADD: DASH MOUNT O2 APXM
45	W22	ADD: STD PALM MICROPHONE APX
45	B18	ADD: AUXILIARY SPKR 7.5 WATT
45	GA00318	ADD: 5Y ESSENTIAL SERVICE
45	GA00235	ADD: NO GPS ANTENNA NEEDED
45	G335	ADD: ANT 1/4 WAVE 762-870 MHZ
7	M22URS9PW1BN	APX4500 ENHANCED 7/800 MHZ
7	QA02756	ADD: 3600 OR 9600 TRUNKING BAUD SINGLE SYSTEM
7	QA01648	ADD: ADVANCED SYSTEM KEY - HARDWARE KEY
7	GA00804	ADD: APX O2 CONTROL HEAD
7	G444	ADD: APX CONTROL HEAD SOFTWARE
7	G66BF	ADD: DASH MOUNT O2 APXM
7	W22	ADD: STD PALM MICROPHONE APX
7	G843	ADD: AES ENCRYPTION APX AND ADP
7	G142	ADD: NO SPEAKER NEEDED
7	G89	ADD: NO RF ANTENNA NEEDED
7	GA00318	ADD: 5Y ESSENTIAL SERVICE
7	GA00235	ADD: NO GPS ANTENNA NEEDED
7	G91	ADD: CONTROL STATION POWER SUPPLY
7	W665	ADD: CONTROL STATION OPERATION

SECTION 4

PROJECT ASSUMPTIONS

- This project implementation is dependent upon the acquisition of six frequency pairs. Motorola has included the frequency coordination services as a part of this project. Motorola will work with the customer to identify the frequencies and submit the proposal to FCC. Motorola will assist with engineering documentation as required. Any changes suggested by FCC for licensing which is not in the scope of this project or changes to the existing equipment will be processed as change order.
- This ASR site requires dedicated backhaul connectivity to Master site located at Tulsa. It is the customer's responsibility to provide this dedicated public safety grade link of 3 Mbps or more. Motorola will perform link test to verify the reliability of the link before connecting the ASR site to the Master site.
- Any site/location upgrades or modifications not specified in this proposal are the responsibility of the customer.
- If required, the customer will provide approved local, state, or Federal permits (e.g., building permits, electrical permits, and environmental permits) and licensed engineering drawings as may be required for the installation and operation of the proposed equipment.
- This proposal is designed for the 800MHz frequency band.
- Any required system interconnections not specifically outlined here will be provided by the customer.
- An existing antenna system will be used for this new ASR site. Motorola will sweep the antenna and line to ensure there are no issues. If any issues are found, a re-design of the RFDS will be needed via a change order at a cost to the customer.
- Existing control station antennas will be used at the dispatch to tie in the new VHF and UHF control stations. If any issues are found upon sweeping the antenna lines, new antenna system will need to be provided via change order at cost to the customer.
- The dispatch will have enough space on the dispatch floor for the new console positions. Motorola will provide a new rack to install the equipment in the backroom.
- Existing main power will be used at dispatch, no electrical work is included to provide primary power to equipment.
- Motorola is not providing UPS units or backup power for any of the sites or dispatches. The city of Bartlesville is responsible for providing UPS units to backup the proposed equipment.
- At the Water Tank site, customer is responsible to ensure there is one (1) 20amp Quad outlet within 3 ft of the equipment cabinet.
- At the Water Tank site, Motorola will provide an epoxy mount for the new antenna and line that will be installed.
- Motorola will provide the necessary rack space at the Water Tank site for the conventional repeater and equipment.
- Motorola is not responsible for interference caused or received by the Motorola provided equipment except for interference that is directly caused by the Motorola-provided transmitter(s) to the Motorola-provided receiver(s). Should the Bartlesville system experience interference, Motorola can be contracted to investigate the source and recommend solutions to mitigate the issue.
- No coverage guarantees or coverage acceptance test is included with this offering.

- City of Bartlesville will work with OK DPS for their subscriber programming needs. Only the installation of new APX mobiles have been included in the scope of this proposal. Programming of all subscribers (portables and mobiles) and developing code plugs will be a customer responsibility by working with OK DPS.

SECTION 5

STATEMENT OF WORK

Motorola will install and configure the proposed equipment. The following table describes the tasks involved with installation and configuration.

Tasks	Motorola Solutions	City of Bartlesville
PROJECT INITIATION		
Contract Finalization and Team Creation		
Execute contract and distribute contract documents.	X	X
Assign a Project Manager as a single point of contact.	X	X
Assign resources.	X	X
Schedule project kickoff meeting.	X	X
Deliverable: Signed contract, defined project team, and scheduled project kickoff meeting.		
Project Administration		
Ensure that project team members attend all meetings relevant to their role on the project.	X	X
Record and distribute project status meeting minutes.	X	
Maintain responsibility for third-party services contracted by Motorola Solutions.	X	
Complete assigned project tasks according to the project schedule.	X	X
Submit project milestone completion documents.	X	
Upon completion of tasks, approve project milestone completion documents.		X
Conduct all project work Monday thru Friday, 7:30 a.m. to 5:00 p.m.).	X	
Deliverable: Completed and approved project milestones throughout the project.		
Project Kickoff		
Introduce team, review roles, and decision authority.	X	X
Present project scope and objectives.	X	
Review SOW responsibilities and project schedule.	X	X
Schedule Design Review.	X	X
Deliverable: Completed project kickoff and scheduled Design Review.		
Design Review		
Present the system design and operational requirements for the solution.	X	
Present installation plan.	X	
Present preliminary cutover plan and methods to document final cutover process.	X	
Present configuration and details of sites required by system design.	X	

Tasks	Motorola Solutions	City of Bartlesville
Validate that Customer sites can accommodate proposed equipment.	X	X
Provide approvals required to add equipment to proposed existing sites.		X
Review safety, security, and site access procedures.	X	
Present equipment layout plans and system design drawings.	X	
Provide backhaul performance specifications and demarcation points.	X	
Provide heat load and power requirements for new equipment.	X	
Provide information on existing system interfaces.		X
Provide frequency and radio information for each site.		X
Complete the required forms required for frequency coordination and licensing.	X	
Ensure that frequency availability and licensing meet project requirements, and pay licensing and frequency coordination fees.	X	X
Review and update design documents, including System Description, Statement of Work, Project Schedule, and Acceptance Test Plan, based on Design Review agreements.	X	
Execute Change Order in accordance with all material changes to the Contract resulting from the Design Review.	X	
Deliverable: Finalized design documentation based upon “frozen” design, along with any relevant Change Order documentation.		
Site Planning		
Provide necessary equipment shelters for installation of system equipment.	X	
Provide necessary tower for installation of antenna system		X
Provide the R56 requirements for space, power, grounding, HVAC, and connectivity requirements at each site.	X	
Provide adequate commercial electrical power in proper phase and voltage at sites.		X
Provide as-built structural and foundation drawings of the structures and site locations, along with geotechnical reports, in order to facilitate a structural analysis.		X
Confirm that there is adequate utility service to support the new equipment and ancillary equipment.		X

Tasks	Motorola Solutions	City of Bartlesville
Conduct site walks to collect pertinent information (e.g. location of telco, power, structures, etc.)	X	
Ensure that each site meets the R56 standards for space, grounding, power, HVAC, and connectivity requirements.		X
Conduct one three-point ground resistance test of the site.		X
Prepare and submit Electromagnetic Energy (EME) plans for the site (as licensee) to demonstrate compliance with FCC RF Exposure Guidelines.	X	X
Prepare a lease exhibit and sketch of each site showing the proposed lease space and planned development at that site.	X	
Prepare site construction drawings showing the layout of new and existing equipment.	X	
Review and approve site drawings.		X
Obtain the permits needed to complete site development, including electrical, building, and construction permits.		X
Pay for application fees, taxes, and recurring payments for lease/ownership of property.		X
SITE PREPARATION AND DEVELOPMENT		
Site Access		
Provide site owners/managers with written notice to provide entry to sites identified in the project design documentation.		X
Obtain site licensing and permitting, including site lease/ownership, zoning, permits, regulatory approvals, easements, power, and telco connections.		X
Deliverable: Access, permitting, and licensing necessary to install system equipment at each site.		
General Facility Improvements		
Provide adequate HVAC, grounding, lighting, cable routing, and surge protection based upon Motorola Solutions' Standards and Guidelines for Communication Sites (R56)		X
Ensure the resolution of environmental and hazardous material issues at each site including, but not limited to, asbestos, structural integrity (tower, rooftop, water tank, etc.), and other building risks.		X
Ensure that electrical service will accommodate installation of system equipment, including isolation transformers, circuit breakers, surge protectors, and cabling.		X
Provide Motorola specified commercial power at the site		X

Tasks	Motorola Solutions	City of Bartlesville
Pay for usage costs of power and generator fueling, both during the construction and installation effort, and on an ongoing basis.		X
Transport removed site equipment to a location designated by Customer and within Customer's jurisdiction.		X
Deliverable: Sites meet physical requirements for equipment installation.		
SYSTEM INSTALLATION		
Equipment Order and Manufacturing		
Create equipment order and reconcile to contract.	X	
Manufacture Motorola Solutions-provided equipment necessary for system based on equipment order.	X	
Deliverable: Equipment procured and ready for shipment.		
Equipment Shipment and Storage		
Provide secure location for solution equipment.		X
Pack and ship solution equipment to the identified, or site locations.	X	
Receive solution equipment.		X
Inventory solution equipment.	X	
Deliverable: Solution equipment received and ready for installation		
General Installation		
Deliver solution equipment to installation location.	X	
Coordinate receipt of and inventory solution equipment with designated contact.	X	
Install all proposed fixed equipment as outlined in the System Description based upon the agreed-upon floor plans, connecting audio, control, and radio transmission cables to connect equipment to the power panels or receptacles, and audio/control line connection points. Installation performed in accordance with R56 standards and state/local codes.	X	
Provide system interconnections that are not specifically outlined in the system design, including dedicated backhaul connectivity.		X
Install and terminate all network cables between site routers and network demarcation points, including microwave, leased lines, and Ethernet.	X	
Connect installed equipment to the provided ground system.	X	
Label equipment, racks, and cables.	X	
Perform preliminary audit of installed equipment to ensure compliance with requirements and R56 standards.	X	

Tasks	Motorola Solutions	City of Bartlesville
Note any required changes to the installation for inclusion in the “as-built” system documentation.	X	
Remove, transport, and dispose of old equipment.		X
Deliverable: Equipment installed.		
Antenna and Transmission Line Installation		
Provide RF antenna systems		X
Provide structure penetrations for transmission equipment (e.g. antennas & microwave line.).		X
Perform sweep tests on transmission lines.	X	
Provide and install attachment hardware for supporting transmission lines on antenna support structure.		X
Supply and install ground buss bar at the bottom of each antenna support structure.		X
ASTRO 25 Core and Remote Site Installation and Configuration		
Install fixed equipment contained in the equipment list and system description.	X	
Provide backhaul connectivity and associated equipment for all sites to meet latency, jitter and capacity requirements.		X
Configure ASTRO 25 system to support the new RF sites.	X	
Provide list of subscriber IDs for loading into the Zone Controller.		X
Load subscriber IDs in the Zone Controller.	X	
Provide required radio ID and alias information to enable alias database setup for interface to consoles.		X
Integrate the RF sites into the system to ensure proper operation.	X	
Deliverable: ASTRO 25 core and remote site equipment installation completed.		
Mobile Radio Installation and Programming		
Deliver portable radios to authorized Customer personnel and inventory upon receipt.	X	X
Develop and approve prototypes for each type of mobile installation.	X	
Test features and functionalities of the mobile templates.		X
Program the mobile radios identified in the equipment list in accordance with the programming templates, client software, and fleetmap.	X	

Tasks	Motorola Solutions	City of Bartlesville
Install all the mobiles in the vehicles, as identified in the equipment list, and according to the installation schedule.	X	
Remove the existing mobiles from the vehicle at the time of installation of the new radios	X	
Portable Radio Programming and Distribution		
Pass all features and functionalities of the portable radio template.		X
Program test portable radios with each template version and activate them on the system.		X
Program the portable radios identified in the equipment list in accordance with the programming templates, client software, and fleetmap.	X	
Deliver portable radios to authorized Customer personnel and inventory upon receipt.	X	X
Acknowledge receipt of portable radios and accessories and verify proper operation of a sampling of delivered portable radios.		X
Distribute portable radios to end users.		X
SYSTEM OPTIMIZATION AND TESTING		
R56 Site Audit		
Perform R56 site-installation quality-audits, verifying proper physical installation and operational configurations.	X	
Create site evaluation report to verify site meets or exceeds requirements, as defined in Motorola Solutions' R56 Standards and Guidelines for Communication Sites.	X	
Deliverable: R56 Standards and Guidelines for Communication Sites audits completed successfully.		
Solution Optimization		
Verify that all equipment is operating properly and that all electrical and signal levels are set accurately.	X	
Verify communication interfaces between devices for proper operation.	X	
Ensure that functionality meets manufacturers' specifications and complies with the final configuration established during design review or system staging.	X	
Deliverable: Completion of System Optimization.		
Functional Acceptance Testing		
Verify the operational functionality and features of the solution supplied by Motorola Solutions, as contracted.	X	
Witness the functional testing.		X

Tasks	Motorola Solutions	City of Bartlesville
Document all issues that arise during the acceptance tests.	X	
If any major task for the system as contractually described fails during the Customer acceptance testing or beneficial use, repeat that particular task after Motorola Solutions determines that corrective action has been taken.	X	
Resolve any minor task failures before Final System Acceptance.	X	
Perform informational only coverage measurement.	X	
Fix any issues identified with the antenna system		X
Document the results of the acceptance tests and present for review.	X	
Review and approve final acceptance test results.		X
Document all issues that arise during the acceptance tests.	X	
Document the results of the acceptance tests and present to the Customer for review.	X	
Deliverable: Completion of functional testing and approval by Customer.		
PROJECT TRANSITION		
Cutover		
Finalize Cutover Plan.	X	X
Provide Motorola Solutions with user radio information for input into the system database and activation, as required.		X
Provide programming of user radios and related services (i.e. template building, re-tuning, testing and installations), as needed, during cutover period.		X
Conduct cutover meeting with relevant personnel to address both how to mitigate technical and communication problem impacts to the users during cutover and during the general operation of the system.	X	X
Notify the personnel affected by the cutover of the date and time planned for cutover.		X
Provide ongoing communication with users regarding the project and schedule.		X
Cut over users and ensure that user radios are operating on system.		X
Resolve punchlist items, documented during the Acceptance Testing phase, in order to meet all the criteria for final system acceptance.	X	

Tasks	Motorola Solutions	City of Bartlesville
Assist Motorola Solutions with resolution of identified punchlist items by providing support, such as access to the sites, equipment and system, and approval of the resolved punchlist items.		X
Deliverable: Migration to new system completed, and punchlist items resolved.		
Transition to Warranty		
Review the items necessary for transitioning the project to warranty support and service.	X	
Motorola Solutions to provide services during year 1 warranty which align with the proposed services.	X	
Provide a Customer Support Plan detailing the warranty support associated with the contract equipment.	X	
Deliverable: Service information delivered and approved by Customer		
Finalize Documentation and System Acceptance		
Provide manufacturer's installation material, part list and other related material to Customer upon project completion.	X	
Provide an electronic as-built system manual on CD or other Customer preferred electronic media. The documentation will include the following: - Site Block Diagrams. - Site Floor Plans. - Site Equipment Rack Configurations. - Functional Acceptance Test Plan Test Sheets and Results. - Equipment Inventory List. - Maintenance Manuals (where applicable). - Technical Service Manuals (where applicable). Drawings will be delivered in Adobe PDF format.	X	
Receive and approve documentation.		X
Execute Final Project Acceptance.	X	X
Deliverable: All required documents are provided and approved. Final Project Acceptance.		

5.1 ASSUMPTIONS

The following assumptions were made by Motorola Solutions while putting together this proposal. If any of the assumptions are deemed incorrect, a revised proposal will be required. During the implementation stage of the proposal, if any of these assumptions are determined to be invalid, a change order will be processed for the same.

- All existing sites or equipment locations will have sufficient space available for the system described as required/specified by R56.

- All existing sites or equipment locations will have adequate electrical power in the proper phase and voltage, and site grounding to support the requirements of the system described.
- Any site/location upgrades or modifications are the responsibility of City of Bartlesville.
- Approved local, State, or Federal permits as may be required for the installation and operation of the proposed equipment are the responsibility of City of Bartlesville.
- Any required system interconnections not specifically outlined here will be provided by City of Bartlesville. These may include dedicated phone circuits, microwave links, or other types of connectivity.
- The City shall be responsible for all console furniture. Motorola has not included any furniture as part of this proposal.
- Motorola assumes available breaker panel circuits available at all the proposed sites.
- Decommissioning of existing equipment will be completed within a maximum of 6 months of the Cutover date. Any delay, due to reasons outside Motorola Solutions control, will lead to additional charges.
- Delays in site access or site availability that affect the project schedule shall be handled via the change order process as applicable.
- The material and Services offered by Motorola Solution for the project are listed and described within this SOW and its Appendices.
- Motorola anticipates the use of industry standard materials. If City of Bartlesville requires that Motorola use other materials, then City of Bartlesville will reimburse Motorola for any additional costs and/or restocking fees on a per item or occurrence. All materials included in Motorola's equipment list have been determined to be compliant with Motorola R56 standard. No substitution of equipment on the list is allowed without prior review and approval by Motorola
- Prevailing Wage Rates were not used for this proposal. Should City of Bartlesville deem Prevailing Wage parameters are not required, a change notice and a revised quote will be submitted to the City.
- The statements in this SOW will take precedence over any item it may be conflict with in the entire Agreement
- If City of Bartlesville requires specific subcontractors to be used on this project, other than Motorola Solutions-proposed subcontractors, additional costs may apply
- Depending on contract execution, equipment software and hardware will be at the current shipping version
- For documentation requiring customer approval, the proposed documentation review period will be five (5) business days. At the end of the five (5) day period, the submittal shall be formally approved, or returned with comment to be considered. Failure to meet this five (5) business day limit shall grant Motorola one (1) additional business day to our contractual performance schedule for each business day of delay, and shall be handled via the change order process as applicable.
- For documentation requiring customer approval, there shall be up to two (2) revisions per documentation package submittal, additional revisions will be handled via the change order process.
- Under no circumstances will either party be responsible for delays or lack of performance resulting from events beyond the reasonable control of that party ("Excusable Delays").

Such events include, but are not limited to, acts of God, weather conditions, compliance with laws and regulations (excluding Customer's failure to properly and timely apply for all required FCC licenses), governmental action, bid protests, fire, strikes, lock-outs, and other labor disruptions, material shortages, riots, acts of war, and an Excusable Delay of a Motorola subcontractor.

- Motorola Solutions is not responsible for interference caused or received by the Motorola Solutions-provided equipment except for interference that is directly caused by the Motorola Solutions-provided transmitter(s) to the Motorola Solutions-provided receiver(s). Should the county system experience interference, Motorola Solutions can be contracted to investigate the source and recommend solutions to mitigate the issue.
- Motorola Solutions is not responsible for pre-existing or external RF interference issues that may degrade the performance of this communications system.
- If, for any reason, any of the proposed sites cannot be utilized due to reasons beyond Motorola Solutions' control, the costs associated with site changes or delays including, but not limited to, re-engineering, frequency re-licensing, site zoning, site permitting, schedule delays, site abnormalities, re-mobilization, etc., will be paid for by City of Midland and documented through the change order process.

SECTION 6

ACCEPTANCE TEST PLAN

System Acceptance of the proposed solution will occur upon successful completion of a Functional Acceptance Test Plan (FATP), which will test the features, functions, and failure modes for the installed equipment in order to verify that the solution operates according to its design. This plan will validate that the solution will operate according to its design, and increase the efficiency and accuracy of the final installation activities. A detailed FATP will be developed and finalized during the Design Review.

An informational only coverage measurement will be performed to make sure that the existing antenna system provided by the customer is working properly.

SECTION 7

ADVANCED PLUS SERVICES

7.1 ADVANCED PLUS SERVICES OVERVIEW

In order to ensure the continuity of City of Bartlesville's network and reduce system downtime Motorola proposes our Advanced Plus Services offering to the City of Bartlesville. Appropriate for customers who wish to leverage Motorola's experienced personnel to maintain mission-critical communications for their first responders, Advanced Plus Services focuses on monitoring the network on an ongoing basis, proactively mitigating potential functionality and security issues, and providing both remote and onsite support. The proposed offering consists of the following specific services:

- Service Desk.
- Technical Support.
- Network Event Monitoring.
- Onsite Support.
- Network Hardware Repair.
- Remote Security Patch Installation.
- Network Updates.

These services will be delivered to the City through the combination of local service personnel either dedicated to the network or engaged as needed; a centralized team within Motorola's Solutions Support Center (SSC), which operates on a 24 x 7 x 365 basis; and our Repair Depot, which will ensure that equipment is repaired to the highest quality standards. The collaboration between these service resources, all of who are experienced in the maintenance of mission-critical networks, will enable a swift analysis of any network issues, an accurate diagnosis of root causes, and a timely resolution and return to normal network operation.

7.2 ADVANCED PLUS SERVICES DESCRIPTION

7.2.1 Centralized Service Delivery

Centralized support will be provided by Motorola's support staff, located at our Service Desk and Solutions Support Center (SSC). These experienced personnel will provide direct service and technical support through a combination of Service Desk telephone support, technical consultation and troubleshooting through the SSC, and ongoing network monitoring of City of Bartlesville's system.

Motorola will provide **Service Desk** response as a single point of contact for all support issues, including communications between City, third-party subcontractors and manufacturers, and Motorola. When City's personnel call for support, the Service Desk will record, track, and update all Service Requests, Change Requests, Dispatch Requests, and Service Incidents using Motorola's Customer Relationship Management (CRM) system. The Service Desk is responsible for documenting City's inquiries, requests, concerns, and

related tickets; tracking and resolving issues; and ensuring timely communications with all stakeholders based on the nature of the incident.

As tickets are opened by the Service Desk, issues that require specific technical expertise and support will be routed to our Solutions Support Center (SSC) system technologists for **Technical Support**, who will provide telephone consultation and troubleshooting capabilities to diagnose and resolve infrastructure performance and operational issues. Motorola's recording, escalating, and reporting process applies ISO 90001 and TL 9000-certified standards to the Technical Support calls from our contracted customers, reflecting our focus on maintaining mission-critical communications for the users of our systems.

The same SSC staff that provide direct telephone support to the City of Bartlesville will also provide **Network Event Monitoring** to City's network in real-time, ensuring continuous management of the system's operational functionality. The SSC's technicians will utilize sophisticated tools to remotely monitor City's system, often identifying and resolving anomalous events before they might affect user communications.

7.2.2 Field Service Delivery

Onsite repairs and network preventative maintenance will be provided by authorized local field services delivery personnel, who will be dispatched from and managed by the Solutions Support Center.

OnSite Support provides local, trained and qualified technicians who will arrive at the City of Bartlesville's location upon a dispatch service call to diagnose and restore the communications network. This involves running diagnostics on the hardware or FRU (Field Replacement Unit) in order to identify defective elements, and replacing those elements with functioning ones. The system technician will respond to the City's location in order to remedy equipment issues based on the impact of the issue to overall system function.

Annual Preventive Maintenance Service provides proactive, regularly scheduled operational testing and alignment of infrastructure and network components to ensure that they continually meet original manufacturer specifications. Certified field technicians perform hands-on examination and diagnostics of network equipment on a routine and prescribed basis.

7.2.3 Network Hardware Repair

Network Hardware Repair – Motorola's authorized Repair Depot will repair the equipment provided by Motorola, as well as select third-party infrastructure equipment supplied as part of the proposed solution. The Repair Depot will manage the logistics of equipment repair (including shipment and return of repaired equipment), repair Motorola equipment, and coordinate the repair of third-party solution components.

Motorola also proposes **Network Hardware Repair with Advanced Replacement** to the City of Bartlesville. With this additional service, Motorola will exchange malfunctioning components and equipment with advanced replacement units or Field Replacement Units (FRUs) as they are available in the Repair Depot's inventory. Malfunctioning equipment will be evaluated and repaired by the infrastructure repair depot and returned to the Repair Depot's FRU inventory upon repair completion. If the City prefers to maintain their existing FRU inventory. City of Bartlesville will be able to request a "loaner" FRU while their unit is being repaired.

7.2.4 Network Updates

With our proposed **Network Updates Service**, Motorola commits to sustain City of Bartlesville's ASTRO 25 system through a program of software and hardware updates aligned with the ASTRO 25 platform lifecycle. This comprehensive approach to technology sustainment will ensure that City of Bartlesville has access to the latest available standard features, as well as the opportunity to incorporate optional features through the purchase of hardware and/or software licenses. Updates and expansion of system components will optimize the availability of repair services, and will enable City to add RF sites, dispatch positions, data subsystems, network management positions, and other elements to increase capacity and processing capability. Motorola will minimize any interruption to system operation during each network update, with minimal reliance on the City's personnel.

Five (5) years of warranty and services including the network updates are included in this proposal. This will ensure that the City's infrastructure is continuous supported and upgrade to the newest ASTRO release with respect to the OKWIN Regional System.

7.3 MOTOROLA'S SERVICE CAPABILITIES

Our focus on the needs of our public safety partners has led us to recognize that an integrated implementation and service delivery team that takes a new system from system installation, to acceptance, to warranty, and all the way through extended maintenance, is the best way to ensure that public safety communications systems meet the needs of first responders. Motorola's team of experts, have developed refined processes and sophisticated tools through our experience in delivering mission-critical communications.

7.3.1 On-Call Support through the Solutions Support Center (SSC)

The cornerstone of our customer care process, Motorola's Solution Support Center (SSC) is staffed 24x7x365 by experienced system technologists. This TL 9000/ISO 9001-certified center responds to over 5000 public safety, utility, and enterprise customers. With over 100,000 phone and email interactions with Motorola customers per month, the SSC provides our customers with a centralized contact point for service requests.

7.3.2 Onsite Service through a Field Service Team

Onsite maintenance and repair of City of Bartlesville's system will be provided by Motorola's local team of service personnel. Motorola will provide the City with a Customer Support Plan (CSP) that outlines the details of each service, provides escalation paths for special issues, and any other information specific to the City service agreement. Some of these details will include items such as access to sites, response time requirements, severity level definitions, and parts department access information.

Local technicians will be dispatched for onsite service by the SSC, who will inform the technician of the reason for dispatch. This will enable the technician to determine if a certain component or field replacement unit (FRU) will be needed from inventory to restore the system. Once on site, the field technician will notify the SSC and begin to work on the issue. The technician will review the case notes to determine the status of the issue, and begin the troubleshooting and restoration process. Once the system is restored to normal operation, the field technician will notify the SSC that the system is restored. The SSC, in turn, will

notify the City that the system is restored to normal operation and request approval to close the case.

7.3.3 Centralized Repair Management through Motorola's Repair Depot

Our repair management depot coordinates component repair through a central location, eliminating the need to send system equipment to multiple vendor locations for repair. Once equipment is at the depot, technicians will replicate the City of Bartlesville's network configuration in our comprehensive test labs in order to reproduce and analyze the issue. Technicians will then restore the equipment to working order. After repairs are completed, equipment will be tested to its original performance specifications and, if appropriate, configured for return to use in City's system. All components being repaired are tracked throughout the process, from shipment by the City to return through a case management system where users can view the repair status of the radio via a web portal.

7.3.4 Direct Access to System Information through MyView Portal

Supplementing Motorola's proposed services plan for the City of Bartlesville is access to Motorola's online system information tool, MyView Portal. MyView Portal provides our customers with real-time visibility to critical system and services information, all through an easy-to-use, graphical interface. With just a few clicks, City's administrators will gain instant access to system and support compliance, case reporting, ability to update and create cases, have visibility to when the system will be updated, and receive pro-active notifications regarding system updates. Available 24x7x365 from any web-enabled device, the information provided by MyView will be based on your needs and user access permissions, ensuring that the information displayed is secure and pertinent to your operations.

Figure 1: MyView Portal offers real-time, roled-based access to critical system and services information.

SECTION 8

PRICING

8.1 EQUIPMENT AND SERVICES SUMMARY

Description	Price
Infrastructure and Subscribers	$1,065,270
System Integration	$1,396,597
System Total	$2,461,867
(ASR/ Avtec/ 1st year Warranty)	Included
MSI System Discount	(-$225,192)
MSI PO Issue Incentive *(PO DATE 12/28/22)*	(-$236,800)
TOTAL SYSTEM	$1,999,875

"This proposal is based upon and subject to the terms and conditions of the State of Oklahoma Office of Management and Enterprise Services, Oklahoma Statewide Contract No. SW1053M, executed on November 21, 2022, and remains valid for a period of 45 days from the date of this letter. The State may accept this proposal by issuing a purchase order or notice to proceed document referencing the "Subject to the terms and conditions of the State of Oklahoma Office of Management and Enterprise Services, Oklahoma Statewide Contract No. SW1053M."

PAYMENT

Except for a payment that is due on the Effective Date, Customer will make payments to Motorola within thirty (30) days after the date of each invoice. Customer will make payments when due in the form of a check, cashier's check, or wire transfer drawn on a U.S. financial institution. If Customer has purchased additional Professional or Subscription services, payment will be in accordance with the applicable addenda. Payment for the System purchase will be in accordance with the following milestones.

System Purchase (excluding Subscribers, if applicable)

1. **25% of the Contract Price due upon contract execution (due upon effective date);**
2. **60% of the Contract Price due upon shipment of equipment from Staging;**
3. **10% of the Contract Price due upon installation of equipment; and**
4. **5% of the Contract Price due upon Final Acceptance.**

If Subscribers are purchased, 100% of the Subscriber Contract Price will be invoiced upon shipment (as shipped).

Motorola shall make partial shipments of equipment and will request payment upon shipment of such equipment. In addition, Motorola shall invoice for installations completed on a site-by-site basis or when professional services are completed, when applicable. The value of the equipment shipped/services performed will be determined by the

value shipped/services performed as a percentage of the total milestone value. Unless otherwise specified, contract discounts are based upon all items proposed and overall system package. For invoicing purposes only, discounts will be applied proportionately to the FNE and Subscriber equipment values to total contract price. Overdue invoices will bear simple interest at the maximum allowable rate by state law.

SECTION 9

CONTRACTUAL DOCUMENTATION

This proposal is based upon and subject to the terms and conditions of the State of Oklahoma Office of Management and Enterprise Services, Oklahoma Statewide Contract No. SW1053M, executed on November 21, 2022, and remains valid for a period of 30 days from the date of this letter. The State may accept this proposal by issuing a purchase order or notice to proceed document referencing the "Subject to the terms and conditions of the State of Oklahoma Office of Management and Enterprise Services, Oklahoma Statewide Contract No. SW1053M."

PROPOSAL ACCEPTANCE

_____

Dale Copeland

Mayor, Bartlesville, OK.

OKLAHOMA
Office of Management
& Enterprise Services

Statewide Contract Summary

Official signed contract documents are on file with OMES Central Purchasing.

Contract title: Public Safety Communications Products, Services, and Solutions

Contract Number: SW1053M

Date of Contract issuance: 11/21/2022

Contract period: 11/21/2022 through 11/20/2023

Agreement period: 11/21/2022 through 11/20/2027

Type of contract: Mandatory ☐ Non-Mandatory ☒

OMES Central Purchasing contact: Marc Brown **Title:** Contracting Officer

Phone: (405) - 521 - 6669 **Email:** marc.brown@omes.ok.gov

Supplier name: Motorola Solutions Inc.

Supplier ID #: 0000069200 **Contract ID #:** 6695

Supplier Point of Contact: Jason Smalley

Supplier address: 500 W Monroe St.

City: Chicago **State:** IL **Zip Code:** 60661 - 3671

Phone #: 1 - 918 - 808 - 1669 **Email:** Jason.smalley@motorolasolutions.com

Contract Overview:

Motorola Solutions Inc. has been awarded a statewide contract for Public Safety Communications Products, Services and Solutions. Details on services, warranty, software options along with products and pricing are available on the state webpage.

Authorized Users: All state departments, boards, commissions, agencies, institutions, counties, school districts, municipalities and tribal governments which may avail themselves of this contract.

How to order:

1. For product and pricing information review awarded contract documents.
2. Request a quote from the supplier or any approved authorized dealer. All quotes must reference SW1053M.
3. Generate a purchase order made payable to the supplier. Purchase order must reference the statewide contract number SW1053M.
4. Email your purchase order to the designated supplier sales representative.

Available Brands:

Motorola Solutions Inc. is authorized to sell ONLY products they manufacture.

Available Products and Services:

Only approved products will display on the products/pricing document. They may sell products in the following sub-categories; P25 single-band portable, mobile and desktop radios; P25 multi-band mobile and desktop radios; Non-P25 Conventional Analog portable, mobile, desktop and base station repeater radios.

Authorized Dealer/Reseller(s):

Resellers possibly added at later date via request from Motorola Solutions Inc.

CONTRACT

State of Oklahoma

Dispatch via Print

Contract ID			Page
00000000000000000000006695			1 of 1
Contract Dates	**Currency**	**Rate Type**	**Rate Date**
11/21/2022 to 11/20/2023	USD	CRRNT	PO Date
Description:		**Contract Maximum**	
SW1053M Public Safety Comm.		0.00	

Allow Open Item Reference

TYPE: STATEWIDE

Supplier 0000069200
MOTOROLA SOLUTIONS INC
500 W MONROE ST
CHICAGO IL 60661-3671
USA

Tax Exempt? Y Tax Exempt ID:736017987

Contract Lines:

Line #	Cat CD / Item ID / Item Desc	UOM	Minimum Order Qty	Minimum Order Amt	Maximum / Open Qty	Maximum / Open Amt
1	43191510 / RADIO: Equipment to include Two-Way, Radios, Transmitters, Tranceivers, Mobile, Equipment	EA	1.00	0.00	0.00	0.00
	Contract Base Pricing 0.00000	EA		0001		

COMMENTS:

Contract period: 11/21/2022 - 11/20/2023
Agreement Period: 11/21/2022 - 11/20/2027

Point of Contact: Jason Smalley
Phone: (918) 808-1669
Jason.smalley@motorolasolutions.com

Final = The price is final after adjustments
Hard = Apply adjustments regardless of other adjustments
Skip = Skip adjustments if any other adjustments have been applied

Authorized Signature