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GWINDA JONES, COUNTY CLERK
ERATH COUNTY, TEXAS

By CW Deputy



September 22, 2023
NOTICE OF SPECIAL COMMISSIONERS COURT MEETING

Notice is hereby given that the Erath County Commissioners Court will meet in **SPECIAL SESSION** on **Wednesday, September 27th, 2023** at 9:00 a.m. in the 2nd floor Commissioner Court Room at the Erath County Courthouse, Stephenville, Texas to consider the following agenda items for discussion and possible action;

1. Public Comment
2. Discussion and action to award radio communications contract to L3 Harris.
3. Discussion and action to deem salvage 5 old desks from the County Clerk's office.
4. Discussion and action to approve renewal Notice and Benefit Confirmation with Transamerica Life Insurance Company and Retiree RX Care.
5. Discussion and action to approve proposal on annual testing and inspections of automatic fire suppression systems for Annex III.
6. Discussion and action to approve employee handbook.
7. Closed Executive Session in Accordance with the Open Meeting Act, *Tex. Govt. Code 551.071 through 551.086*, to discuss:
 - a. Personnel
 - b. Legal Matter
 - c. Real Estate
 - d. Reconvene
8. Adjourn.

COUNTY JUDGE
ERATH COUNTY, TEXAS



For Public Comments:

A Public Participation Form must be presented to the County Clerk prior to the time that the agenda item (or items) you wish to address are discussed before the Court. Speakers will be limited to 3 minutes and only 6 speakers will be allowed to speak on any given agenda item. Members of the public are reminded that the Erath County Commissioners Court is a Constitutional Court, with both judicial and legislative powers, created under Article V, Section 1 and Section 18 of the Texas Constitution. As a Constitutional Court, the Erath County Commissioners Court also possesses the power to issue a Contempt of Court Citation under Section 81.024 of the Texas Local Government Code. Accordingly, members of the public in attendance at any Regular, Special and/or Emergency Meeting of the Court shall conduct themselves with proper respect and decorum in speaking to, and/or addressing the Court; in participating in public discussions before the Court; and in all actions in the presence of the Court.

Erath County Reserves the right to adjourn into Executive Session at any time during the course of this meeting to discuss any of the matters listed, as authorized by the Texas Government Code, §551.071 (Consultation with Attorney), subsection 551.071(2) (Consultation with Attorney on legal matters that are not related to litigation), §551.072 (Deliberations regarding Real Property), §551.073 (Deliberations about Gifts and Donations), §551.074 (Personnel Matters), §551.076 (Deliberations about Security Personnel or Devices), §551.087 (Economic Development), §551.088 (Deliberation regarding Test Item), and 551.089 (Deliberation regarding Security Devices or Security Audits).

Commissioner's Court
Special Meeting
September 27, 2023
9:00 a.m.
Courthouse – County Courtroom

Present:

Commissioner Precinct #1 – Dee Stephens - Present

Commissioner Precinct #2 – Albert Ray - Present

Commissioner Precinct #3 – Joe Brown - Present

Commissioner Precinct #4 – Jim Buck - Present

County Judge, Brandon Huckabee

County Clerk, Gwinda Jones

Others present in the courtroom: See attached roster

Agenda Item #1 Public Comment

- None

Agenda Item #2 Discussion and action to award radio communications contract to L3 Harris.

Number 2023-301

Motion: To approve the contract with L3 Harris for \$4.814 dollars.

Made By: Commissioner Brown

Second By: Commissioner Buck

Ayes: Stephens X Ray X Brown X Buck X

Noes: None

Motion Carried

Agenda Item #3 Discussion and action to deem salvage 5 old desks from the County Clerk's office.

Number 2023-302

Motion: To deem 5 old desks from the County Clerk's office salvage

Made By: Commissioner Stephens

Second By: Commissioner Brown

Ayes: Stephens X Ray X Brown X Buck X

Noes: None

Motion Carried

Agenda Item #4 Discussion and action to approve renewal Notice and Benefit Confirmation with Transamerica Life Insurance Company and Retiree RX Care.

Number 2023-303

Motion: To approve renewal Notice and Benefit Confirmation with Transamerica Life Insurance Company and Retiree RX Care

Made By: Commissioner Ray

Second By: Commissioner Stephens

Ayes: Stephens X Ray X Brown X Buck X

Noes: None

Motion Carried

Agenda Item #5 Discussion and action to approve proposal on annual testing and inspections of automatic fire suppression systems for Annex III.

Number 2023-304

Motion: To approve proposal on annual testing and inspections of automatic fire suppression systems for Annex III.

Made By: Commissioner Brown

Second By: Commissioner Buck

Ayes: Stephens X Ray X Brown X Buck X

Noes: None

Motion Carried

Agenda Item #6 Discussion and action to approve employee handbook.

Number 2023-305

Motion: To approve employee handbook with changes made

Made By: Commissioner Ray

Second By: Commissioner Buck

Ayes: Stephens X Ray X Brown X Buck X

Noes: None

Motion Carried

7. Closed Executive Session in Accordance with the Open Meeting Act, Tex. Govt. Code 551.071 through 551.86, to discuss:

- a. Personnel
- b. Legal Matter
- c. Real Estate
- d. Reconvene

- Closed session not needed

8. Adjourn

Motion To Adjourn:

Made By: Commissioner Buck

Second By: Commissioner Ray

All Ayes Meeting Adjourned At 10:09 a.m.

STATE OF TEXAS

COUNTY OF ERATH

The above and foregoing is a true and complete copy of the minutes taken in my capacity as County Clerk of the Commissioners Court of Erath County, Texas, at the time and place heretofore set forth.

DATED at Stephenville, Texas, this 27th day of September, 2023.

ATTESTED BY:

GWINDA JONES, Erath County Clerk

A handwritten signature in black ink, reading "Gwinda Jones", is written over a horizontal line.

Erath County L3Harris Proposal Notes

1.0 L3HARRIS PROPOSAL – 09/07/2023

The original L3Harris (L3H) proposal quote contained the following top-level elements:

Infrastructure

- Premier Core Licenses
- 3 RF Sites (Equipment, software, installation)
- 5 Microwave connections (Equipment, software, installation)
- 4 Dispatch Consoles
- 4 Control Stations

Total Costs – \$2.159M

Services / Engineering - \$1.573M

Subscriber Radios (aka Terminals)

57 Fire Mobiles

129 Fire Portables

54 Law Mobiles

53 Law Portables (129 is a typo in the proposal)

Mobile Installations

Total of 111 Mobile Radios / 182 Portable Radios: 293 Radios

Total Costs - \$2.469M

Discounts - \$1.692M GRRN discount

Overall Total - \$4.509M

2.0 L3HARRIS PROPOSAL – 09/25/2023

After surveys and discussions with County stakeholders, the proposal was asked to be modified to increase the number of controls stations from four to seven. The subscriber radio counts were increased from 111 mobile radios to 138 mobile radios and from 182 portable radios to 216 portable radios. Overall all radio count increased from 293 to 354. In order to offset costs and due to lack of need, these radios had the Over the Air Rekeying (OTAR) feature and the multiband (VHF, UHF, 700/800MHz) feature removed. The multiband feature was replaced with a dual-band feature (VHF, 700/800 MHz). Additionally, L3H offered to throw in the LTE and BeOn features at no cost. The revised proposal received on 09/25/2023 contained the following top-level elements.

Infrastructure

- Premier Core Licenses
- 3 RF Sites (Equipment, software, installation)
- 5 Microwave connections (Equipment, software, installation)
- 4 Dispatch Consoles
- 7 Control Stations

Total Costs – \$2.098M (reduction of \$61k)

Services / Engineering - \$1.565M (reduction of \$8k)

Subscriber (aka Terminals)

65 Fire Mobiles

135 Fire Portables

73 Law Mobiles

81 Law Portables

Mobile Installations

Total of 138 Mobile Radios / 216 Portable Radios: 354 Radios

Total Costs - \$2.711M (increase of \$242k)

**Discounts - \$1.562M [\$1.374M GRRN discount + \$143k LTE discount + \$43k BeOn discount]
(reduction of \$130k)**

Overall Total - \$4.814M (increase of \$305k)

3.0 ANALYSIS

The major cause of the proposal cost increase of \$305k from 09/07/2023 to 09/25/2023 was the increase of subscriber radios / control stations and reduction in overall discount. The addition of these radios resulted in an increase of \$372k. L3H reduced the infrastructure and services costs by \$69k and thus the overall change of ~\$305k.

The GRRN discount is applicable to the subscriber radios and brings the listed 26% discount on those radios to about a 63% discount. L3H then included the LTE and BeOn features for free at an additional discount. The overall GRRN discount decreased as the features removed from each radio (multiband to dual band, OTAR, LTE, BeOn) equate to ~\$2,500 list price from each radio. Multiply this amount by the 354 radios and then apply the 63% discount. That amount would be taken from the GRRN discount which should have reduced that discount by \$562k. Instead, the GRRN discount reduced by \$318k but then LTE / BeOn were included for free, making the overall discount reduction equal to \$130k.

4.0 SYSTEM COMPARISONS

Comparing this L3H proposal to two recent projects involving the implementation of a new P25 Phase II radio system joining to an existing CORE, one involving L3H and one involving Motorola, show the following results.

Stephenville (L3H) – 2021 pricing

Core License

1 RF site (no simulcast equipment, Erath will have simulcast equipment at 4 RF Sites)

3 Microwave connections

3 Dispatch Consoles

3 Control Stations

130 subscriber radios

Total ~ \$1.66M

PRICING SUMMARY

L3Harris is pleased to provide Erath County, Texas with the following firm fixed price proposal. Pricing is valid for 60 days from submittal date of September 25, 2023. Upon expiration of the pricing validity, L3Harris reserves the right to provide an updated pricing proposal.

P25 RADIO SYSTEM INFRASTRUCTURE	LIST PRICE (USD \$)	% OFF	PRICE (USD \$)
Premier Core Licenses	\$56,600.00	26%	\$41,884.00
Northwest Site Equipment, Licenses, and Software	\$348,037.43	25%	\$261,567.73
Morgan Mill Site Equipment, Licenses, and Software	\$341,513.30	25%	\$256,739.87
Stephenville (Prather Tower) Licenses	\$50,000.00	26%	\$37,000.00
Dublin 2 Equipment, Licenses, and Software	\$338,937.36	25%	\$254,833.68
Erath SO Dispatch Center Equipment, Symphony Consoles (QTY 4), XL-200M Constrol Stations (QTY 4 Law & QTY 3 Fire), & Antenna System	\$472,661.78	26%	\$350,669.06
Back-up Power (Northwest, Morgan Hill, & Dublin 2)	\$131,100.00	0%	\$131,100.00
Microwave Equipment, Installation, and Onsite Training	\$777,488.92	2%	\$764,312.40
P25 RADIO SYSTEM INFRASTRUCTURE SUBTOTAL			\$2,098,106.74
PROFESSIONAL SERVICES			PRICE (USD \$)
Implementation and Support Services	\$1,257,958.00	0%	\$1,257,958.00
Staging & Freight	\$30,247.00	0%	\$30,247.00
Civils	\$245,952.50	0%	\$245,952.50
Training	\$30,675.00	0%	\$30,675.00
PROFESSIONAL SERVICES SUBTOTAL			\$1,564,832.50
SUBSCRIBER UNITS			PRICE (USD \$)
XL-200M Mobile - Multiband (QTY 65) - Fire	\$647,401.95	26%	\$479,007.95

-SERVICE ASSIST,STANDARD WARRANTY 2 YR, XL200M
-SERVICE ASSIST,EXT WARRANTY 3 YR, XL200M
-FEATURE, VHF BAND
-FEATURE, 700/800 MHZ BAND
-FEATURE, ENCRYPTION LITE
-FEATURE, PHASE 2 TDMA
-FEATURE, IN-BAND GPS
-FEATURE,XL200M SINGLE-KEY DES ENCRYPTION
-FEATURE,XL200M SINGLE-KEY AES ENCRYPTION
-FEATURE PACKAGE, P25 TRUNKING
-KIT, MOUNTING XL-MOBILE UNIVERSAL
-MICROPHONE, XL, STANDARD MOBILE
-ANTENNA, ELEMENT, FLEXIBLE, V/U/700/800
-ANTENNA, BASE, STD ROOF MOUNT LOW LOSS
-ANTENNA, GPS, ROOF MOUNT
-CONTROL UNIT, XL-CH

SUBSCRIBER UNITS			PRICE (USD \$)
XL-200P Portable - Multiband (QTY 135) - Fire	\$1,322,355.40	27%	\$969,182.15

-PORTABLE,XL-200P,FKP,PGRN,US,NA
 -SERVICE ASSIST,STANDARD WARRANTY 2 YR, XL200P
 -SERVICE ASSIST,EXT WARRANTY 3 YR, XL200P
 -FEATURE, LTE
 -FEATURE, IN-BAND GPS
 -OPERATION,LOAD NIFOG PERSONALITY
 -FEATURE,P25 PHASE 2 TDMA
 -FEATURE, ENCRYPTION LITE
 -FEATURE, SINGLE-KEY AES ENCRYPTION
 -FEATURE, SINGLE-KEY DES ENCRYPTION
 -FEATURE PACKAGE,P25 TRUNKING
 -OPTION,IMMERSIBLE RADIO OPERATION
 -FEATURE PACKAGE,DUAL BAND VHF+7/800
 -BATT.LI-ION,4800,HI-CAP,HAZLOC RADIO,C1D
 -ANTENNA,FLEX,HELICAL,136-870 MHZ
 -SPKR MIC, XL XTRM, XL200P, GRN
 -CHARGER, SINGLE BAY +
 -BEON XL RADIO LICENSE
 -KIT,GLOVE FRIENDLY KNOB COVER-VOL&CHAN (QTY 45)

XL-200M Mobile - Multiband (QTY 73) - Law	\$781,830.73	26%	\$578,554.93

-SERVICE ASSIST,STANDARD WARRANTY 2 YR, XL200M
 -SERVICE ASSIST,EXT WARRANTY 3 YR, XL200M
 -FEATURE, VHF BAND
 -FEATURE, 700/800 MHZ BAND
 -FEATURE, ENCRYPTION LITE
 -FEATURE, PHASE 2 TDMA
 -FEATURE, IN-BAND GPS
 -FEATURE, 256-AES, 64-DES ENCRYPTION
 -FEATURE PACKAGE, P25 TRUNKING
 -KIT, MOUNTING XL-MOBILE UNIVERSAL
 -MICROPHONE, XL, STANDARD MOBILE
 -ANTENNA, ELEMENT, FLEXIBLE, V/U/700/800
 -ANTENNA, BASE, STD ROOF MOUNT LOW LOSS
 -ANTENNA, GPS, ROOF MOUNT
 -CONTROL UNIT, XL-CH

XL-200P Portable - Multiband (QTY 81) - Law	\$781,651.62	27%	\$572,805.27

-PORTABLE,XL-200P,FKP,BLK,US,NA
-SERVICE ASSIST.STANDARD WARRANTY 2 YR, XL200P
-SERVICE ASSIST,EXT WARRANTY 3 YR, XL200P
-FEATURE, LTE
-FEATURE, IN-BAND GPS
-OPERATION,LOAD NIFOG PERSONALITY
-FEATURE,P25 PHASE 2 TDMA
-FEATURE, ENCRYPTION LITE
-FEATURE,256-AES,64-DES ENCRYPTION
-FEATURE PACKAGE,P25 TRUNKING
-FEATURE PACKAGE,DUAL BAND VHF+7/800
-BATTERY,LI-ION,HI-CAPACITY,4800MAH
-ANTENNA,FLEX,HELICAL,136-870 MHZ
-SPEAKER MICROPHONE
-CHARGER, SINGLE BAY +
-BEON XL RADIO LICENSE

Mobile Installation, Radio Programming, & Legacy Subscriber Removal	\$111,833.96	0%	\$111,833.96
SUBSCRIBER UNITS SUBTOTAL			\$2,711,384.26

SYSTEM TOTAL	\$6,374,323.50
Granbury Regional Radio Network Additional Discount	-\$1,374,401.50
**LTE Feature One-time Discount	-\$142,560.00
**BeOn Application One-time Discount	-\$43,362.00
PROJECT TOTAL	\$4,814,000.00

OPTIONS BELOW THE LINE			
Maintenance (Year 1-15) - REQUIRED PER GRRN	\$2,568,264.14	0%	\$2,568,264.20
Dublin 2 Generator, Shelter, and Services	\$183,088.75	0%	\$183,088.75
Morgan Hill Generator, Shelter, and Services	\$183,088.75	0%	\$183,088.75
Northwest Generator, Shelter, and Services	\$183,088.75	0%	\$183,088.75
Portable Radio Optional Accessories (Leather Case - QTY 216, Speaker Mic 500F - QTY 135, Backup Batteries - QTY 216, & Programming Cables - QTY 2)	\$110,595.00	25%	\$82,409.70
Mobile Radio Optional Accessories (External Speakers - QTY 138, CABLE, XL-MOBILE, SPEAKER ACCY QTY 138 & Programming Cables - QTY 2)	\$27,030.00	24%	\$20,571.60
Exacom Logging Recorder, Maintenance Years 1-3, & SUMS Support Years 1-6	\$122,988.80	0%	\$122,988.80

*State and Local taxes not included

One Hundred Percent (100%) of the purchase price of Terminal Hardware shall be invoiced upon shipment of unit on a per unit basis.

Unless otherwise specified, the Granbury Regional Radio Network Additional Discount applied to reach the project total is based upon all items proposed and overall system package purchase.

**Feature and application discount is contingent upon Erath County, TX providing L3Harris a signed contract by September 28, 2023

Milestone Payment Schedule	%	Invoice Value
Contract Execution	15%	315,392.36
Detailed Design Review	10%	210,261.57
Microwave System Procurement	20%	420,523.15
Standard Equipment Procurement	10%	210,261.57
Equipment Staging @ Factory	10%	210,261.57
Infra Equipment Shipment	5%	105,130.79
Installation	20%	420,523.15
Final System Acceptance	10%	210,261.57
Infrastructure & Services	100%	\$2,102,615.74
L3Harris Radios	100%	\$2,711,384.26
Total Milestone Payments	100%	\$4,814,000.00

Chris Brooks
Erath County Office of Emergency Management



100 W. Washington St.
Stephenville TX 76401
Email: erathecoc@co.erath.tx.us

Phone: 254-965-1326
Fax: 254-965-1466
Cell: 254-485-5032

Granbury Core Fees

\$13.00 per subscriber X354 \$4,602.00 Monthly
\$20.00 per control station X7 \$140.00 Monthly
\$10.00 BeOn app access X60 \$600.00 Monthly
\$450.00 Per Console X4 \$1800.00 Monthly
\$2,500 Core access Monthly
Total Granbury Monthly fees \$9,642.00

L3 Harris Service contract

TERM (Period of Performance)

ANNUAL SUPPORT FEES

Year 1 \$78,877.13 – Monthly \$6,573.09
Year 2 \$90,814.66 – Monthly \$7,567.88
Year 3 \$92,803.50 – Monthly \$7,733.62
Year 4 \$ 119,243.46 – Monthly \$9,936.95
Year 5 \$ 96,912.80 – Monthly \$8,076.06
Year 6 \$ 99,035.19 – Monthly \$8,252.93
Year 7 \$ 548,849.41 – Monthly \$45,737.45
Year 8 \$ 103,420.43 – Monthly \$8,618.37
Year 9 \$ 105,685.34 – Monthly \$8,807.11
Year 10 \$ 135,795.37 – Monthly \$11,316.28
Year 11 \$110,365.04 – Monthly \$9,197.08
Year 12 \$ 112,782.04 – Monthly \$9,398.50
Year 13 \$ 144,913.94 – Monthly \$12,076.17
Year 14 \$ 608,410.62 – Monthly \$50,700.89
Year 15 \$ 120,355.28 – Monthly \$10,029.61
TOTAL ANNUAL SUPPORT FEES (YEARS 1-15) \$ 2,568,264.20



SYSTEM PURCHASE AGREEMENT

BETWEEN

**ERATH COUNTY, TEXAS
(Buyer)**

and

**L3HARRIS TECHNOLOGIES, INC.
COMMUNICATION SYSTEMS SEGMENT
(Seller)**

DATE: September 26, 2023

SYSTEM PURCHASE AGREEMENT

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EXHIBITS

- A. STATEMENT OF WORK
- B. SOFTWARE LICENSE AGREEMENT
- C. MAINTENANCE SERVICES AGREEMENT



SYSTEM PURCHASE AGREEMENT

THIS SYSTEM PURCHASE AGREEMENT ("Agreement") is made and entered into this 26th day of September, 2023 ("Effective Date"), by and between the Erath County, Texas, (hereinafter referred to as "Buyer") and L3Harris Technologies, Inc., a Delaware corporation, acting through its Communication Systems Segment (hereinafter referred to as "Seller") together the ("Parties").

WITNESSETH:

WHEREAS Seller, whose address is 221 Jefferson Ridge Parkway, Lynchburg, VA 24501, delivered a proposal (collectively, the "Seller's Proposal") to provide the radio communication System and services.

WHEREAS Buyer has selected Seller's Proposal and now desires to contract with Seller to provide Buyer with the radio communications System and services set forth in the Statement of Work attached to this Agreement as an exhibit.

WHEREAS Buyer and Seller desire to enter into this Agreement to set forth in writing their respective rights, duties and obligations hereunder.

NOW, THEREFORE, for and in consideration of the mutual promises contained herein and other good and valuable consideration, the sufficiency and receipt of which are hereby acknowledged, it is mutually agreed between the Buyer and Seller as follows:

SECTION 1. DEFINITIONS:

As used herein, the terms set forth below shall have meanings set forth below.

- A.** "Acceptance" shall mean Acceptance of the System as set forth in the Testing and Acceptance section of this Agreement.
- B.** "Acceptance Date" shall mean the date the System is accepted or deemed accepted as set forth in the Testing and Acceptance section of this Agreement.
- C.** "Acceptance Tests" shall mean the testing procedures attached to the Statement of Work and mutually agreed upon by Buyer and Seller to be performed to determine whether the System has met the Acceptance criteria either set forth in the Statement of Work attached to this Agreement as an exhibit or as mutually agreed upon in writing by Buyer and Seller.
- D.** "Certificate of Insurance" shall mean the certificate to be provided by Seller evidencing the insurance coverage of Seller.
- E.** "Change Order" shall mean a written modification to the Total Agreement Price, Project Schedule or other Agreement terms which is signed by both Parties.
- F.** "Detailed Design Documents" shall mean those documents deliverable by Seller to Buyer at the conclusion of the Detailed Design Review described in the subsection Detailed Design Review under the Project Management Planning section of this agreement.

- G. "Detailed Design Review" or "DDR" shall have the meaning given in the subsection Detailed Design Review under the Project Management Planning section of this agreement.
- H. "Documentation Deliverables" shall mean the standard commercial quality manuals to be furnished by the Seller to the Buyer pursuant to the terms set forth in the Statement of Work attached to this Agreement as an exhibit and this Agreement.
- I. "Effective Date of the Agreement" shall be the date on which the Agreement is signed by the last of the parties to sign the Agreement. The "Effective Date" shall be the date inserted on the first page of the Agreement.
- J. "Expiration Date" shall mean the date on which the Term of this Agreement shall end which shall be the end of the Warranty Period (as defined in the Warranty Section) except that some other sections of this Agreement may have a later end date for that section of the Agreement as specifically provided in those sections of this Agreement.
- K. "Hardware" shall mean, collectively, the Terminal Hardware and Infrastructure Hardware, as defined below.
- L. "Infrastructure Hardware" shall mean the equipment, goods, and materials to be supplied by Seller for the System infrastructure, as further described in the Statement of Work attached to this Agreement as an exhibit.
- M. "Project Kick-Off Meeting" shall have the meeting given in the Project Management and Planning section of this Agreement.
- N. "Project Manager" shall mean each respective Party's duly authorized representative designated to manage each Party's obligations.
- O. "Project Schedule" shall mean the schedule attached to the Statement of Work or otherwise mutually agreed upon by Seller and Buyer in writing for the delivery of the Hardware and Software and the performance of the Services described in the Statement of Work attached to this Agreement as an exhibit.
- P. "Project Sites" shall mean those sites where any construction work is performed or any Infrastructure Hardware is installed under the terms of this Agreement. The term "Project Sites" will include all of the Tower Sites (as defined below).
- Q. "Responsibility Matrix" shall mean the table included in the Statement of Work attached to this Agreement as an exhibit, which depicts the roles and responsibilities of Seller and Buyer set forth this Agreement.
- R. "Services" or "Work" shall mean the services and work to be provided by Seller to Buyer included in the Statement of Work attached to this Agreement as an exhibit.
- S. "Software" shall mean the proprietary computer software of Seller as owned exclusively by Seller or Seller's suppliers, as appropriate, and as further defined in and licensed to Buyer pursuant to the terms of the Software License Agreement.
- T. "Software License Agreement" shall mean the System Software License Agreement set forth in an exhibit attached to this Agreement.

- U. "Statement of Work" shall mean the description of the work to be performed by Seller to deliver the Hardware, install the System and provide the Services, all as described in an exhibit attached to this Agreement.
- V. "System" shall mean the radio communications System comprised of the Hardware and Software to be furnished by Seller to Buyer pursuant to the terms set forth in the Statement of Work attached to this Agreement as an exhibit.
- W. "Terminal Hardware" shall mean mobile units, portable units, control stations and related accessories to be provided by Seller as listed in the Statement of Work attached to this Agreement as an exhibit.
- X. "Total Agreement Price" shall mean the price of the Hardware, the Software license and the Services to be furnished by Seller to Buyer pursuant to the terms set forth in the Statement of Work attached to this Agreement as an exhibit and this Agreement.
- Y. "Tower Sites" shall mean those sites where Infrastructure Hardware will be installed on existing or new towers as included in the Contractor's Statement of Work and to be finalized in the Detailed Design Documents or subsequent Change Orders.

SECTION 2. SCOPE OF WORK:

- A. Seller shall furnish, deliver and install the Hardware and Software for the System and provide the Documentation Deliverables and Services in accordance with the terms of the Statement of Work, attached to this Agreement as an exhibit, the Project Schedule and this Agreement.
- B. The Detailed Design Documents, as described in the Project Management and Planning section of this Agreement and as amended from time to time in writing by the Parties, shall be incorporated into this Agreement after the Detailed Design Documents are approved by the Buyer and thereafter shall supersede any contrary provisions in the Statement of Work attached to this Agreement as an exhibit.
- C. Seller shall commence, carry on and complete its obligations under this Agreement with all deliberate speed in accordance with the dates set forth in the Project Schedule and in a sound, economical and efficient manner, in accordance with this Agreement and all applicable laws. In providing services under this Agreement, Seller agrees to cooperate with the various departments, agencies, employees and officers of Buyer.
- D. Seller agrees to secure at Seller's own expense all personnel necessary to carry out Seller's obligations under this Agreement. Such personnel shall not be deemed to be employees of Buyer nor shall they or any of them have or be deemed to have any direct contractual relationship with Buyer. Seller expressly understands and agrees that the Seller is and shall in all respects be considered an independent contractor.

SECTION 3. PROJECT MANAGEMENT AND PLANNING:

- A. **Project Managers.** Seller shall designate a Project Manager who will lead the Seller' team for the System installation project and other Services and Work described in this Agreement (the "Project") and will serve as the Buyer's primary point-of-contact for Seller's project team and the official liaison between Seller's project team and Buyer. Buyer shall designate a Project Manager to function as the single point-of-contact and official liaison between Seller's Project Manager and the Buyer.

- B. Project Completion Dates.** The Project completion dates are described in the schedule included in the Statement of Work, entitled "Project Schedule." The Project Schedule may only be modified by mutual written approval of the Parties or as otherwise provided in this Agreement.
- C. Project Kick-off Meeting.** Promptly after the Effective Date of the Agreement, the Seller's Project Manager shall schedule a Project Kick-Off Meeting, the timing and location of which will be mutually agreed upon by Seller and Buyer. The objectives of this meeting include introduction of all project participants, review of the roles of the project participants, review of the overall project scope and objectives, review of the resource and scheduling requirements and review of current site status.
- D. Site Visits.** All existing towers, shelters and associated equipment provided by or mandated by Buyer shall be satisfactory in all manners to accommodate the System proposed by the Seller. Following the Effective Date of the Agreement, the Buyer shall provide Seller with access to all Project Sites upon reasonable notice to allow Seller to thoroughly examine each Site and to perform the Detailed Design Review, to prepare a schedule of preparatory work required for each site and a timeline for completion of the preparatory work at each site.
- E. Construction Management Services, Site Preparatory Work.** Seller shall perform the civil construction services set forth in the Statement of Work and the Responsibility Matrix including, but not limited to, the site improvement civil construction to be performed at the identified sites. Buyer shall identify and disclose to Seller any and all problems or conditions at all Project Sites of which Buyer is aware that may affect the Work to be performed by Seller under this Agreement.
- F. Detailed Design Review.** The Detailed Design Review ("DDR") phase will commence after the Effective Date of the Agreement, and conclude at a mutually acceptable time to maintain adherence to the Project Schedule. During the DDR, Seller's Project Manager will meet with Buyer's project team on one or multiple occasions to review the System design, technical data, and site specific information to confirm and to refine the System and Tower Sites. At the conclusion of the DDR, Seller will provide Buyer with the following documents (the "Detailed Design Documents") for review and approval by Buyer:
- Final Siting Plans
 - Project Schedule
 - Engineered Site plans (sufficient for the Buyer to obtain required zoning approvals) and construction drawings for each site.
 - Shelter Floor Plan Drawings
 - Rack Elevation Drawings
 - System Block and Level Diagrams
 - Power and HVAC Loads
 - Antenna Network Diagrams
 - Site Frequency Plans (including spectrum analysis and intermodulation studies of existing and proposed frequencies at each site).
 - TX Combiner Plan by Site
 - Network Backhaul Plans
 - Any other documents as mutually agreed upon by the parties.

Buyer shall have fourteen (14) days to conduct its review of the above documents. Approval of Detailed Design Documents by the Buyer shall not be unreasonably withheld, conditioned or delayed.

- G. **Project Schedule.** The Project Schedule for the Work is included in the Statement of Work, as an attachment entitled "Project Schedule." Updates to the start dates and durations will be made as the information evolves and will be mutually agreed upon by both parties or updated as otherwise provided herein.
- H. **System Implementation Communications.** Seller and Buyer shall jointly establish a plan that defines regular meetings, reporting structure, and other communications activities, including working sessions that may be needed throughout the term of this Agreement to plan sub-tasks, including at a minimum: (a) one or more DDR meetings to communicate the final engineering design; (b) formal monthly reports to Buyer's Project Manager concerning work in progress and accomplishments; (c) periodic status meetings at which the parties' Project Managers and other project participants will provide updates; (d) conference calls with Seller's and Buyer's project teams to discuss tasks, assign responsibility, and establish schedules; and (e) workshops or working sessions that may be needed throughout the Project to plan subtasks.
- I. **Buyer Approvals.** Buyer will review and respond with reasonable promptness to all submittals or other items requiring its approval under this Agreement. For all such submittals or other items Buyer will provide the Seller with either; (i) written notification of Buyer's approval, or (ii) a written notification of conditional approval subject to Seller providing prompt correction of any noted deficiency, or (iii) in the case of a submittal that does not meet the requirements of the Agreement, a written notification of Buyer's disapproval. Buyer's disapproval notification will be provided with reasonable detail to sufficiently advise Seller of the basis on which the submittal was determined to be unacceptable. Buyer agrees that, except as otherwise provided, failure to provide approval, conditional approval or non-approval of a submittal for which its approval is required within fifteen (15) days of receipt of the submittal from the Seller shall constitute approval of the submittal. The parties agree that this section, Project Management and Planning, does not relate to the Testing and Acceptance procedures in the Testing and Acceptance section of this Agreement.

SECTION 4. OBLIGATIONS FOR SYSTEM IMPLEMENTATION:

The following subsections apply to the Work to be performed under the Agreement.

- A. **Project Management and Implementation Plan.** Buyer and Seller each agree to perform their respective tasks and obligations pertaining to permits and licenses, Project Site surveys, general Project Site-related responsibilities, general Hardware-related responsibilities, and Project Site-specific responsibilities as set forth in the Statement of Work. The Buyer's obligations set forth in the Statement of Work shall be performed by Buyer in a timely and proper fashion in accordance with the Project Schedule, or as otherwise agreed upon by Buyer and Seller, to allow Seller to timely perform its obligations under the Agreement.
- B. **Access.** Buyer shall provide access, at no cost to Seller, to all owned, leased, or licensed Project Sites at reasonable times, and with an escort (if required) at no charge, upon reasonable prior notification from Seller. Buyer shall ensure sufficient room, within reason, for construction vehicles used by Seller. Buyer shall issue temporary identification cards to Seller's personnel and its authorized subcontractors, if required, for access to any of the Project Sites.

- C. **Changes in Sites.** Any sites where Seller will operate and perform System installation under the terms of this Contract must be approved by Buyer, which approval shall not be unreasonably withheld, delayed or conditioned. Should Buyer direct an addition to, removal from, or modification of the list of sites as detailed in this Agreement that affects Seller's cost or schedule or System performance, including, but not limited to coverage, the parties agree that such change shall entitle Seller to a Change Order and each Party shall attempt, in good faith to fully negotiate and execute such Change Order prior to commencement of the Work at the changed site.
- D. **Preparatory Work on Sites.** Notwithstanding anything to the contrary contained in this Agreement, the parties agree that some Project Sites may require tower replacement or modifications, as well as related permitting and licensing for Work and/or obtaining physical real estate space. As stated in the Responsibility Matrix, Buyer shall be responsible for securing all necessary site zoning, site access, or other permits (including but not limited to easements, impact studies, planning commission approval, variances, etc.) necessary for the Work, whether required by federal, state, or local authorities, with Seller assisting by providing information and any required civil engineering drawings. Buyer shall also have the responsibility to secure by lease, purchase, easement or otherwise all rights and access to selected sites or additional real estate as may be required. Buyer also shall be responsible for paying all utility charges to the appropriate utility for providing utility services to the System installation areas. The Parties agree to mitigate the need for tower replacement or modification to the extent practical. If any unanticipated tower replacements or modifications become necessary, Seller is entitled to an extension of time for any impacted activities and/or an equitable adjustment to the Contract Price to maintain the Project Schedule.
- E. **Frequency Federal Communications Commission (FCC) Licensing.** The Seller will complete and submit the FCC frequency license applications on behalf of the Buyer and will be responsible for all FCC Application and Coordination Fees. The Seller requires the Buyer to approve all documents/applications prior to submission to the Regional Planning Committee (RPC), FCC Certified Coordinator, or FCC, as applicable. Seller has no responsibility or obligation for the RPC, FCC Certified Coordinator, or FCC to approve the FCC applications. In the event that the necessary FCC licenses for this radio system require additional steps, applications, and/or studies and such additional work has a material impact on the cost of Work performed by Seller under the Agreement and/or the Project Schedule, the parties agree that Seller shall be entitled to an equitable adjustment to the Project Schedule, the Total Agreement Price, or both and that a Change Order shall be agreed to by the parties.
- F. **Federal Aviation Administration (FAA) Approvals.** Buyer will be responsible for obtaining all FAA approvals for newly-constructed or modified towers.
- G. **Contractor Licenses.** Seller will be responsible for obtaining all contractor licenses required for the performance of its duties and obligations.

SECTION 5. DELIVERY, TITLE AND RISK OF LOSS:

- A. **Infrastructure Hardware.** Seller shall ship the Infrastructure Hardware to Buyer at Seller's expense on or before the dates set forth in the Project Schedule. Partial deliveries shall be permitted. Upon delivery to the customer's designated location, title to each portion of the Hardware and all risk of loss or damage shall pass to Buyer. Infrastructure Hardware may be shipped directly to Buyer or to a mutually agreed upon staging or storage location. Buyer shall keep the Hardware fully insured for the total amount of all monies then due, or yet to become due, to Seller with respect to this Agreement.

- B. Terminal Hardware.** Seller shall ship the Terminal Hardware to Buyer at Seller's expense on or before the dates set forth in the Project Schedule. Partial deliveries shall be permitted. Upon delivery to the customer's designated location, title to each portion of the Hardware and all risk of loss or damage shall pass to Buyer.
- C.** If Buyer fails to take delivery of any of the Hardware, Seller may place such Hardware in storage at the place of manufacture or elsewhere. In such event: (1) Seller shall notify Buyer of the placement of any Hardware in storage; (2) Seller's delivery obligations shall be deemed fulfilled and title and all risk of loss or damage shall thereupon pass to Buyer; (3) any amounts otherwise payable to Seller upon delivery shall be payable upon presentation of Seller's invoices therefore; and (4) promptly upon submission of Seller's invoices therefore Buyer shall reimburse Seller for all expenses incurred by Seller such as preparation for and placement into storage, handling, storage, demurrage, inspection, preservation and insurance.

SECTION 6. PRICE:

The Total Agreement Price to be paid by Buyer to Seller is Four Million, Eight Hundred Fourteen Thousand Dollars and Zero Cents (\$4,814,000.00 USD). The individual prices for the units of Hardware, the Software license and the Services to be performed are as set forth in the Price Schedule as an attachment to the Statement of Work.

SECTION 7. TAXES:

In addition to any price specified herein, Buyer shall pay the gross amount of any present or future sales, use, excise, value-added, or other similar tax applicable to the price, sale or any Hardware or Services furnished hereunder or to their use by Seller or Buyer, or Buyer shall otherwise furnish Seller with tax exemption certificates acceptable to all applicable taxing authorities.

SECTION 8. CHANGES AND ADDITIONS:

- A. Hardware Changes.** In the event of any change in the Hardware as a result of the imposition after the Effective Date of this Agreement of any requirements by any federal, state, or local government, Seller shall be entitled to an equitable adjustment, by Change Order, in the Total Agreement Price, the Project Schedule, or both. Any such adjustment in the Total Agreement Price or Project Schedule shall be mutually satisfactory to Buyer and Seller. Price increases and/or extensions of time shall not be binding upon either Party unless and until evidenced by a Change Order signed by the parties hereto.
- B. Buyer Requested Changes.** Buyer may request changes in or additions to the Work or in the time or place of performance of the Work under this Agreement. If any such change causes an increase or decrease in the cost of, or the time required for, performance of any part of the Work under this Agreement, Seller shall be entitled to an equitable adjustment, by Change Order, in the Total Agreement Price, the Project Schedule, or both. Any such adjustment in the Total Agreement Price or Project Schedule shall be mutually satisfactory to Buyer and Seller. Price increases and/or extensions of time shall not be binding upon either Party unless and until evidenced by a Change Order signed by the parties hereto.
- C. Buyer Delays In Performance.** To the extent that Buyer fails to timely perform its obligations under the Responsibility Matrix or otherwise under this Agreement, and such failure has a material impact on the cost of Work performed by Seller under the Agreement and/or the Project Schedule, the Parties agree that Seller shall be entitled to an equitable adjustment to the Project Schedule, the Total Agreement Price, or both. Any such adjustment in the Total Agreement Price or Project Schedule

shall be mutually satisfactory to Buyer and Seller. Price increases and/or extensions of time shall not be binding upon either Party unless and until evidenced by a Change Order signed by the parties hereto.

- D. **Concealed Conditions.** If, following Buyer's Acceptance of the Detailed Design Documents, Seller encounters a concealed condition, of which it had no reason to be aware, at one or more Project Sites, then the Parties agree to work together to determine the best course of action and agree to negotiate in good faith a Change Order and an equitable adjustment to the Project Schedule and/or Total Agreement Price. Any such adjustment in the Total Agreement Price or Project Schedule shall be mutually satisfactory to Buyer and Seller. Price increases and/or extensions of time shall not be binding upon either Party unless and until evidenced by a Change Order signed by the parties hereto.
- E. **Product Discontinuance.** Subject to its obligation to fulfill its obligations set forth in the Agreement, Seller reserves the right to change or to discontinue any product covered by the Agreement provided that Seller agrees to make available to the Buyer a functionally equivalent replacement product equal to or better than the product discontinued.
- F. **Frequency Support and Frequency Changes.** Seller shall reasonably support Buyer in submitting the Buyer's frequency licensing applications to the regional authorities and the FCC for this project. In the event that, after all commercially reasonable efforts and due diligence have been expended, the Buyer cannot obtain all of the necessary United States and Canada government approvals for the frequency plan as described in this Statement of Work and this Agreement, it shall be treated as an excusable delay event pursuant to the Excusable Delays section of this agreement for which an extension to the Project Schedule shall be granted, and Seller will diligently and expeditiously prepare and provide to Buyer a System re-design for its review and approval including all price and Project Schedule changes. Notwithstanding anything to the contrary contained in the Agreement, the Parties agree if a System re-design has a material impact on the cost of Work performed by Seller under the Agreement and/or the schedule, the Parties agree that that Seller may be entitled to an equitable adjustment to the Total Agreement Price and/or the Project Schedule for Seller's services on any such System re-design. Any such adjustment in the Total Agreement Price or Project Schedule shall be mutually satisfactory to Buyer and Seller. Price increases and/or extensions of time shall not be binding upon either Party unless and until evidenced by a Change Order signed by the parties hereto. In the event that Buyer and Seller cannot mutually agree on the System re-design, either party may then terminate the Agreement on thirty (30) days written notice to the other Party.

SECTION 9. PAYMENTS:

- A. The Total Agreement Price for the Hardware, the Software license and the Services shall be paid by the Buyer to Seller as follows:

A.1. Infrastructure Hardware:

1. Fifteen percent (15%) of the Total Agreement Price (excluding the aggregate price of the Terminal Hardware included in the Total Agreement Price) shall be due at the time of the signing of the Agreement by the Buyer and Seller.
2. Ten percent (10%) of the Total Agreement Price (excluding the aggregate price of the Terminal Hardware included in the Total Agreement Price) shall be due at the time of the first System design review meeting.
3. Twenty percent (20%) of the Total Agreement Price (excluding the aggregate price of the Terminal Hardware included in the Total Agreement Price) shall be due at the time of procurement by L3Harris of the Microwave System Equipment as described in the project schedule.

4. Ten percent (10%) of the Total Agreement Price (excluding the aggregate price of the Terminal Hardware included in the Total Agreement Price) shall be due at the time of procurement by L3Harris of the Infrastructure Hardware (excluding the Microwave System Equipment) as described in the project schedule.
5. Ten percent (10%) of the Total Agreement Price (excluding the aggregate price of the Terminal Hardware included in the Total Agreement Price) shall be due at the time of Infrastructure Hardware factory staging as described in the project schedule.
6. Five percent (5%) of the Total Agreement Price (excluding the aggregate price of the Terminal Hardware included in the Total Agreement Price) shall be due at the time of Infrastructure Hardware shipment and delivery to Buyer. Partial payments of the total Infrastructure Hardware amount due under this subparagraph shall be allowed and shall be calculated using the value of the Infrastructure Hardware shipped and delivered as a percentage of the total value of the Infrastructure Hardware to be shipped and delivered under the terms of this Agreement. The Buyer shall have the right to inspect and confirm that the Infrastructure Hardware included in Seller's invoice has been delivered to Buyer.
7. Fifteen percent (15%) of the Total Agreement Price (excluding the aggregate price of the Terminal Hardware included in the Total Agreement Price) shall be due upon substantial completion of the Hardware installation (exclusive of the mutually agreed upon value of any punchlist items).
8. Fifteen percent (15%) of the Total Agreement Price (excluding the aggregate price of the Terminal Hardware included in the Total Agreement Price) plus any remaining unpaid portion of the Total Agreement Price for all Hardware, Software and Services to be provided under the terms of this Agreement (excluding the aggregate price of the Terminal Hardware included in the Total Agreement Price) shall be due upon final Acceptance of the System.

A.2. Terminal Hardware:

1. One Hundred Percent (100%) of the purchase price of Terminal Hardware shall be invoiced upon shipment of unit on a per unit basis.

B. Invoices and Electronic Funds Transfer

Invoices shall be submitted to the Erath County Judge's Office, at 100 W Washington, Stephenville, Erath County, Texas using Seller's standard invoice template. All payments from the County must come from current available revenue. Buyer shall pay all invoices via Electronic Funds Transfer ("EFT") directly to Seller's banking institution using Seller's banking information and EFT instructions below.

L3Harris Technologies, Inc.
Bank of America, New York, NY 10038
Account No.: 4451124230
Routing/ABA (ACH ONLY): 111000012
Routing/ABA (Wire ONLY): 026009593

C. Payment Dates

The Payment(s) associated with the event(s) above shall be due thirty (30) days following the date of Seller's invoice.

D. Other Amounts

Any other amounts due Seller hereunder shall be due upon Buyer's receipt of Seller's invoice.

E. Late Payments

All amounts past due over thirty (30) days shall accrue interest from their due date at the rate of one and one-half percent (1-1/2%) per month (or such lesser rate as may be the maximum permissible rate under applicable law).

SECTION 10. SUBCONTRACTING:

Seller may subcontract any portion of Work to be performed by Seller hereunder provided that Seller shall be responsible for the performance and Work of any such subcontractors.

SECTION 11. EXCUSABLE DELAYS:

- A.** Seller shall not be liable for delays in delivery or failure to perform due directly or indirectly to: (1) causes beyond Seller's reasonable control, (2) Acts of God, acts (including failure to act) of any governmental authority (de jure or de facto), wars (declared or undeclared), riots, revolutions, strikes or other labor disputes, fires, floods, sabotage, nuclear incidents, earthquakes, storms, epidemics, (3) Seller's inability to timely obtain necessary materials, items, components or services from suppliers who are affected by the foregoing circumstances, or (4) Buyer Delays in Performance of its obligations hereunder in a timely manner. The foregoing shall apply even though any of such causes exists at the time of signature of the Agreement by Seller or occurs after delays in Seller's performance of its obligations due to other reasons.
- B.** In the event of any delay or failure excused by this Section Excusable Delays, Seller shall as soon as practical notify Buyer and shall at the same time, or at the earliest practical date after such notice, specify the revised delivery and performance dates. In the event of such delay, the time of delivery or of performance shall be extended for a reasonable time period to compensate for the time lost by Seller by reason of the delay.

SECTION 12. SELLER'S INSURANCE:

- A.** In order to protect itself and Buyer, its officers, boards, commissions, agencies, employees and representatives under the indemnity and other provisions of this Agreement, Seller shall obtain and at all times during the term of this Agreement keep in full force and effect comprehensive general liability and auto liability insurance policies issued by a company or companies authorized to do business in the State of and licensed by the Insurance Department, with liability coverage provided for therein in the amounts of at least \$1,000,000.00 CSL (Combined Single Limits). Coverage afforded shall apply as primary. Within ten (10) days after execution of this Agreement, Seller shall furnish Buyer with a Certificate of Insurance listing Buyer as an additional insured. Seller shall maintain coverage for the duration of this Agreement and for two years following the completion of this Agreement. Seller shall furnish Buyer, annually on the policy renewal date, a Certificate of Insurance as evidence of coverage. It is further agreed that Seller shall furnish the Buyer with a 30-day notice of cancellation or renewal. Seller shall furnish evidence of adequate Worker's Compensation Insurance.
- B.** In case of any sublet of Work under this Agreement, Seller shall furnish evidence that each and every subcontractor has in force and effect insurance policies providing coverage substantially equal to that required of Seller.

- C. The parties do hereby expressly agree that Buyer, acting at its sole option and through its Risk Manager, may waive any and all requirements contained in this section Seller's Insurance, such waiver to be in writing only. Such waiver may include or be limited to a reduction in the amount of coverage required above. The extent of waiver shall be determined solely by Buyer's Risk Manager taking into account the nature of the Work and other factors relevant to Buyer's exposure, if any, under this Agreement.

SECTION 13. TESTING AND ACCEPTANCE:

- A. Seller shall notify Buyer that the System is ready for Acceptance Tests at least ten (10) days before commencement of the Acceptance Tests. Buyer and Seller shall jointly commence the Acceptance Tests on the date specified in Seller's notice (or other mutually agreeable date) and a representative of Seller and a representative of Buyer shall sign off on the form provided as part of the test procedure whether each item of the test was passed or failed. If the System does not fulfill the requirements of the Acceptance Tests, Seller shall (i) notify Buyer in writing if that such use has occurred and specify the date of Acceptance; and (ii) correct the defects at no additional cost to Buyer as soon as practicable. Upon correction of the defects the Acceptance Tests for the applicable part of the System shall be repeated in accordance with the procedures set forth in this Section. Successful completion of the Acceptance Test is the sole criterion for Acceptance of the System and the initiation of the Warranty Period. Final System Acceptance shall occur when the Hardware and Software for the System, Documentation Deliverables and Services have been furnished, delivered, installed and the Acceptance Tests have been passed.
- B. Notwithstanding the Acceptance testing of the System set forth in subsection A above, if Buyer commences use of any portion of the System for its intended purpose, other than for the express purpose of training or testing as mutually agreed upon by Seller and Buyer in writing, prior to System Acceptance, the applicable portion of the System shall be deemed accepted by Buyer. The final payment for the applicable portion of the System shall be due and payable upon such Acceptance. The Warranty Period for the applicable portion of the System put into use together with the associated installation Services shall be deemed to have commenced concurrently with the use of the applicable portion of the System for its intended purpose. The use of the applicable portion of the System for its intended purpose shall be deemed to have occurred when Buyer commences to use and rely primarily on the applicable portion of the System for its communications.
- C. As used in the Agreement, the term "Acceptance Date" shall mean and "Acceptance" of the System shall be deemed to occur upon the earlier of: (1) the date on which the System is deemed accepted pursuant to subsection (A) above, or (2) the date on which the System is deemed accepted pursuant to subsection (B) above.
- D. Buyer and Seller agree that in the process of completing the Acceptance Tests, most if not all of the Acceptance Tests can be successfully completed with only a minor number of punchlist items remaining to be completed. In such event, Buyer and Seller shall mutually (and reasonably) agree upon the punchlist items to be completed, the value of those items and that "Conditional Acceptance" of the System has occurred. For the purpose of initiating the Warranty Period, satisfying the Project Schedule requirements and the release of any retained funds (other than the value of the punchlist items) conditional Acceptance shall constitute "Acceptance" of the specific portion or phase of the System. Conditional Acceptance shall not, however, release Seller from its obligations to complete the remaining punchlist items by the dates set forth on the punchlist schedule.

- E. Terminal Hardware shall be deemed accepted upon Buyer's receipt of delivery at a Buyer-controlled facility, together with a bill of sale or other reasonably requested evidence of title.

SECTION 14. SOFTWARE LICENSE.

Subject to the terms and conditions of the Software License Agreement attached hereto as an exhibit to this Agreement, Buyer is granted a license to use the Software only in conjunction with the System purchased under this Agreement. "Software" means the "Licensed Programs" as defined in the Software License Agreement.

SECTION 15. COVERAGE:

Seller's representations concerning the distance at which usable radio signals will be transmitted and received by Hardware supplied hereunder are set forth in the Statement of Work. Coverage for the System shall be measured as provided in the Testing and Acceptance section of this Agreement.

SECTION 16. WARRANTIES:

A. Hardware and Services

Seller warrants for the following periods of time from the Acceptance Date (hereinafter referred to as the "Warranty Period"), that the Hardware and installation Services furnished by Seller under this Agreement shall be free from defects in material and workmanship and shall conform to the Agreement specifications. Any Services provided during the Warranty Period are set forth in the Statement of Work. Any and all claims for breach of this warranty are conclusively deemed waived unless made within the Warranty Period.

1. for mobile and portable radios, twenty-four (24) months.
2. for all other Hardware, one (1) year.

- B. For purposes of this Warranty the batteries supplied by Seller shall be deemed defective if: (1) the battery capacity is less than 80% of rated capacity, or (2) the battery develops leakage. Replacement batteries shall be warranted only for the remaining unexpired portion of the Warranty Period. This warranty becomes void if: (1) the battery has been subjected to any kind of misuse, detrimental exposure, or has been involved in an accident, or (2) the battery is used in equipment or service other than the Hardware for which it is specified.

- C. During the Warranty Period if any component of the Hardware or portion of the installation Services fails to meet the foregoing warranties, Seller's sole obligation and Buyer's exclusive remedy under this warranty shall be the correction by Seller of the failure. Seller shall, at Seller's sole option, (1) repair any defective component of the Hardware, or (2) furnish necessary repaired, refurbished, or replacement parts, or (3) correct the faulty installation. Seller will be responsible for all shipping charges incurred in returning defective parts to Seller's facility and the shipping charges to return repaired, refurbished, or replacement parts to Buyer. Any such repair or replacement of the defective component or the redoing of any installation shall not extend the Warranty Period. All warranty work must be at the Seller's place of business, for mobile or portable equipment, or at the Buyer's location for fixed location equipment. Any such repair or replacement of the defective component or the redoing of any installation shall extend the warranty for the replaced component for the longer of 90 days from the date of replacement or through the end of the Warranty Period.

- D. Any additional purchases of equipment, including radios, and installation services which may be purchased by Buyer and delivered or performed by Seller after System Acceptance, shall be warranted on the same terms, limitations, and exclusions as are set forth herein, except that the warranty on the

equipment and installation services shall be for a period of two (2) years for additional Terminal Hardware items from the date of delivery of that item of equipment, one (1) year for additional Infrastructure Hardware items from the date of delivery of that item of equipment, and one (1) year from the date of completion of that installation service.

- E. Seller's obligations shall not apply to: (1) Hardware or components thereof which are normally consumed in operation, or, or (2) defects which are the result of improper storage, use, or installation performed by other than Seller, maintenance performed by other than Seller, or repair performed by other than Seller, or (3) Hardware which has been subjected to any other kind of misuse or detrimental exposure or has been involved in an accident, or (4) Hardware or installations altered or repaired by any party other than Seller without Seller's prior written consent.
- F. **Coverage Warranty.** Notwithstanding the other provisions of this Section Warranties, Seller's only Warranty as to radio coverage is that the System, prior to Acceptance, shall have successfully passed the coverage tests in the Acceptance Test Plan.
- G. **Software**

The warranty for the Software is set forth in the Software License Agreement.

- H. THE WARRANTIES AND REMEDIES SET FORTH IN THIS SECTION AND IN THE SOFTWARE LICENSE AGREEMENT CONSTITUTE THE ONLY WARRANTIES WITH RESPECT TO THE HARDWARE, SOFTWARE AND SERVICES AND THE BUYER'S EXCLUSIVE REMEDIES IN THE EVENT SUCH WARRANTIES ARE BREACHED. THEY ARE IN LIEU OF ALL OTHER WARRANTIES WHETHER WRITTEN, ORAL, EXPRESS, IMPLIED, OR STATUTORY INCLUDING, WITHOUT LIMITATION, THE WARRANTY OF MERCHANTABILITY AND THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL SELLER BE LIABLE FOR SPECIAL, CONSEQUENTIAL OR INDIRECT DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR REVENUES.

SECTION 17. INTERFERENCE:

Radio System coverage and performance are subject to degradation or disruption due to anomalous propagation and interference by natural phenomena or other radio Systems ("Outside Interference"). Seller cannot be responsible for Outside Interference over which the Seller has no reasonable control. In the event of a case of degradation or disruption due to Outside Interference by natural phenomena or an outside party, Seller will provide engineering support to Buyer at Buyer's expense to support Buyer's efforts in investigating and resolving the Outside Interference.

SECTION 18. INDEMNIFICATION:

- A. Seller shall be responsible for and agrees to indemnify, hold harmless and defend the Buyer and its boards, commissions, agencies, officers and employees from and against all liability, losses, damages, costs or expenses which the Buyer and its boards, commissions, agencies and employees may sustain, incur or be required to pay by reason of third party claims, demands and causes of action for damages resulting from personal injuries, loss of life or damage to tangible property to the extent resulting from the willful misconduct or negligent acts or omissions of Seller, Seller's officers, agents, employees, or subcontractors. Buyer agrees to notify Seller in writing as soon as practical of any third party claim, demand or cause of action for which Buyer will request indemnification from Seller. Buyer will provide Seller with the necessary information and assistance to defend or settle such claim, demand or

cause of action. The obligations of Seller under this paragraph shall survive the expiration or termination of this Agreement.

- B.** To the extent that a county may, Buyer shall be responsible for and agrees to indemnify, hold harmless and defend the Seller and its board of directors, officers and employees from and against all liability, losses, damages, costs or expenses which the Seller and its board of directors, officers and employees may sustain, incur or be required to pay by reason of third party claims, demands and causes of action for damages resulting from personal injuries, loss of life or damage to tangible property to the extent resulting from the willful misconduct or negligent acts or omissions of the Buyer and its boards, commissions, agencies, employees and subcontractors. Seller agrees to notify Buyer in writing as soon as practical of any third party claim, demand or cause of action for which Seller will request indemnification from Buyer. Seller will provide Buyer with the necessary information and assistance to defend or settle such claim, demand or cause of action. The obligations of Buyer under this paragraph shall survive the expiration or termination of this Agreement.

SECTION 19. PATENTS:

- A.** Seller warrants that the System furnished hereunder shall be delivered free of any rightful claim of any third party for infringement of any United States patent or copyright. If Buyer notifies Seller promptly of the receipt of any claim that the System infringes a United States patent or copyright and gives Seller information, assistance and exclusive authority to settle and defend such claim, Seller at its own expense shall defend, or may settle, any suit or proceeding against Buyer so far as based on a claimed infringement which breaches this warranty. If, in any such suit arising from such claim, the continued use of the System for the purpose intended is enjoined by any court of competent jurisdiction, Seller shall, at its expense and option, either: (1) procure for Buyer the right to continue using the System, or (2) modify the System so that it becomes non-infringing, or (3) replace the System or portions thereof so that it becomes non-infringing, or (4) remove the System and refund the purchase price (less reasonable depreciation for use). The foregoing states the entire liability of Seller for patent or copyright infringement by the System and is subject to any limitation of total liability set forth in this Agreement.
- B.** The preceding subsection (A) shall not apply to: (1) any portion of the System which is manufactured to Buyer's design, or (2) the use of the System in conjunction with any other apparatus or material not supplied by Seller to the extent that such conjoined use causes the alleged infringement. As to any portion of the System or use described in the preceding sentence, Seller assumes no liability whatsoever for patent infringement.
- C.** THE PATENT AND COPYRIGHT WARRANTY AND INDEMNITY OBLIGATIONS RECITED ABOVE ARE IN LIEU OF ALL OTHER PATENT AND COPYRIGHT WARRANTIES AND INDEMNITIES WHATSOEVER, WHETHER ORAL, WRITTEN, EXPRESS, IMPLIED OR STATUTORY.

SECTION 20. LIMITATION OF LIABILITY:

- A.** Except for Seller's liability to third parties for its willful misconduct or negligent acts or omissions as more particularly described in the Indemnification Section of this Agreement, the total liability of Seller, including its subcontractors or suppliers, for all claims of any kind for any loss or damage, whether in contract, warranty, tort (including negligence or infringement), strict liability or otherwise, arising out of, connected with, or resulting from the performance or non-performance of this Agreement or from the manufacture, sale, delivery, installation, technical direction of installation, resale, repair, replacement, licensing or use of any Hardware, Software or the furnishing of any

Service, shall not exceed the amount paid by Buyer allocable to the particular item of Hardware, Software or Service which gives rise to the claim. Except as to title, any such liability shall terminate upon the expiration of the Warranty Period.

- B.** IN NO EVENT, WHETHER AS A RESULT OF BREACH OF AGREEMENT, WARRANTY, TORT (INCLUDING NEGLIGENCE OR INFRINGEMENT), STRICT LIABILITY OR OTHERWISE, SHALL SELLER, OR ITS SUBCONTRACTORS OR SUPPLIERS, BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, INDIRECT OR EXEMPLARY DAMAGES.
- C.** Any action for any claim of any kind for any loss or damages arising out of, connected with, or resulting from the performance, non-performance or breach of the Agreement, or from the manufacture, sale, delivery, installation, technical direction of installation, resale, repair, replacement, licensing or use of any Hardware, Software or the furnishing of any Services, shall be commenced within one (1) year after the cause of action accrued or it shall be deemed waived or barred.
- D.** The provisions of this Section, LIMITATION OF LIABILITY, shall apply notwithstanding any other provisions of this Agreement or any other agreement.
- E.** The provisions of this Section, LIMITATION OF LIABILITY, shall survive the expiration or termination of this Agreement.

SECTION 21. REMEDIES:

- A.** In the event of a material breach of this Agreement by Seller which shall continue for one hundred twenty (120) or more days after written notice of such breach (including a reasonably detailed statement of the nature of such breach) shall have been given to Seller by Buyer, Buyer shall be entitled to avail itself cumulatively of any and all remedies available at law or in equity (provided such remedies are not otherwise limited under the terms of this Agreement) and either: (1) suspend performance of its payment obligations under the Agreement for as long as the breach continues uncorrected; or (2) terminate this Agreement by written notice to Seller if the breach remains uncorrected. The following shall constitute material breaches of this Agreement:
 - 1. violation by Seller of any State, Federal or local law, or failure by Seller to comply with any applicable States and Federal service standards, as expressed by applicable statutes, rules and regulations.
 - 2. failure by Seller to carry applicable licenses or certifications as required by law.
 - 3. failure of Seller to comply with reporting requirements contained herein.
 - 4. inability of Seller to perform the Work provided for herein.
- B.** In the event of: (1) any failure by Buyer for thirty (30) or more days to make any payment when due, or (2) any other material breach of this Agreement by Buyer which shall continue for one hundred twenty (120) or more days after written notice of such breach (including a reasonably detailed statement of the nature of such breach) shall have been given to Buyer by Seller, Seller shall be entitled to avail itself cumulatively of any and all remedies available at law or in equity (provided such remedies are not otherwise limited under the terms of this Agreement) and either: (1) suspend performance of its obligations under this Agreement for as long as the breach remains uncorrected; or (2) terminate this Agreement by written notice to Buyer if the breach remains uncorrected.
- C.** In the event of a termination under this Agreement as provided herein, all Services performed and finished and unfinished Hardware and Documentation Deliverables produced or made by Seller for Buyer, up to and including the date of termination, shall become the property of Buyer and Seller shall

be entitled to receive full price accrued up to the point of termination, for any such Services performed and finished and unfinished Hardware and Documentation Deliverables. Notwithstanding the above, Seller shall not be relieved of liability to Buyer for damages sustained by Buyer by virtue of any breach of this Agreement by Seller described in subsection A above and, after providing Seller with written notice of breach as set forth in subsection A, Buyer may withhold any payments to Seller for the purpose of set-off of any damages, as agreed upon or finally adjudicated, against such payment.

SECTION 22. CONFIDENTIALITY:

- A.** During the term of this Agreement, it is anticipated that one party (hereafter the “Disclosing Party”) may disclose to the other party (hereafter the “Receiving Party”) information which the Disclosing Party considers proprietary and confidential. Accordingly, with respect to any specification, drawings, sketches, models, samples, tools, technical information, confidential business information or data, in written or other tangible form which: (1) has been designated in writing by the Disclosing Party as confidential or proprietary, or (2) is of the type that the Receiving Party customarily treats as confidential or proprietary, and which is furnished by the Disclosing Party to the Receiving party in contemplation of or under this Agreement (hereinafter “Information”), the Receiving Party shall treat such Information, for a period of five (5) years after the Effective Date of this Agreement, as confidential information with the same degree of care as the Receiving Party affords to confidential information of its own of a similar nature and shall not reproduce any such Information, in whole or in part, except as specifically authorized in writing by the Disclosing Party.
- B.** The provisions of the preceding subsection shall not apply to any Information which:
1. is or shall become publicly available without breach of this Section Confidentiality, on the part of the Receiving Party;
 2. is already known by the Receiving Party prior to receipt from the Disclosing Party;
 3. is independently developed by the Receiving Party;
 4. is rightfully obtained by the Receiving Party from third parties without restriction; or
 5. is required to be disclosed by appropriate governmental or judicial order provided that Receiving Party gives Disclosing Party prior written notice of such order and assists Disclosing Party in taking reasonable actions to restrict such order.
- C.** The provisions of this Section, Confidentiality, shall survive the expiration or termination of this Agreement.
- D.** The confidentiality obligations of this Section, Confidentiality, shall not apply to Software, the confidentiality and other rights and obligations with respect to which are set forth in the Software License Agreement.
- E.** Except as required to fulfill its obligations under this Agreement, Seller will have no obligation to provide Buyer with access to its Confidential Information and/or proprietary information. Under no circumstances will Seller be required to provide any data related to cost and pricing.
- F.** If any provision of this Agreement conflicts with the Tex. Gov’t Code 552.001, *et seq.*, as amended, the provision is void. Buyer may request AG opinions regarding the public availability of software and data furnished to Buyer by Seller. When Buyer relies on those opinions, Buyer has no liability to Seller for publicly disclosing software or data.

SECTION 23. COMPLIANCE:

Seller agrees to comply with all federal, state and local laws, ordinances, codes, rules and regulations in effect as of the Effective Date of this Agreement that may in any way affect the Work by Seller hereunder. Any Hardware or Software furnished by Seller under this Agreement shall comply in all material respects with federal, state and local laws and regulations applicable to the manufacture, packing, sale and shipment of such Hardware or Software as of the Effective Date of this Agreement and shall comply with any amendments thereto which may have come into effect prior to the time such Hardware or Software are delivered provided that the price and, if necessary, delivery of such Hardware or Software shall be equitably adjusted to compensate Seller for the effect of compliance with any such amendments.

SECTION 24. NOTICES:

Notices and other communications between the parties shall be transmitted in writing by certified mail or nationally recognized overnight courier service to the parties at the addresses set forth below and shall be deemed effective upon receipt by the receiving party. Either party may change its address by giving notice in writing thereof to the other party.

IF TO BUYER:

Erath County Judge
100 W Washington
Stephenville, Texas 76401

WITH A COPY TO:

Erath County Attorney
298 S. Graham
Stephenville, Texas 76401

BUYER INVOICE CONTACT:

Erath County Treasurer
100 W Washington
Stephenville, Texas 76401

IF TO SELLER:

L3Harris Technologies, Inc.
221 Jefferson Ridge Parkway
Lynchburg, Virginia 24501
Attn: Program Manager

WITH A COPY TO:

L3Harris Technologies, Inc.
221 Jefferson Ridge Parkway
Lynchburg, Virginia 24501
Attn: Christine Weaver or Jeremy Roe

SELLER INVOICE CONTACT:

L3Harris Technologies, Inc.
221 Jefferson Ridge Parkway
Lynchburg, Virginia 24501
Attn: Invoice Contact

SECTION 25. ORDER OF PRECEDENCE:

The Statement of Work and the following Exhibits are expressly incorporated herein by reference and, together with this Agreement, constitute the Agreement Documents. In the event of a conflict among or between the Agreement Documents, the documents shall control in the order of precedence set forth below:

1. Amendments to this Agreement
2. This Agreement (not including the Exhibits and documents listed below)
3. Detailed Design Documents
4. **Exhibit A** – Statement of Work, with Attachments
5. **Exhibit B** – Software License Agreement
6. **Exhibit C** – Maintenance Services Agreement

SECTION 26. TERM:

The term of this Agreement shall commence upon the Effective Date of this Agreement and shall run through the Expiration Date. The term of the Software license is set forth in the Software License Agreement.

SECTION 27. ENTIRE AGREEMENT:

The entire agreement of the parties is contained herein and this Agreement supersedes any and all oral agreements and negotiations between the parties relating to the subject matter hereof.

SECTION 28. AMENDMENT:

The parties expressly agree that this Agreement shall not be amended in any fashion except in a writing(s) executed by authorized representatives of both parties.

SECTION 29. SEVERABILITY:

The invalidity, in whole or in part, of any Section or part of any Section of this Agreement shall not affect the validity of the remainder of such Section or the Agreement.

SECTION 30. WAIVER:

No term of this Agreement may be waived except in a writing signed by the party waiving enforcement. No term of this Agreement shall be deemed to be waived by reason of any failure to previously enforce such term. In no event shall the making of any payment required by this Agreement constitute or be construed as a waiver by Buyer of any breach of the covenants of this Agreement or a waiver of any default of Seller and the making of any such payment by Buyer while any such default or breach shall exist shall in no way impair or prejudice the right of Buyer with respect to recovery of damages or other remedy as a result of such breach or default.

SECTION 31. HEADINGS:

Section headings are inserted for convenience only and shall not be used in any way to construe the meaning of terms used in this Agreement.

SECTION 32. GOVERNING LAW:

It is expressly understood and agreed to by the parties hereto that in the event of any disagreement or controversy between the parties, law shall be controlling. Venue for any legal proceedings shall be in any state or federal court in the Commonwealth of Virginia.

SECTION 33. ASSIGNMENT; SUCCESSORS AND ASSIGNS:

This Agreement shall not be assigned nor any interest or obligation in this Agreement transferred by either Party without the written consent of the other Party, which shall not be unreasonably withheld or delayed. Notwithstanding the above, Seller may assign this Agreement, without consent, (a) in whole or in part, to an affiliate, subsidiary, or authorized reseller or (b) in the event of a change of controlling ownership interest (either directly or indirectly) in Seller or in the event of merger, recapitalization, consolidation, other business combination or sale of all or substantially all of the assets of Seller. In addition, Seller may also assign or transfer, without consent, claims for money due or to become due Seller from Buyer under this Agreement to a bank, trust company or other financial institution if and only if the instrument of assignment

contains a provision substantially to the effect that it is agreed that the right of the assignee in and to any moneys due or to become due to Seller shall be subject to prior claims of all persons, firms and corporations for services rendered or materials supplied for the performance of the Work called for in this Agreement. Seller shall promptly provide to Buyer notice of any such permitted assignment or transfer without consent.

SECTION 34. COOPERATIVE PURCHASING:

- A. Purchases by Other Public Entities: This Agreement may be used by other public bodies to purchase infrastructure and related services, subscriber equipment and consoles on the pricing set forth below and in accordance with the terms, including applicable warranties, of this Agreement unless otherwise specified herein. This pricing cannot be combined with any other promotional offers. Such public bodies shall place their own order(s) directly with Seller, and Seller shall deal directly with any public body Buyer approves to use the Agreement. The terms and conditions of this Agreement shall govern purchases by other public bodies unless they and the Seller agree to execute separate contracts. With the approval of the Seller, any public body using this Agreement may add terms and conditions required by statute, ordinances, or regulations. To the extent permitted by law, the parties may agree to additional or modified terms and conditions unique to the public body or as required by the circumstances surrounding the purchase. Buyer, its officials and employees, are not responsible for placement of orders, invoicing, payments, contractual disputes, or any other transactions between the Seller and any other public bodies. In no event shall Buyer, its officials or employees, be responsible for any costs, damages or injury resulting to any party from use of a Buyer contract. If, when preparing such a contract, the additional terms and conditions of a public body seeking to purchase pursuant to cooperative procurement are unacceptable to the Seller, the Seller may withdraw its consent to extension of the contract to that particular body. Buyer assumes no responsibility for any notification of the availability of this Agreement for use by other public bodies, but the Seller may carry out such notification.
- B. Equipment Discounts. The specific Equipment listed below qualifies for the discounts as set forth in this Section 34:
- (1) L3Harris Equipment. Public bodies may purchase equipment with product codes C, N, NB, S, and P, at a discount of forty-five percent (45%) off the then-current catalog price.
 - (2) Standard Vendor Equipment. Public bodies may purchase equipment with product codes V, VC, and 77, at a discount of ten percent (10%) off the then-current catalog price.
 - (3) Tait Equipment. L3Harris-Tait co-branded products are excluded from the discounts provided herein.
 - (4) Infrastructure-related Services. Services are excluded from the discounts provided herein.

[Signature Page Follows]

IN WITNESS WHEREOF, Buyer and Seller have executed this Agreement.

BUYER

ERATH COUNTY, TEXAS

By: BH
Name: Brandon J. Huckabee
Title: County Judge
Date: 9-27-2023

Witness:

By: MJocelyn Perez
Name: MJocelyn Perez
Title: COS
Date: 9.27.2023

SELLER

L3HARRIS TECHNOLOGIES, INC.
ACTING THROUGH ITS
COMMUNICATION SYSTEMS SEGMENT

By: Jeremy S. Roe
Name: Jeremy S. Roe
Title: Principal, Contracts
Date: September 26, 2023

Witness:

By: Christine A. Weaver
Name: Christine A. Weaver
Title: Lead, Contracts
Date: September 26, 2023

LIST OF EXHIBITS

Exhibit A - STATEMENT OF WORK (with Attachments)
Exhibit B - SOFTWARE LICENSE AGREEMENT
Exhibit C - MAINTENANCE SERVICES AGREEMENT

EXHIBIT C

MAINTENANCE SERVICES AGREEMENT

[*attached separately*]

SERVICES AGREEMENT

THIS SERVICES AGREEMENT (“Agreement”) is made and entered into this 26th day of September, by and between **ERATH COUNTY, TEXAS** (hereinafter referred to as “Customer”) located at 298 S. Graham, Stephenville, TX 76401, and **L3HARRIS TECHNOLOGIES, INC.** (hereinafter referred to as “L3Harris”), a Delaware corporation, acting through its Communication Systems Segment located at 221 Jefferson Ridge Parkway, Lynchburg, VA 24501 (collectively referred to as the “Parties”). This Agreement shall begin on the Commencement Date and shall continue for a fifteen (15) year period (“Term”) through the Expiration Date.

This Agreement, along with its sections and attachments listed below, describes the terms and conditions for purchase of Services by Customer as described in this Agreement or other document(s) attached to and made part of this Agreement. In the event of any inconsistencies or conflicts within this Agreement, precedence shall be given to the documents in the order in which they are listed:

SECTION I	SCOPE
SECTION II	SERVICES
SECTION III	GENERAL TERMS AND CONDITIONS
SECTION IV	DEFINITIONS
ATTACHMENT A	EQUIPMENT LIST
ATTACHMENT B	SERVICE DESCRIPTIONS
ATTACHMENT C	CRITICAL SPARES LIST
ATTACHMENT D	POINT OF CONTACT AND NOTICE

I. SCOPE

1. This Agreement contains the terms and conditions for Customer’s purchase and L3Harris’ delivery of the Services. L3Harris shall provide the Services described in this Agreement, including its attachments. L3Harris’ obligations under this Agreement may be performed by L3Harris, its agents, representatives, subcontractors, or any combination thereof, at L3Harris’ discretion. In addition to the General Terms and Conditions, the Service Descriptions included in Attachment B may contain terms and conditions specific to that particular Service.
2. At Customer’s request and upon L3Harris’ approval, L3Harris may also provide Demand Services for additional support beyond the Services.
3. The Services are defined within this Agreement and are limited to only those Services in Section II. (“Services”) and further described in Attachment B (“Service Descriptions”). All Services provided under this Agreement are only applicable to the Equipment identified in Attachment A (“Equipment List”). Any Equipment not identified in the Equipment List is excluded from the Services.

II. SERVICES

Below sets forth the mutually agreed Services purchased by Customer.

SERVICES
Premium Technical Support
Security Update Management Services (SUMS+)
Software Managed Services (SMS)
SMS Installation
Standard Repair Services
Annual Preventive Maintenance
SUMS+ Installation

**SERVICES**Planned Network Upgrades
On-Site Corrective Maintenance

TERM (Period of Performance)	ANNUAL SUPPORT FEES
Year 1	\$78,877.13
Year 2	\$90,814.66
Year 3	\$92,803.50
Year 4	\$ 119,243.46
Year 5	\$ 96,912.80
Year 6	\$ 99,035.19
Year 7	\$ 548,849.41
Year 8	\$ 103,420.43
Year 9	\$ 105,685.34
Year 10	\$ 135,795.37
Year 11	\$110,365.04
Year 12	\$ 112,782.04
Year 13	\$ 144,913.94
Year 14	\$ 608,410.62
Year 15	\$ 120,355.28
TOTAL ANNUAL SUPPORT FEES (YEARS 1-15)	\$ 2,568,264.20

Invoicing Interval

- ☐ Monthly
☐ Quarterly
☐ Twice per Year
☐ Annually

Other: _____**Purchase Order Required** ☐ Yes* ☐ No

*If a Purchase Order ("PO") is required by Customer, Customer must issue L3Harris a PO before the Commencement Date, otherwise L3Harris may invoice Customer without the issuance of a Customer PO.

III. GENERAL TERMS AND CONDITIONS**1. SUPPORT.**

- a. Subject to the terms and conditions of this Agreement, L3Harris agrees to perform Services during the Term for the Support Fees, as may be amended from time to time in accordance with this Agreement. Services shall be provided for the Equipment at the Customer site(s) described in Attachment A ("Equipment List") and, unless agreed otherwise in writing, L3Harris shall not be obligated to provide Services for any products, equipment, hardware, software, site(s), or systems not identified in Attachment A ("Equipment List").
- b. L3Harris may supply new, used, reconditioned or substitute parts for the performance of Services. L3Harris shall provide Services at levels set forth in the manufacturer's product manuals and follow routine service procedures prescribed by L3Harris.
- c. If Customer purchases additional equipment from L3Harris, then that equipment must be added to the Equipment List by a mutually agreed upon Amendment to this Agreement for L3Harris to provide Services for that new equipment. The Amendment must also amend



Section II. ("Services") to account for the cost of providing Services for the additional equipment.

- d. If Equipment cannot, in L3Harris' reasonable opinion, be properly or economically serviced for any reason, the Parties may agree upon a mutually agreed to Amendment to i) remove that Equipment from this Agreement or ii) modify the scope of Services related to that Equipment or iii) increase the price of providing Services for that Equipment.
- e. As a Demand Service, inspect and repair out of specification Equipment, as applicable, before the Services of this Agreement commence.

2. DEMAND SERVICES.

- a. **Demand Services Fees.** At Customer's request and upon L3Harris' approval, L3Harris may provide Demand Services for an additional fee. L3Harris shall provide a written quote for such Demand Services based upon the circumstances known at the time of the request and L3Harris shall perform such Demand Services only once the Parties have mutually agreed upon the scope and fees for such Demand Services.
- b. **Writing Required.** Any Demand Services that L3Harris agrees to perform shall be clearly defined in a properly executed Amendment to this Agreement, purchase order, or separate agreement between the Parties.
- c. **Emergency on Demand.** L3Harris may provide Demand Services in a manner not consistent with the requirements in this Section in an emergency, on a case-by-case basis, and at L3Harris' sole discretion.
- d. **Excluded Services.** If Customer requests L3Harris to provide any Excluded Services listed in this Agreement, such Excluded Services will be considered Demand Services and will only be provided in accordance with this Section.

3. CONDITIONS OF SERVICE.

L3Harris' obligations to perform the Services are conditioned upon the below conditions being met by Customer. Customer shall:

- a. ensure Equipment is in good working order as of the Commencement Date and continues as such during the Term. Customer shall ensure Equipment is maintained per the recommended manuals. In addition to the Support Fees, Customer shall pay for Demand Services for any inspections performed by L3Harris to ensure Equipment is in good working order.
- b. work together with L3Harris to establish and maintain an Equipment List which will include serial numbers, if applicable, of all Equipment under this Agreement.
- c. notify L3Harris, promptly, of any Equipment failure or when any Equipment is lost, damaged, stolen, or taken out of service. L3Harris will respond to Customer's notification in a manner consistent with the Services of this Agreement.
- d. obtain and maintain all necessary permits required by Federal, state, tribal, or local governmental authority related to the Equipment and Services of this Agreement and remain in compliance with all such laws, rules, and regulations.



- e. purchase any necessary Hardware or upgrades, at Customer's expense, that may be necessary for the Services.
- f. not modify, enhance or otherwise alter any Software Update unless specifically authorized in the user documentation provided by L3Harris with such Software Update or unless the prior written consent of L3Harris is obtained.
- g. not create or permit the creation of any derivative work from any Software Update or the reverse engineering or replication of any Software Update.
- h. meet all General Customer Obligations and satisfy all Customer's requirements under this Agreement.

4. SITE ACCESS, RESPONSE TIMES.

- a. If applicable, Response Times described in this Agreement assume that the Equipment is accessible by normal transportation methods and vehicles. On-site Response Time requirements exclude site locations that may require extensive drive time due to traffic conditions or site locations where specialized vehicles are required.
- b. Waivers of liability from L3Harris or its subcontractors will not be imposed as a site access requirement.
- c. Unless otherwise stated in this Agreement, the Support Fees exclude any charges or expenses associated with helicopter, snow vehicle, ATV, boat, or other atypical access requirements; if these charges or expenses are reasonably incurred by L3Harris in rendering the Services, Customer agrees to reimburse L3Harris for those charges and expenses.
- d. Customer will be billed separately, as Demand Services, for time lost or changes in the Services due to any delay caused by Customer's action or inaction.

5. EXCLUDED SERVICES.

Only the Services in Section II. ("Services"), as further described in Attachment B ("Service Descriptions"), shall be provided. The Services shall not include exclusions defined in other parts of this Agreement. Unless purchased by Customer and listed as Services under Section II. Services of this Agreement, Excluded Services are the following services excluded from the Services of this Agreement:

- a. receiving Services for items not set out in Attachment A ("Equipment List") of this Agreement; or Equipment that has reached End of Life ("EOL") or End of Support ("EOS") or Equipment for which parts are not available.
- b. receiving Services at a location other than the site(s) or location(s) listed in Attachment A ("Equipment List") of this Agreement.
- c. correction of faults due to Customer's failure to meet its obligations outlined throughout this Agreement.
- d. correction of faults, defects, or damage caused by any of the following: i) Customer's modification, neglect, or misuse of the Equipment; ii) use other than in the normal, customary, intended, and authorized manner, or use not in compliance with applicable industry standards or OEM specifications ; iii) excessive wear and tear, abuse, vandalism, theft or other criminal activity, accident, disaster, fire, flood, water, weather or environmental conditions, liquids, power surges, acts of God; iv) acts or omissions or delays by Customer or Third-Party; v) work performed on Equipment by Customer or



- Third-Parties who are not authorized by L3Harris to perform such work; or vi) force majeure event not otherwise described within this Section.
- e. correction of faults in any equipment (whether or not supplied by L3Harris) not covered by this Agreement.
 - f. cleaning, painting, refinishing, or other cosmetic improvement of the Equipment.
 - g. relocation or transportation of Equipment, or the rectification of any faults caused by such relocation or transportation, unless where such relocation or transportation of Equipment was performed by L3Harris as a Service under this Agreement or other properly executed agreement between the Parties.
 - h. receiving any software unless expressly provided for as a Service under this Agreement.
 - i. implementation of changes to the Equipment or configurations which were not a requirement of the specifications for the Equipment listed in this Agreement or otherwise committed to by L3Harris in a properly executed agreement between the Parties.
 - j. correction of any fault which would be remedied by a software or routine maintenance or repair which is required by the specifications for the Equipment.
 - k. service for accessory items or items that are consumed in the normal operation of the Equipment such as: batteries, uninterruptable power supplies (“UPS”), belt attached objects such as clips and holsters, battery chargers, personal audio interfaces such as footswitches or ear pieces, headsets, keypads, fuses, knobs, lanyards, or labels.
 - l. services for custom or special products; modified Equipment or software; upgrading or programming Equipment.
 - m. repair or maintenance of any transmission path or transmission medium for voice or data radios including antennas, dishes, masts, tower top amplifiers, transmission lines, tower or tower lighting.
 - n. tower climbs or services for i) any Equipment mounted on towers or telephone lines, ii) computer networks, iii) the internet, or iv) Equipment malfunction caused by a transmission medium.
 - o. installation of software, Software Updates, or Security Updates unless such installation is L3Harris’ responsibility and falls within the defined Services of this Agreement. See SUMS+ Installation and/or SMS Installation, if applicable.
 - p. receiving system configuration documents or system audit.
 - q. training.
 - r. hardware upgrades unless such hardware upgrades are L3Harris’ responsibility and falls within the defined Services of this Agreement. See Planned Network Upgrades and/or Obsolescence Protection, if applicable.
 - s. additional services such as data backup, line sweeps, or taking readings or performing services beyond those listed in the Preventive Maintenance L3Harris Table, if applicable, or this Agreement.
 - t. repairs at the Customer location. See On-Site Corrective Maintenance, if applicable. In the event L3Harris deems Equipment is capable of being repaired at the Customer location, L3Harris may do so in its reasonable discretion.

- u. initial installation or configuration of any software, or installation of multiple revisions of software to catch up to a more recent software release, or to roll back to a previous software release, or any configuration changes. Note, this installation or configuration is neither included in SUMS+, SMS, nor VIDA Secure Sentry Installation Services.
- v. software installation on Equipment unless targeted by the L3Harris Software Update or L3Harris Operating System Patch and as per the SUMS+ Installation, SMS Installation, and/or VIDA Secure Installation Service Descriptions, as applicable.
- w. furnishing any microwave backhaul equipment; providing Services, support or warranty for any microwave backhaul equipment.

6. GENERAL CUSTOMER OBLIGATIONS.

Customer acknowledges that receipt of the Services and the amount of the Support Fee described in this Agreement are dependent on the prompt and proper performance of the Customer fulfilling the requirements under Conditions of Service and its obligations under this Agreement. Obligations require that Customer shall:

- a. ensure that all necessary clearances, escorts, ID cards, network access requirements including custom software or security credentials, or other requirements, have been provided to L3Harris, in advance of a L3Harris' technician(s)' visit, to allow prompt access to any Equipment requiring Services that may be located in a secured or limited access area under Customer's or Third-Party's control. Customer shall not restrict L3Harris access to the site(s) or prevent L3Harris from performing the Services under this Agreement on the basis that Customer does not have a L3Harris Certificate of Insurance ("COI") on file or in Customer's possession.
- b. provide L3Harris, at no charge, full and free access to the Equipment and an appropriate non-hazardous work environment located in the Equipment's physical location which should include, at a minimum, unlimited access, adequate shelter, heat, light, ventilation, electric current and outlets, and local wireless and telephone access for L3Harris' use in the Equipment's physical location.
- c. provide all information or services (including, but not limited to inventory/audits) under Customer's control relevant or pertaining to L3Harris' Services and/or pertaining to the Hardware and software elements of any system with which the Equipment is interfacing so that L3Harris may perform its Services.
- d. replace defective Equipment with a Critical Spare where required and promptly ship the defective Equipment to L3Harris in accordance with L3Harris' directions.
- e. ensure that the personnel responsible for carrying out the General Customer Obligations outlined in this Section are suitably qualified, authorized, trained and/or experienced.
- f. maintain a suitable environment for the operation and maintenance of the Equipment (including without limitation power supply, temperature and humidity control) in accordance with normal industry practices, and as set out in the published data sheets, manuals, or other written instructions for the Equipment.
- g. provide L3Harris with all cooperation to facilitate the efficient discharge of L3Harris' Services under this Agreement including, without limitation: i) providing the necessary physical and virtual access to the site(s) and the Equipment; ii) ensuring the site(s) comply with all relevant health and safety codes; and iii) providing, on request, a suitably qualified or informed representative, agent, or employee to accompany L3Harris personnel and to



advise L3Harris on access or on any other matter within the Customer's knowledge or control which will assist L3Harris in performing the Services under this Agreement.

- h. ensure systems backups (including all programs and data) and Equipment configuration records are kept up to date.
- i. install the Operating System Patches, as applicable under SUMS+, in the order of receipt and release from L3Harris. If Customer purchased SUMS+ Installation as part of the Services of this Agreement, L3Harris will install the Operating System Patches in accordance with the SUMS+ Installation Services of this Agreement.
- j. install the Software Update, as applicable, in accordance with the L3Harris provided Software Update installation instructions found within the Software Release Notes from L3Harris. If Customer purchased SMS Installation as part of the Services of this Agreement, L3Harris will install the L3Harris Software Updates in accordance with the SMS Installation Services of this Agreement.
- k. complete the Operating System Patches process on the target devices (e.g. rebooting the target devices) by following the instructions accompanying each Operating System Patches, as applicable under SUMS+.
- l. provide primary power source, PABX and PSTN connections or lines, radio frequency coverage performance after coverage verification test acceptance, suitable inter-site and inter node links, and further installation of the Equipment at the sites.
- m. provide secure and adequate facilities adjacent to or in reasonable proximity to the Equipment for the storage by L3Harris of tools and other items necessary to perform the Services. Customer shall permit L3Harris to have access to such storage facilities at all times.
- n. maintain confidentiality of any logon(s) and password(s) required to access Equipment or Services. Access to Tech-Link is only permitted for current Customer employees or contractors. Customer must manage and remove access rights for departing employees (for example by changing passwords) and L3Harris shall not be liable for any loss or damage incurred by Customer due to Customer's failure to comply with this clause.
- o. cooperate with L3Harris and perform all efforts that are necessary to enable L3Harris to provide the Services to Customer.
- p. ensure L3Harris can perform Services in a continuous effort.
- q. waive Services, without reimbursement, for Services when L3Harris does not have access to provide the Services or when L3Harris is unable to provide Services due to Customer's or Third-Party's action or inaction.
- r. provide L3Harris with at least two (2) Points of Contact, as described in Point of Contact Section of this Agreement.
- s. require at least one Point of Contact be available twenty-four (24) hours per day, seven (7) days per week with an escalation procedure to enable Customer's personnel to maintain contact, as needed, with L3Harris.
- t. perform and provide proof of performance of all routine and Preventive Maintenance and updates to software and Hardware as recommended in Equipment manuals unless such Preventive Maintenance is L3Harris' responsibility and falls within the defined Services of this Agreement.



- u. provide L3Harris a response to Summary Reports within thirty (30) days of receipt.
- v. reproduce any copyright notice and/or proprietary notice appearing on and/or in such Software Update, if Customer makes backup copies of any Software Update, and label all copies with all information, including part numbers and revision levels, provided on the original set of media provided by L3Harris.
- w. not to modify, enhance or otherwise alter any Software Update unless specifically authorized in the user documentation provided by L3Harris with such Software Update, or unless the prior written consent of L3Harris is obtained.
- x. not, under any circumstances, create or permit the creation of any derivative work from any Software Update or the reverse engineering or replication of any Software Update.
- y. decide whether to install or not install Software Updates, Operating System Patches, and/or VIDA Secure Sentry, as applicable, based on the risks and benefits involved and waive all L3Harris liability for such decision.
- z. provide L3Harris or L3Harris subcontractor the Software Updates and/or Operating System Patches for installation, if applicable.
- aa. comply with the L3Harris schedule for the performance of Services.
- bb. keep Equipment current and compliant with all regulatory agencies' and manufacturers' agreements, manuals, and licenses.

7. SERVICE REQUEST PROCEDURE.

Customer shall:

- a. require their users report issues to a designated Customer's Point of Contact.
- b. require its Point of Contact to provide Notice to L3Harris when there is any activity or inactivity that impacts the system, Equipment, or Services including system configuration changes.
- c. provide the software and interface cables or allow L3Harris the time needed to acquire such items, as needed to perform the Services on the Equipment.
- d. compile Equipment into a central location before Services are provided, as directed by L3Harris.
- e. submit a Service Request as set out in this Section of this Agreement with additional descriptions in Attachment B ("Service Descriptions").
- f. immediately after making a Service Request for L3Harris support, provide L3Harris, where possible, with an example of the relevant defect or error.
- g. keep L3Harris fully informed with up to date Equipment, site(s), and configuration details for the Equipment, including without limitation Equipment serial numbers, locations, contact information, and site personnel qualified to submit a Service Request.
- h. have personnel with sufficient Equipment related training to be able to i) carry out basic operating system housekeeping, ii) work through complex procedures with remote guidance provided by L3Harris, and iii) carry out procedures as outlined by L3Harris within a reasonable time after such procedures have been received from L3Harris.



- i. provide a mutually agreed form of communications link for remote diagnostics and promptly grant access rights to L3Harris and its subcontractors when required.
- j. maintain and make available the required type and number of Customer owned and managed Critical Spares in accordance with this Agreement.
- k. approve or disapprove additional charges L3Harris estimates are required to perform repairs or replace the Equipment within five (5) business days from the date of the estimate. If Customer disapproves the additional charges, Customer shall pay a Diagnostic Fee.
- l. pay additional costs for Demand Services for additional efforts including Equipment aggregation management, delays in work, software or cable interface acquisition for non-L3Harris equipment, configuration or software changes, or repairs.

8. FEES AND PAYMENT TERMS.

- a. Customer shall pay the Support Fees for Services and the Demand Services Fees for Demand Services.
- b. L3Harris reserves the right to increase the Support Fees as Equipment is added or if Customer requests an increased level of service, or if there is any other variation requested by Customer to this Agreement.
- c. Except as expressly provided in this Agreement, L3Harris may revise its Support Fees at any time by giving Customer notice not less than ninety (90) days before the rate change, provided that the revised rates are mutually agreed upon in writing. If the revised rates are not mutually agreed upon by the Parties within the ninety (90) day Notice period, L3Harris may terminate this Agreement in accordance with Section III.9. ("Term and Termination").
- d. Payment terms shall be net thirty (30) days from the date of invoice. Support Fees will be billed in advance and in accordance with Section II. ("Services").
- e. All fees payable under this Agreement are exclusive of sales, use, value added, goods and services taxes, or any customs, import or export duties, and should any such fees arise, these shall be payable by Customer. Where appropriate, such taxes will be added to the invoice, billed as a separate item, to the extent possible, and paid by Customer unless Customer provides L3Harris with evidence of payment or certificate of exemption.
- f. To the fullest extent permissible by law, Customer waives its right of set-off. No payment is considered received until L3Harris has received cleared funds.
- g. If Customer is overdue with any payment then, without prejudice to any other right or remedy available to L3Harris; i) Customer shall be liable to pay interest on the overdue amount at the rate of one and one-half percent (1.5%) per complete month until L3Harris has received payment of the overdue amount together with interest that has accrued; and ii) L3Harris may suspend contractual performance and/or exercise a lien over Equipment and any items returned for repair or replacement until Customer has made such overdue payment in full.

9. TERM AND TERMINATION.

- a. The Term of this Agreement shall begin on the Commencement Date and shall continue through the Expiration Date as indicated in this Agreement.
- b. In the event of: i) Customer's material breach because Customer fails to make any payment within thirty (30) days of the date of invoice, or ii) any other material breach of this Agreement by Customer which shall continue for thirty (30) or more days after Notice of



such to Customer, L3Harris shall be entitled to avail itself cumulatively of any and all remedies available at law or in equity and either: i) suspend performance of its obligations under this Agreement for as long as the breach remains uncorrected; or ii) terminate this Agreement by written Notice to Customer if the breach remains uncorrected.

- c. In the event of a material breach of this Agreement by L3Harris, Customer shall provide L3Harris with a reasonably detailed Notice of the breach. L3Harris will have thirty (30) days to provide a written plan to cure the default and begin implementing the cure plan immediately after the plan is approved by Customer. Customer shall not unreasonably disapprove of such cure plan. If L3Harris does not satisfy the requirements of this clause, Customer may terminate this Agreement effective upon giving a thirty (30) days' written Notice of termination.
- d. If L3Harris, in its sole discretion, provides Services after the termination or Expiration Date of this Agreement, the terms and conditions in effect at the time of the termination or Expiration Date will apply to those Services and Customer agrees to pay for such as Demand Services.
- e. Any termination of this Agreement will not relieve either Party of obligations previously incurred pursuant to this Agreement, including payments which may be due and owing at the time of termination. All sums owed by Customer to L3Harris will become due and payable immediately upon termination of this Agreement. Upon the effective date of termination, L3Harris will have no further obligation to provide Services.

10. CRITICAL SPARES.

- a. L3Harris requires Customer to purchase and store at the site (or other location agreed in writing between the Parties) the Critical Spares set out in Attachment C ("Critical Spares List"), of this Agreement. From time to time L3Harris will require Customer to purchase and store at the site additional Critical Spares, as L3Harris considers necessary for effective delivery of the Services.
- b. L3Harris will not be liable for any failure or delay in providing the Services where such failure or delay is the direct or indirect result of the failure of Customer to comply with the previous clause regarding the Critical Spares.

11. SPARE PARTS, SUBSTITUTION, END OF PRODUCTION.

- a. If Spare Parts are required to obtain Services, Customer shall be responsible for the purchase of Spare Parts in addition to the Customer's Critical Spares. L3Harris may, at Customer's request and in L3Harris' sole discretion, assist Customer in determining an inventory of suggested Spare Parts.
- b. L3Harris will generally support provisioning of its Equipment for a period of five (5) years after final production. L3Harris will endeavor to provide six (6) months advance notification of the final production date. Advance notification may be provided by L3Harris through any manner L3Harris deems appropriate. This may include notification through a(n): end-of-life notice, customer mailing, Tech-Link notice, letter, memo, or Amendment. L3Harris will utilize commercially reasonable efforts to assure its Equipment availability and shall not be liable to Customer for Equipment obsolescence or Equipment unavailability under this Agreement beyond L3Harris' commercially reasonable efforts. L3Harris may replace or repair Equipment with new or substitute products or parts, at its sole discretion, based on L3Harris' business needs.



- c. Third-Party Equipment and Third-Party Support Agreements (relative to the Third-Party Hardware) will be supported in accordance with the individual manufacturer's provisioning policy. L3Harris will utilize commercially reasonable efforts to assure Third-Party Spare Parts, Third-Party Equipment, and/or Third-Party Support Agreements are available for sale to Customer (at Customer's expense) to support its Services under this Agreement. L3Harris shall not be liable to Customer for Third-Party Spare Parts and Third-Party Equipment obsolescence or Third-Party Spare Parts and Third-Party Equipment and/or Third-Party Support Agreements unavailability under this Agreement beyond L3Harris' commercially reasonable efforts.
- d. At Customer's request, L3Harris shall provide to Customer an estimate of all charges for any required Third-Party Support Agreements; replacement parts or replacement equipment of any Spare Part or Equipment that has become obsolete or unavailable.

12. CONFIDENTIALITY.

- a. Nothing in this Agreement shall affect any related non-disclosure agreement between the Parties or other contractual obligations of confidentiality, which will continue in full force and effect and will apply to the subject matter of this Agreement. Customer shall not disclose Confidential Information to any Third-Party disclosed by L3Harris under or in relation to this Agreement.
- b. Each Party undertakes not to (and to procure that its employees and contractors will not) divulge the terms and conditions of this Agreement or any information of a confidential nature, including but not limited to Confidential Information, disclosed to it by the other, whether oral or written, and shall not use such information except as contemplated by this Agreement.
- c. The Party's obligations within this Section shall cease to apply to information which:
 - i. is or becomes part of the public domain without violation of this Agreement;
 - ii. is known and on record at the receiving Party before disclosure by the disclosing Party;
 - iii. is lawfully obtained by the receiving Party from a Third-Party without similar restrictions to those herein contained;
 - iv. is developed by the receiving Party completely independently of any such disclosure by the disclosing Party;
 - v. is required to be disclosed by competent government or regulatory agencies, court or stock exchange provided, however, that the receiving Party shall notify the disclosing Party as soon as lawfully and practically possible of the requirement to make such a disclosure.
- d. If any provision of this Agreement conflicts with the Tex. Gov't. Code 552.001, *et seq.*, as amended, the provision is void. Buyer may request AG opinions regarding the public availability of software and data furnished to Buyer by Seller. When Buyer relies on those opinions, Buyer has no liability to Sell for publicly disclosing software or data.

13. HEALTH, SAFETY, AND OTHER LAWS/REGULATIONS.

- a. Each Party shall comply with all relevant Health and Safety laws and regulations in all respects in relation to its obligations under this Agreement (including without limitation a safe working environment and methods of working), and each Party shall indemnify the other Party in respect of all costs, liabilities, damages or expenses incurred as a result of any failure to do so. In the event a work site or Equipment location is determined by

L3Harris to pose a safety or health threat, L3Harris may cancel or suspend the Services without penalty and until threat no longer exists.

- b. L3Harris will comply with applicable Federal, State, and local laws and regulations as of the date of this Agreement which relate to equal employment opportunity (including applicable provisions of Executive Order 11246, as amended), workmen's compensation, Services provided, and the manufacture in L3Harris' facilities of the Equipment delivered hereunder (including applicable provisions of the Fair Labor Standards Act of 1938, as amended). The price and, if necessary, delivery of any Equipment and Services will be equitably adjusted to compensate L3Harris for the cost of compliance with laws or regulations related to this Agreement.

14. EXCLUSIVITY.

- a. Customer shall only permit maintenance, repairs, additions, adjustments, or alterations to Equipment by a Third-Party with the prior written consent of L3Harris.
- b. In the event Customer effects maintenance, repairs, additions, adjustments, or alterations to the Equipment, Customer represents, warrants and agrees to use only L3Harris approved parts and procedures as directed by L3Harris for the operation of the Equipment. Note that the Customer makes such maintenance, repairs, additions, adjustments, or alternations at its own risk and such actions may cause Services to such Equipment to be excluded.

15. SOFTWARE AND INTELLECTUAL PROPERTY RIGHTS.

- a. All patents, trademarks, service marks, or business names, registered designs, copyrights, design rights, utility models, topography rights, applications to register any of the aforementioned rights, trade secrets, specifications, drawings, technical information, know-how and rights of confidence and any other intellectual or industrial property rights of any nature whatsoever in any part of the world ("IPR") arising under this Agreement, except to the extent that they comprise or incorporate IPR supplied by Customer, shall, as between the Parties, vest in and be owned by L3Harris absolutely and Customer shall acquire no right, title, or interest therein.
- b. Any computer program, firmware, or other software forming part of the Equipment or supplied by L3Harris to Customer pursuant to this Agreement shall remain the exclusive property of L3Harris (or its licensee) and such software shall, unless otherwise agreed in writing, be licensed to Customer under the license terms applicable to the Equipment, software, or systems to which they relate.
- c. Unless otherwise indicated, information provided to Customer via Tech-Link is copyrighted by and proprietary to L3Harris and may not be copied, reproduced, transmitted, displayed, performed, distributed, sublicensed, altered, stored for subsequent use, or otherwise used in whole or in part in any manner without L3Harris' prior written consent.
- d. All Software Updates and Security Updates shall be made available to Customer Point of Contact. In addition, each Software Update shall contain at least one (1) set of Software Release Notes. In the event any software media incurs damage while being made available from L3Harris to Customer Point of Contact, then L3Harris shall provide replacements to Customer at no additional charge.



- e. Customer agrees that if it makes any backup copies of any Software Update supplied by L3Harris, Customer will reproduce any copyright notice and/or proprietary notice appearing on and/or in such Software Update and will label all copies with all information, including part numbers and revision levels, provided on the original set of media provided by L3Harris. Nothing herein grants Customer any right to sublicense any software included in a Designated System or to distribute copies to any other person or entity, and such sublicensing and distribution is expressly prohibited.
- f. Customer agrees not to modify, enhance or otherwise alter any Software Update unless specifically authorized in the user documentation provided by L3Harris with such Software Update or unless the prior written consent of L3Harris is obtained. Under no circumstance shall Customer create or permit the creation of any derivative work from any Software Update or the reverse engineering or replication of any Software Update.
- g. Third-Party Software and Third-Party Support Agreements (relative to the Third-Party Software) will be supported in accordance with the individual manufacturer's provisioning policy. L3Harris will utilize commercially reasonable efforts to assure Third-Party Software and Third-Party Support Agreements are available for sale to Customer (at Customer's expense) to support its Services under this Agreement. L3Harris shall not be liable to Customer for Third-Party Software obsolescence or Third-Party Support Agreements unavailability under this Agreement beyond L3Harris' commercially reasonable efforts. At Customer's request, L3Harris shall provide to Customer an estimate of all charges for any required (and if available) Third-Party Support Agreements or Software of any Software that has become obsolete or unavailable.
- h. Nothing herein grants Customer any right to sublicense any software included as part of the Equipment or to distribute copies to any other person or entity, and such sublicensing and distribution is expressly prohibited.

16. FORCE MAJEURE.

L3Harris shall not be responsible for delays or failures in performance under this Agreement that are due to causes beyond its reasonable control including, but not limited to a Force Majeure Event as defined in this Agreement. In the event such delays or failures interrupt L3Harris' Services to Customer, L3Harris shall promptly notify Customer of the circumstances and the anticipated delay. Subject to L3Harris promptly notifying Customer in writing of the reason for and likely duration of the delay, the performance of L3Harris' obligations, to the extent affected by the delay, shall be suspended during the period that the cause persists provided that L3Harris shall use all reasonable efforts to avoid the effect of that cause provided that if performance is not resumed within ninety (90) days of that Notice the Customer may at any time thereafter, but in any event before resumption of obligations by L3Harris, by Notice terminate the affected portion of this Agreement.

17. INDEPENDENT CONTRACTOR.

Nothing herein contained shall be construed to constitute the Parties hereto as partners or joint ventures or the agent of the other Party in any sense of these terms whatsoever, and no Party may act for or bind another Party in any dealings with a Third-Party.

18. DISPUTES.

The Parties shall attempt to resolve in good faith any disputes arising under or in relation to or in connection with this Agreement or its subject matter. If good faith negotiations between the Parties fail to resolve the dispute then, before issuing court proceedings, the Parties shall give due



consideration to the use of mediation or alternative dispute resolution techniques and reference to independent experts.

19. JURISDICTION.

The construction, validity, and performance of this Agreement shall be governed and interpreted by the laws of the Commonwealth of Virginia, excluding its rules pertaining to conflict of laws. Customer consents to the personal jurisdiction of the state and federal courts within the Commonwealth of Virginia. Venue for any legal proceedings shall be in any state or federal court in the Commonwealth of Virginia, and the Parties waive all objections based on venue or forum non conveniens with respect to this Agreement.

20. WAIVER OF JURY.

By entering into this Agreement, L3Harris and Customer hereby expressly waive any rights either Party may have to a trial by jury of any civil litigation related to or arising out of this Agreement.

21. POINT OF CONTACT.

- a. Customer shall appoint two or more individuals to each be a Point of Contact who will interface between the Customer and its employees and L3Harris.
- b. Customer shall ensure each Point of Contact is an individual with sufficient technical expertise to be able to interact knowledgeably with L3Harris' technical support personnel.
- c. Names; contact information; and areas of specialty, if applicable, for each Point of Contact will be provided by Customer and attached as Attachment D ("Point of Contact and Notice"), to this Agreement.
- d. Customer shall provide Notice to L3Harris of any changes to Point of Contact information and shall submit a new Attachment D ("Point of Contact and Notice") within ten (10) business days of any significant modifications.

22. NOTICE.

Notices between the Parties shall be transmitted in writing by certified mail nationally recognized overnight courier service to the Parties at the addresses set forth in Attachment D ("Point of Contact and Notice") of this Agreement and shall be deemed effective upon receipt by the receiving Party. Either Party may change its address by giving Notice in writing thereof to the other Party.

23. WARRANTY.

- a. Any warranty provided outside this Agreement will take precedence for Equipment covered by such a warranty.
- b. **SERVICE WARRANTY. ALL SERVICES PROVIDED THROUGH THIS AGREEMENT SHALL BE PERFORMED IN A WORKMANLIKE MANNER. EXCEPT AS SPECIFIED IN THIS SECTION, L3HARRIS HEREBY DISCLAIMS AND CUSTOMER WAIVES ALL REPRESENTATIONS, CONDITIONS, AND WARRANTIES (WHETHER EXPRESS, IMPLIED, OR STATUTORY), INCLUDING WITHOUT LIMITATION, ANY WARRANTY OR CONDITION (A) OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT, TITLE, SATISFACTORY QUALITY, QUIET ENJOYMENT OR ACCURACY, (B) ARISING FROM ANY COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE IN THE INDUSTRY. TO THE EXTENT AN IMPLIED**



WARRANTY CANNOT BE DISCLAIMED, SUCH WARRANTY IS LIMITED TO NINETY (90) DAYS.

- c. CUSTOMER REMEDY. CUSTOMER'S SOLE AND EXCLUSIVE REMEDY FOR BREACH OF WARRANTY UNDER THIS AGREEMENT SHALL BE, AT L3HARRIS' OPTION, RE-PERFORMANCE OF THE SERVICES, TERMINATION OF THIS AGREEMENT, REMOVAL OF THE AFFECTED EQUIPMENT FROM THE EQUIPMENT LIST, REPLACEMENT OF THE EQUIPMENT AT ISSUE, AS APPLICABLE, CESSATION OR MODIFICATION OF THE APPLICABLE SERVICES AND RETURN OF THE PORTION OF THE SUPPORT FEES PAID TO L3HARRIS BY CUSTOMER FOR SUCH NON-CONFORMING SERVICES.
- d. REPAIR WARRANTY. ANY REPAIRED OR REPLACEMENT EQUIPMENT FURNISHED THROUGH SERVICES OF THIS AGREEMENT SHALL BE WARRANTED FOR THE REMAINING AND UNEXPIRED PORTION OF THE ORIGINAL WARRANTY PERIOD FOR THAT PART OR EQUIPMENT, OR NINETY (90) DAYS, WHICHEVER IS GREATER. ANY ORIGINAL WARRANTY PERIOD SHALL NOT BE EXTENDED. WHERE A FAILURE CANNOT BE CORRECTED BY L3HARRIS THROUGH COMMERCIALY REASONABLE EFFORTS, L3HARRIS WILL REFUND TO BUYER THE FEES PAID FOR THE REPAIRED OR REPLACED EQUIPMENT LESS DEPRECIATION.
- e. L3HARRIS MAY REPLACE OR REPAIR EQUIPMENT WITH NEW OR SUBSTITUTE PRODUCTS OR PARTS, AT ITS SOLE DISCRETION, BASED ON L3HARRIS' BUSINESS NEEDS.

24. LIMITATION OF LIABILITY.

- a. Nothing in this Agreement shall limit L3Harris' or its suppliers, agents, subcontractors, representatives' liability for personal injury or death caused by its negligence.
- b. L3Harris' liability to Customer or to any Third-Party arising out of or in connection with this Agreement or any collateral contract, whether in contract, tort (including, without limitation, negligence) or otherwise shall be limited to the greater of i) amounts paid or payable by Customer to L3Harris for the applicable Services during the six (6) months preceding the event or circumstances giving rise to such liability or ii) one hundred thousand (\$100,000) US dollars. The liability of L3Harris shall be cumulative and not per incident.
- c. Subject to the exceptions set forth in this Section, in no event shall L3Harris or its suppliers, agents, subcontractors, representatives be liable for any incidental, special, punitive or consequential damages, lost profits or lost or damaged data, or any indirect damages, whether arising in contract, tort (including negligence) or otherwise even if such losses or damages were foreseen, foreseeable, known or otherwise.

25. COVERAGE, INTERFERENCE, AND THIRD-PARTY FACILITIES.

Representations concerning the distance at which usable radio signals will be transmitted and received by the Equipment supplied hereunder shall not be binding upon L3Harris unless reduced to a writing signed by an authorized representative of L3Harris and made a part of this Agreement. Radio systems are subject to degradation of service from natural phenomena and other causes beyond the reasonable control of L3Harris such as motor ignition and other electrical noises, and interference from other users assigned to the same or adjacent frequencies. L3Harris cannot be responsible for interference or disruption of Services caused by operation of other radio systems

or by natural phenomena or by motor ignition or other interference over which there is no reasonable control. Such interference and noise can be minimized by addition (at Customer's expense) of corrective devices adapted for locations and installations. L3Harris may, at Customer's request and at Demand Services, investigate interference reported by Customer, and make recommendations as to the use of such devices; however, total freedom from noise and interference cannot be guaranteed. In the event Customer utilizes facilities or services supplied by others such as common carrier services or shared services, L3Harris shall have no responsibility for the availability or adequacy of any such facilities or services.

26. INSURANCE.

L3Harris shall obtain and at all times during the Term of this Agreement keep in full force and effect comprehensive general liability and auto liability insurance policies issued by a company or companies authorized to do business in the State(s) in which Customer's facilities are located, with liability coverage provided for therein in the amounts of at least \$1,000,000.00 CSL (Combined Single Limits). Coverage afforded shall apply as primary and evidenced by a Certificate of Insurance ("COI"), upon Customer's request.

27. SUBCONTRACTORS.

- a. L3Harris may subcontract Services in whole or in part. Should any subcontractor fail to perform, or their work otherwise proves unsatisfactory by L3Harris, L3Harris will arrange for continuing Services or Demand Services by qualified technicians for the duration of this Agreement.
- b. L3Harris shall not be liable for any work performed by a subcontractor, unless such subcontractor is performing work under L3Harris' direction and pursuant to a mutually executed agreement between L3Harris and the Customer.
- c. During the Term of this Agreement and continuing for a period of two (2) years after, Customer will not hire, engage on contract, solicit the employment of, or recommend employment to any Third-Party, any employee of L3Harris, or its subcontractors without the prior written authorization of L3Harris. This condition applies only to those employees of L3Harris or its subcontractors who are responsible for rendering Services under this Agreement. Customer shall not, however, be prohibited from employing any such person who contacts Customer on his or her own initiative and without any direct solicitation.

28. GENERAL.

- a. The failure of either Party to enforce any provision of this Agreement does not constitute a waiver of such provision and shall in no way affect the right later to enforce the terms and conditions. All waivers must be provided in writing by the Party waiving their rights under this Agreement.
- b. This Agreement cannot be amended, modified or any provisions waived orally. The Parties must execute an Amendment for any changes, amendments, or modifications to be effective.
- c. If any part or parts of this Agreement are held illegal, invalid, or unenforceable by any court or administrative body of competent jurisdiction, such determination shall not affect the legality, validity, or enforceability of the remaining parts of this Agreement which shall remain in full force and effect. Where available, the Parties shall use commercially reasonable efforts to agree upon a new stipulation resembling the invalid one in commercial purpose and effect.



- d. This Agreement may not be assigned by either Party without the consent of the other Party, which consent shall not be unreasonably withheld. Notwithstanding the immediately preceding sentence, L3Harris may: i) assign all its rights, obligations and liabilities under this Agreement to any subsidiary or parent company; or ii) assign its rights to monies due or payable under this Agreement; provided, that, L3Harris shall provide Customer with Notice of any such assignment. L3Harris' assignment of monies due or payable under this Agreement will not relieve L3Harris of any obligations or responsibilities to Customer hereunder.

29. MERGER/ENTIRE AGREEMENT.

This Agreement is the complete agreement between the Parties concerning the subject matter of this Agreement and replaces any prior implied, oral, or written communications between the Parties. There are no conditions, understandings, agreements, representations or warranties expressed or implied, that are not specified herein.

IV. DEFINITIONS

1. **AMENDMENT.** Means a written order, signed by both Parties, that amends, modifies, or waives any terms and conditions and/or Services of this Agreement.
2. **BUSINESS HOURS.** Means the hours of 8:00 a.m. to 5:00 p.m. local time, Monday through Friday excluding, national, state, and local holidays. Local time and local holidays are based on where the Customer's site(s) are located.
3. **COMMENCEMENT DATE.** Means twelve (12) months after Final System Acceptance, on which the Term of this Agreement begins as outlined in this Agreement.
4. **CONFIDENTIAL INFORMATION.** Means all pricing, software, technical, and IPR, commercial, financial, proprietary, trade secret, or other information and materials concerning the business and affairs of L3Harris.
5. **CRITICAL SPARES.** Means the Spare Parts a Customer is required to have on site at all times, as described in this Agreement and listed in Attachment C ("Critical Spares List").
6. **DEMAND SERVICES.** Means service requests beyond the scope of this Agreement. Demand Services may be performed for an additional cost, as determined by L3Harris. The installation, maintenance, repair, removal, reinstallation, and/or replacement of equipment not associated with the Services as defined in this Agreement shall be considered Demand Services. L3Harris has the right to reasonably refuse to provide Demand Services. Work performed outside of Business Hours may be considered Demand Services. Time lost or changes in the Services due to any delay caused by Customer's action or inaction may be considered Demand Services.
7. **DESIGNATED SYSTEM(S).** Means the L3Harris system(s) purchased by Customer and identified in Equipment List. The Designated System does not include excluded products or other systems to which the Designated System may be linked.
8. **DIAGNOSTIC FEE.** Means the fee that is charged if Customer disapproves charges to repair and/or replace Equipment upon L3Harris' determination for repair or replacement of Equipment, as per applicable service in Attachment B ("Service Description"). L3Harris will charge Customer a Diagnostic Fee based on the repair facility used and return the unrepaired Equipment to Customer.
9. **EMERGENCY CALLS.** Means calls received by L3Harris from Customer for Priority Technical Support (PTS) or Preferred Technical Support, as applicable, because of the Designated System being partially or completely off the air.



10. **EQUIPMENT.** Means the Hardware, Platform, software, and Designated System(s), for which Services are to be provided under this Agreement as identified exclusively and expressly outlined in the Equipment List attached to this Agreement as Attachment A ("Equipment List").
11. **EXCLUDED SERVICES.** Means the services specifically excluded in this Agreement as outlined within the Excluded Services of this Agreement, or other exclusions defined additionally in other parts of this Agreement.
12. **EXPIRATION DATE.** Means the date on which the Agreement expires, fifteen (15) years after the Commencement Date.
13. **FINAL SYSTEM ACCEPTANCE** has the meaning ascribed to it in Section 13 of the primary System Purchase Agreement.
14. **FORCE MAJEURE EVENT.** Means any event or circumstance or combination of events or circumstances that: i) is beyond the reasonable control of the affected Party; ii) could not have been mitigated, avoided, or prevented through the exercise of reasonable care and precautions; and iii) materially and adversely affects the performance by such Party of all or a part of its obligations under or pursuant to this Agreement. Force Majeure Events include but are not limited to acts of God, acts of government, war (declared or undeclared), insurrection, acts of terrorism, fires, severe weather, floods, earthquakes, epidemics, pandemics, quarantines, strikes, labor disputes, blackouts, embargoes, natural disaster, emergency conditions incompatible with safety or good quality workmanship, invasion, armed conflict or act of foreign enemy, blockade, revolution, rebellion, riot, civil commotion, sabotage; radioactive contamination or ionizing radiation; labor or material shortages that could not have been reasonably foreseen; any changes in law, including changes in tax laws; any lightning, hurricane, drought, tsunami, monsoon, tempest, storm, cyclone, volcano, mudslide, typhoon, tornado, or other unusually severe weather or act of nature; explosion or chemical contamination; any blight, famine, plague; any transportation accidents; suspension of flight operations due to inclement weather; delays of suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both L3Harris and its supplier, or any similar unforeseen event that renders performance commercially implausible.
15. **HARDWARE.** Means, collectively, the Terminals and Infrastructure Hardware.
16. **INFRASTRUCTURE.** Means the i) Radio Frequency (RF) site (consisting of only a duplexer, combiner, multicoupler, channels, Internet Protocol (IP) channel routers with interface cards, Network Sentry, Unified Audio Card (UAC), and Mini-Mobility Exchange (MME); ii) the dispatch site (consisting of only IP consoles, IP console switches, IP console routers, IP console internal interface cards, and IP console power supplies; or iii) VIDA Core equipment (consisting of only the VIDA Core IP server, storage array, IP router, backup device, firewall, fault management data collection device, and network management pc interface). Infrastructure and respective quantities are specifically itemized in the Equipment List.
17. **INFRASTRUCTURE HARDWARE.** Means the equipment, goods, and materials for the Infrastructure.
18. **L3HARRIS LICENSED PROGRAMS.** Means all L3Harris software programs and associated documentation nonexclusively licensed to Customer by L3Harris for use solely with the Designated System(s).
19. **NON-L3HARRIS INFRASTRUCTURE.** Non L3Harris Infrastructure may comprise of the following: microwave or data transport system components (such as microwave, fiber, multiplexors, and routers), logging recorders, timing receiving or generation systems, towers, tower top amplifiers, shelters, fences, landscaping, dehydrators, fuel tanks, alternating or direct current power systems (uninterruptible power supply (UPS), bi-directional amplifiers (BDAs),



monitors, inverters, converters, generators, or feeds), heating ventilation air conditioning (HVAC), fire suppression, and/or other environmental monitoring or affecting systems. Non-L3Harris Infrastructure and respective quantities for which Services will be provided are specifically itemized in the Equipment List.

20. **ON-SITE CORRECTIVE MAINTENANCE.** Means investigation of a Customer-reported problem at Customer's location after remote diagnostics are made and repair or replacement of Equipment, if necessary, using Customer purchased Spare Parts.
21. **OPERATING SYSTEM PATCHES.** Means modifications made by vendors of Third-Party Software Products to address issues or provide Security Updates.
22. **OPERATING SYSTEM PATCH DISTRIBUTION.** Means providing Operating System Patches to which the Customer is entitled under this Agreement for the Security Update Management Service (SUMS+), if applicable.
23. **PLATFORM.** Means the Infrastructure Hardware in combination with the operating system.
24. **POINT OF CONTACT.** Means the person(s) identified in this Agreement, as designated by the Customer. The Point of Contact will be the primary interface between Customer's employees and L3Harris.
25. **PREVENTIVE MAINTENANCE.** Means tests, checks, and alignment on Customer's Equipment to ensure that the Equipment meets the specifications of each Equipment's manual.
26. **RESPONSE TIMES.** Means the expected timeframe for L3Harris to respond to an unscheduled system problem or outage event as described in the applicable Attachment B ("Service Descriptions").
27. **SECURITY TECHNICAL IMPLEMENTATION GUIDE (STIG).** Means a methodology for standardized secure installation and maintenance of computer software and hardware.
28. **SECURITY UPDATES.** Means updates to software meant to mitigate, address and/or resolve product security vulnerabilities in system components offered by L3Harris. These updates include Vendor Patches and/or Vendor Work-Arounds. Third-Party Software Product remediations and security policy updates provided by VIDA Secure Sentry, as applicable.
29. **SECURITY UPDATE DISTRIBUTION.** Means providing Security Updates to which the Customer is entitled under this Agreement and the VIDA Secure Sentry Installation, as applicable.
30. **SERVICE(S).** Means Services to be provided by L3Harris, as identified and limited in the Section I. ("Scope"), Section II. ("Services"), and more specifically described in Attachment B ("Service Descriptions"), to be performed on Equipment identified on the Equipment List, as applicable.
31. **SOFTWARE RELEASE NOTES.** Means a set of notes provided by L3Harris detailing the contents of the Software Update or Operating System Patches, as applicable, and providing installation instructions, as applicable.
32. **SOFTWARE UPDATES.** Means L3Harris provided Software Updates for L3Harris Licensed Programs available for corrections, modifications, or minor enhancements to software for Equipment under this Agreement, including enhancements and/or corrections to existing features for the Equipment.
33. **SPARE PART(S).** Means additional parts required to complete repairs of the Equipment.
34. **SUMMARY REPORT.** Means communication to indicate action taken in a report to be provided to Customer within the frequency and intervals, and as exemplified under the applicable



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ATTACHMENT C
CRITICAL SPARES LIST

Part Number	Description	Quantity	Catalog Prices Per Unit	Catalog Prices Ext
EA-555027-003	Oscillator,SecureSync,Rb,Master,AC	1	\$ 20,601.00	\$ 20,601.00
VS-CR1V	ROUTER,ISR,C1111-4P	1	\$ 1,850.00	\$ 1,850.00
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1	\$ 1,150.00	\$ 1,150.00
SAMD8E	SITE MANAGER, VIDA EDGE	1	\$ 20,505.00	\$ 20,505.00
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1	\$ 495.00	\$ 495.00
SAMD8G	CONTROLLER, DIGITAL I/O	1	\$ 1,830.00	\$ 1,830.00
SAMD8K	MODULE, DIGITAL IN (8) & OUT SOURCE (8)	1	\$ 690.00	\$ 690.00
SAMD9B	MODULE, DIGITAL INPUT (16) ACTIVE LOW	1	\$ 690.00	\$ 690.00
SA-KRE1011217/02	ANTENNA,1574-1606 MHZ,WITH MOUNT	1	\$ 450.00	\$ 450.00
MASV-700M1-A	STATION,MASTR V,P25T,700 MHZ	1	\$ 15,650.00	\$ 15,650.00
SV-AW5L-A	POWER AMPLIFIER,LINEAR,700 MHZ	1	\$ 8,560.00	\$ 8,560.00
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	1	\$ 2,460.00	\$ 2,460.00
EA-555012-001	Ethernet Switch Module,MASTR V	1	\$ 2,900.00	\$ 2,900.00
SV-PM1C	Processor,Baseband Module,MASTR V	1	\$ 2,675.00	\$ 2,675.00
MASV-NZN8S	Fan Tray,MASTR V	1	\$ 512.00	\$ 512.00
SV-CG2U	MULTICOUPLER,7/800MHZ,6MHZ,AC,8CH	1	\$ 2,685.00	\$ 2,685.00
VS-CR1H	ROUTER,NOKIA,7705,SAR-8	1	\$ 13,155.00	\$ 13,155.00
VS-CU8P	ALCATEL,COPPER ENTERNET SFP, 100M	1	\$ 125.53	\$ 125.53
VS-CU8N	ALCATEL,SX,MULTIMODE,LC,SFP,FIBR,550M	1	\$ 242.81	\$ 242.81
VSCC01	Switch,T1/E1 Alcatel,SAR 16 port	1	\$ 4,007.88	\$ 4,007.88
E75-0298-001	TOWER TOP AMP, 799-817MHZ, N-FEMALE	1	\$ 2,530.00	\$ 2,530.00
14032-0009-106	MODULE,NOKIA,8P GE SFP CARD	1	\$ 3,100.00	\$ 3,100.00
XZ-MPM1M	MOBILE, XL-200M, MULTIBAND - Fire Configuration	2	\$ 9,960.03	\$ 19,920.06



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Part Number	Description	Quantity	Catalog Prices Per Unit	Catalog Prices Ext
XZ-LS6A	SPEAKER, EXTERNAL, MOBILE	2	\$ 60.00	\$ 120.00
XZ-CA6F	CABLE, XL-MOBILE, SPEAKER ACCY	2	\$ 120.00	\$ 240.00
XL-PFM1P-NA	PORTABLE,XL-200P,FKP,PGRN,US,NA - Fire Configuration	7	\$ 9,450.04	\$ 66,150.28
XZ-MPM1M	MOBILE, XL-200M, MULTIBAND - Law Configuration	2	\$ 10,710.01	\$ 21,420.02
XZ-LS6A	SPEAKER, EXTERNAL, MOBILE	2	\$ 60.00	\$ 120.00
XZ-CA6F	CABLE, XL-MOBILE, SPEAKER ACCY	2	\$ 120.00	\$ 240.00
XL-PFM1M-NA	PORTABLE,XL-200P,FKP,BLK,US,NA - Law Configuration	4	\$ 9,285.02	\$ 37,140.08

Items in the critical spares list are not included in the price of the Agreement. Pricing provided for budgetary / information only. Actual prices to be determined at the time of addition to the Agreement based on contract pricing and discounts.

Attachment B (“Service Descriptions”) for Services, or in another format as determined by L3Harris.

- 35. **SUPPORT FEES.** Means the amounts listed in Section II. (“Services”) in USD.
- 36. **SYSTEM ADMINISTRATION.** Means maintaining the Unified Administration System (UAS) database of radio terminals authorized to operate on Customer’s system by adding, deleting, and/or modifying radio terminals from UAS and initiate radio terminal Disable/Enable commands as necessary, and as requested by Customer.
- 37. **SYSTEM RELEASE.** Means a specific combination of Platform, software, and operating system.
- 38. **TAC.** Means the L3Harris Technical Assistance Center.
- 39. **TECH-LINK.** Means the technical information section of L3Harris’ web site. Access is restricted to authorized subscribers via a user ID and password login.
- 40. **TERMINALS.** Means mobile radios, portable radios, control stations, vehicle repeaters, or back up dispatch radios that consist of mobile or portable radios as their prime radio transmitter. Terminals and respective quantities are specifically itemized in the Equipment List.
- 41. **THIRD-PARTY(IES).** Means any entity other than L3Harris that provides products or services to Customer, whether managed by or processed through L3Harris.
- 42. **THIRD-PARTY SOFTWARE PRODUCTS.** Means software owned by a party other than L3Harris excluding Original Equipment Manufacturer software licensed by L3Harris to Customer as part of the software.
- 43. **THIRD-PARTY SUPPORT AGREEMENT(S).** Means Third-Party agreements provided by Third-Party to provide technical support for their Third-Party products whether hardware or software. These Third-Party Support Agreements allow for installation of Operating System Patches within the Designated System and are required in order for Customer to receive SUMS+, SMS, and VIDA Secure Sentry services, as applicable.
- 44. **VENDOR PATCHES.** Means software patches provided by Third-Party software vendors that mitigate, address and/or resolve issues with their provided software.
- 45. **VENDOR WORK-AROUNDS.** Means configuration and/or procedural changes provided by Third-Party software vendors that mitigate, address and/or resolve issues with their provided software.
- 46. **WARRANTY PERIOD** has the meaning ascribed to it in the primary System Purchase Agreement.

[Signature Page Follows]



Intending to be bound hereby, the Parties hereto have caused this Agreement to be executed, as of the latest date below, by the Parties' duly authorized representatives.

L3HARRIS TECHNOLOGIES, INC.

By: 

Name: Jeremy S. Roe

Title: Principal, Contracts

Date: September 26, 2023

ERATH COUNTY, TEXAS

By: 

Name: Brandon J. Huckabee

Title: County Judge

Date: 9-27-2023

ATTACHMENT A
EQUIPMENT LIST

The Services will apply for the following Equipment:

INFRASTRUCTURE

QTY	DESCRIPTION
4	Simulcast Sites (4-channel)
4	Symphony Consoles
4	Backup Radio at Dispatch
1	Interoperability Gateway with 8 talkpaths

**ATTACHMENT B
SERVICE DESCRIPTIONS****I. PREMIUM TECHNICAL SUPPORT (PTS) (Infrastructure Only)**

1. **Service Description.** Provides technical assistance to answer questions and help resolve issues. Provides support renewals for Third-Party software licenses as needed to provide the Services, and support renewals for server and networking equipment used in the Designated System.
2. **Service Request.** Customer's Point of Contact shall follow Section III.7 ("Service Request Procedure"), and specifically call L3Harris' Technical Assistance Center (TAC) at 1-800-528-7711 or email PSPC_TAC@L3Harris.com.
3. **Levels of Technical Assistance Support:**
 - a. **Level 1 First Line Support.** Means telephone helpdesk or answer center receiving Customer's inbound Service Requests via phone, web forms, or email. L3Harris service representatives log, categorize, prioritize, and route incidents reported by Customers and can implement basic, documented break-fix tasks.
 - b. **Level 2 Second Line Support.** Means troubleshooting of Service Requests via L3Harris documented processes and workflows and maintaining a Run-Book which is used to record Service Requests, resolutions, and assists in collaborating with any other support or dependency groups in case the incident has linkage to other support personnel or outside vendors.
 - c. **Level 3 Third Line Support.** Means detailed troubleshooting of Service Requests by L3Harris technical experts who resolve issues that are typically difficult or subtle; participate in management, prioritization, minor enhancements, break fix activities, problem management, stability analysis; subject matter experts in technology platforms. If a fix involves a major enhancement or a development, the problem is transferred to L3Harris engineering. L3Harris engineers may require root or administrator access to the Designated System.
 - d. **Level 4 Product and Vendor Support.** Means direct support by L3Harris or vendor product architects, engineers, software developers, or hardware designers. The Service Request escalation process may involve product bugs, detailed configuration requirements, or other expert level guidance. Level 4 support is subject to the limitations of Third-Party Support Agreements and as indicated under the General Terms and Conditions section of this Agreement.
4. **L3Harris Responsibilities:**
 - a. Provide Customer with 24x7x365 Level 1 First Line Support through Level 4 Product and Vendor Support for resolving issues with the Equipment.
 - b. Respond to non-Emergency Calls within two (2) hours from the time of Service Request
 - c. Respond to Emergency Calls within one (1) hour from the time of Service Request.
 - d. Provide Customer with access to Tech-Link.
 - e. Manage Third-Party Equipment and software subscription services and licenses to ensure Customer can receive, as applicable, Security Updates, Operating System Patches, Level 3 Third Line Support, and Level 4 Product and Vendor Support for Third-Party Equipment and its software as included in the Equipment List. Subject to the limitations of Third-Party Support Agreements and as indicated under the General Terms and Conditions section of this Agreement, this includes the purchase of Third-Party software subscription renewals and software licenses when necessary to provide the Services. Additionally, this includes the purchase of support renewals for server and networking equipment used in the Designated System.



- f. Provides new versions of Third-Party software applications as part of Premium Technical Support (PTS) when installation of Software Updates requires a new version of Third-Party software application.

Third-Party licenses included in PTS, Renewals pricing:

Part #	Description	Falcon Qty
SAMD8G	CONTROLLER, DIGITAL I/O	3
VS-CR1H	ROUTER,NOKIA,7705,SAR-8	4
VS-CR1V	ROUTER,ISR,C1111-4P	8
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	5

- g. Coordination with On-site support services, as necessary. On-site support services are not included in Premium Technical Support but may be purchased by the Customer as Demand Services.

II. SECURITY UPDATE MANAGEMENT SERVICES (SUMS+) (Infrastructure Only)

1. Service Description. Provides periodic Operating System Patches, as available, and as described below to mitigate identified software vulnerabilities.
2. Service Request. No Service Request is needed. L3Harris shall notify Customer when Operating System Patches are available. For additional SUMS+ related Services, Customer's Point of Contact may contact TAC by calling 1-800-528-7711.
3. L3Harris Responsibilities:
 - a. Provide periodic Operating System Patches, as available, and as described below to mitigate identified software vulnerabilities. Operating System Patches will contain at least one (1) set of Software Release Notes. Operating System Patches will include patches for the Third-Party operating systems used in the Infrastructure.
 - i. Operating System Patches Upon Enrollment. As determined by a system configuration baseline and documentation audit performed by L3Harris, L3Harris shall provide to Customer the Operating System Patches required, if any, to bring the L3Harris Operating System Patches within the Designated System(s) up to L3Harris current levels. This excludes updates to new versions of Third-Party Software Products. New versions of Third-Party Software Products are included as part of PTS Service Description. Customer will be required to have current license, services, and/or support agreement(s) with Third-Party vendor(s) which allow for installation of Operating System Patches within the Designated System. L3Harris shall assist Customer in obtaining necessary Third-Party Support Agreements through PTS. Any additional cost to secure these Third-Party Support Agreements is the sole responsibility of the Customer.
 - ii. Subsequent Operating System Patches. During the Term, L3Harris shall provide Operating System Patches to Customer for Third-Party operating system software included in the Designated System.
 - b. Monitoring. L3Harris uses reasonable efforts to monitor pertinent governmental, vendor, independent sources, and open source information databases to identify vulnerabilities and subsequent resolutions applicable to Third-Party operating systems used by the Designated System(s). L3Harris shall identify and document latest known system vulnerabilities and compliance issues discovered and provide a status and recommendations report via Tech-Link.
 - c. Operating System Patches Pretest. Operating System Patches are tested on dedicated security verification test systems to ensure proper system operation prior to general release.



- d. **Delivery.** Operating System Patches shall be provided to the Customer Point of Contact.
 - i. Operating System Patches are electronically distributed to target devices via a client-server application running within the Designated System(s). This application provides the full scheduling capabilities should an application restart or server reboot be necessary to complete the update process.
 - ii. Telephone support is available through TAC, with respect to the installation of Operating System Patches.
 - iii. On-site support for installation is not included in SUMS+ but may be purchased by the Customer. See SUMS+ Installation.
4. **Limitations.** Operating System Patches provided by L3Harris are limited to L3Harris' current and current minus one System Release levels, therefore, Customer may be required to purchase and install, at Customer's expense, additional or upgraded Hardware or software in order to take full advantage of Operating System Patches. **NOTHING IN THIS AGREEMENT OR OTHERWISE REQUIRES L3HARRIS TO PROVIDE OPERATING SYSTEM PATCHES THAT REMAIN COMPATIBLE WITH DESIGNATED SYSTEM HARDWARE OR TO PROVIDE ADDITIONAL HARDWARE UNDER THIS AGREEMENT.**
5. **Customer Delegation.** Customer hereby delegates, grants, and assigns to L3Harris, acting as the Customer's agent, all approval rights relating to the selection of Operating System Patches. All approvals given to Third-Party vendors by L3Harris shall be deemed as being granted by the Customer.

III. SUMS+ INSTALLATION (Infrastructure Only)

1. **Service Description.** Manages the installation of SUMS+ Operating System Patches on a periodic basis.
2. **Service Request.** To initiate this Service, Customer's Point of Contact shall follow Section III.7. ("Service Request Procedure"), and specifically call their Regional Service Manager listed in Attachment D ("Point of Contact and Notice").
3. **L3Harris Responsibilities:**
 - a. Install the Operating System Patches.
 - b. Provide Customer with a Business Hours installation schedule and approximate Equipment out of service periods (if any).
 - c. Provide labor (during Business Hours) to install SUMS+ Operating System Patches.
 - d. Provide Customer with a Summary Report in the format shown below, or another format as determined by L3Harris:

WO No.	Date	Task	Description	Completion Date
123456	7/4/2021	Operating System Patches received.	Loaded new Operating System Patches per release notes.	7/4/2021

4. **Exclusions:**
 - a. This SUMS+ Installation Service does not include upgrade or update efforts requiring network engineering, design engineering, configuration engineering, system engineering, program management, or full software installation or software implementation or major system upgrades requiring component or hardware updates or upgrade. Not included in Operating System Patches are system updates from any previously released Operating System Patches. Upon request for these updates, software installation services, or any services requiring network engineering, design engineering, configuration engineering, system engineering, or program management services, L3Harris will provide a detailed quote for Customer to purchase separately.

IV. SOFTWARE MANAGED SERVICES (SMS) (Infrastructure Only)



1. Service Description. Provides periodic Software Updates to L3Harris Licensed Programs.
2. Service Request. No Service Request is needed. L3Harris shall notify Customer when SMS are available. For additional SMS related Services, Customer's Point of Contact may contact TAC by calling 1-800-528-7711.
3. L3Harris Responsibilities:
 - a. Deliver Software Updates electronically to Customer's Point of Contact and make available for download by Customer unless Customer requests and it is mutually agreed to provide the Software Update in another format. Hardware purchases or upgrades, at Customer's expense, may be necessary for Customer to fully implement the Software Updates.
 - b. Provide at least one (1) set of Software Release Notes.
 - c. Provide replacements to Customer at no additional charge, for any software media that incurs damage during shipment.
 - d. Make available system level release documentation, prior to the general release of a major System Release by L3Harris for L3Harris Licensed Programs, announcing the impending release, and detailing its contents and impact, if any, on any other L3Harris Hardware or software components.
4. Compatibility with Hardware. Customer acknowledges that Software Updates may not operate on older hardware. NOTHING IN THIS AGREEMENT OR OTHERWISE REQUIRES L3HARRIS EITHER TO DESIGN UPDATES THAT REMAIN COMPATIBLE WITH DESIGNATED SYSTEM HARDWARE OR TO PROVIDE ADDITIONAL HARDWARE UNDER THIS AGREEMENT.
5. System Configuration Baseline and Documentation Update. As part of the initial enrollment process, L3Harris may deem it necessary to conduct a system audit of the Designated System(s) to be covered under this Agreement. If said audit is required, audit will be conducted and used to verify Customer's first-year SMS fee and to determine the System Release levels for L3 Harris Licensed Programs contained within the Designated System at the time of enrollment, together with any Hardware updates necessary to accommodate Software Updates. Customer may incur additional costs for modifications or updates required to initiate the SMS.
6. Installation Phone Support. Customer may use TAC telephone support with respect to the installation of Software Updates.
7. Tech-Link. Customer, through the Customer Point of Contact, will have access to Tech-Link via a user ID and password authorization to access release documentation and downloadable distribution media.
8. Services Not Included. Unless Obsolescence Protection and/or Planned Network Upgrade, as applicable, are purchased by Customer (See Section II. Services, of this Agreement), Hardware upgrades, are not included within the scope of this Agreement.
 - a. If a Software Update requires a corresponding Hardware change, Customer will be required to separately purchase the compatible Hardware to fully install and utilize the Software Update. L3Harris will endeavor to notify Customer in advance of any Hardware changes needed to implement a Software Update, via the system-level release documentation or other reasonable method of communication from L3Harris.
 - b. The installation of Software Updates may require a new version of one or more Third-Party software applications which new versions of Third-Party software applications are not included as part of SMS.

V. SMS INSTALLATION (Infrastructure Only)

1. Service Description. Manages the installation of SMS Software Updates on a biennial basis.
2. Service Request. To initiate this Service, Customer's Point of Contact shall follow Section III.7. ("Service Request Procedure"), and specifically call their Regional Service Manager, identified in Attachment D ("Point of Contact and Notice").

3. L3Harris Responsibilities:
- Install the L3Harris Software Updates once every twenty-four (24) months during the Term of this Agreement.
 - Provide Customer with a Business Hours installation schedule and approximate Equipment out of service periods (if any).
 - Provide labor (during Business Hours) for SMS installation per L3Harris Licensed Software Update installation process.
 - Provide Customer with a Summary Report as part of the installation of SMS Software Updates as exemplified below, or another format as determined by L3Harris:

WO No.	Date	Task	Description of Software Package	Completion Date
123456	7/4/2021	Software Update received.	Loaded new software per release notes.	7/4/2021

4. Exclusions:
- This SMS Installation Service does not include upgrade or update efforts requiring network engineering, design engineering, configuration engineering, system engineering, program management, or full software installation or software implementation or major system upgrades requiring component or hardware updates or upgrade. Not included in Software Updates are system updates from any previously released software update. Upon request for these updates, software installation services, or any services requiring network engineering, design engineering, configuration engineering, system engineering, or program management services, L3Harris will provide a detailed quote for Customer to purchase separately.

VI. STANDARD REPAIR SERVICES (Infrastructure Only)

- Service Description. Provides factory/depot repair services for the Equipment.
 - Service Request.
 - Customer's Point of Contact shall initiate a Return Material Authorization ("RMA") request for repair services through the online portal at L3Harris.com or by calling L3Harris at 1-800-368-3277.
 - A Return Material Authorization ("RMA") will be provided to Customer within two (2) business days from the date of receipt of Customer's RMA request.
 - Customer shall follow the instructions listed on the RMA. Customer shall ship, at Customer expense, the Equipment to the address specified in the RMA. Customer shall include a copy of the RMA form inside the box, and clearly display the RMA number on the outside of the box containing the Equipment.
 - Customer shall pack Equipment adequately to prevent damages during transit and bear the risk of damage during transit. Equipment damaged during transit will be returned to Customer un-repaired and may incur a Diagnostic Fee. If Customer wants multiple items listed on a single RMA to be returned together, Customer must specifically request a complete shipment from L3Harris.
1. Schedule for Standard Repairs.
- Standard repairs will be completed in approximately ten (10)* business days for L3Harris Equipment, and approximately thirty (30) business days for Third-Party Equipment from the date of receipt of the Equipment.
 - If Customer wants the Equipment repaired sooner than the estimated dates within this Section, the Customer must contact L3Harris for additional options which may result in additional charges.
2. L3Harris Responsibilities:

- a. Notify Customer if any Equipment, received from Customer, appears damaged during shipment or is missing.
- b. Verify the Equipment received against Customer submitted RMA.
- c. Perform a visual inspection and operational check on Equipment to determine nature of the problem and repairs required.
- d. Make the required repairs and test the functionality of the repaired Equipment or manage the repair through the Third-Party manufacturer, if applicable.
- e. Package, ship, and return the repaired Equipment to Customer, at L3Harris' expense, as the Equipment is repaired.
- f. Provide a Summary Report similar to the example below, or another format as determined by L3Harris:

WO No.	Date	Problem	Resolution	Resolution Date
123456	7/4/2021	No card communication.	Corrupt software. Reloaded. Passed communication tests.	7/4/2021

- g. Ship multiple Equipment listed on a single RMA together only if Customer specifically requests complete shipment.
- h. Pack outbound shipments properly and bear the responsibility for damage that occurs prior to delivery to Customer.
3. Customer Verification. At Customer's expense, Customer shall reinstall and validate operation of repaired Equipment.
4. Non-Standard Repair.
 - a. L3Harris may determine, in its sole discretion that the repair of Equipment is not within the scope of Services of this Agreement. This may be due to the unavailability of parts, equipment or part obsolescence; or because the services needed are Excluded Services, as described in Section III. 5 ("Excluded Services");
 - b. If L3Harris determines, for the reasons set forth above, that Equipment is not within the scope of this Agreement, L3Harris shall determine and provide to Customer an estimate of additional time required and either i) all additional charges required to perform repairs or ii) the cost to replace the Equipment.
 - c. If Customer approves the additional charges, the repaired or replacement Equipment shall be shipped to Customer. If Customer disapproves the additional charges, L3Harris will charge a Diagnostic Fee and return the unrepaired Equipment to Customer.

VII. ANNUAL PREVENTIVE MAINTENANCE (Terminals and Infrastructure, as applicable)

1. Service Description. Includes regularly scheduled tests, checks, and routine alignments of the Infrastructure Equipment. Inspect, clean, and tune-up L3Harris portable and mobile Terminals to FCC specifications.
2. Service Request. To initiate this Service, Customer's Point of Contact shall follow Section III.7
3. ("Service Request Procedure"), and specifically call their Regional Service Manager listed in Attachment D ("Point of Contact and Notice").
4. L3Harris Responsibilities:
 - a. Provide Customer with a Preventive Maintenance Business Hours schedule and approximate Equipment outage times (if any).
 - b. Perform Preventive Maintenance on the Equipment based on L3Harris' best practices and in accordance with the Preventive Maintenance Table(s).
 - c. Provide Customer with a Summary Report in the format shown in the Table(s) below, or another format as determined by L3Harris.

INFRASTRUCTURE PREVENTIVE MAINTENANCE TABLE



Technician _____

Date _____

	PREVENTIVE MAINTENANCE (IF APPLICABLE & AS NECESSARY)	PERIOD	PASS FAIL	
GENERAL	Check RF, data and audio cable condition	Annual		
	Check general alarm status, troubleshoot and investigate any found alarm conditions	Annual		
	Check condition of punch blocks	Annual		
	Perform a general talkgroup test	Annual		
	Perform a multisite test	Annual		
	Perform an individual call test	Annual		
MASTR V BASE STATION (Manual MM-017079-001)	Check simulcast timing, adjust	Annual		
	Check transmitter RF power output doesn't exceed station authorization	Annual		
	Check transmitter frequency stability is within correct ppm of specification	Annual		
	Check modulation deviation is within correct kHz of specification	Annual		
	Check Receiver BER	Annual		
	Verify alarm functionality	Annual		
	Check call processing, each channel	Annual		
	Clean physical filters	Annual		
	Inspect RF lines	Annual		
	Inspect audio and data cables for snug connection	Annual		
	Verify control channel operation and rolling	Annual		
	Perform power supply voltage checks	Annual		
MASTR III BASE STATION (Manual MM102554V1)	Check simulcast timing, adjust	Annual		
	Check transmitter RF power output doesn't exceed station authorization	Annual		
	Check transmitter frequency stability is within correct ppm of specification	Annual		
	Check modulation deviation is within correct kHz of specification	Annual		
	Check receiver sensitivity	Annual		



	PREVENTIVE MAINTENANCE (IF APPLICABLE & AS NECESSARY)	PERIOD	PASS FAIL	
	Verify alarm functionality	Annual		
	Check basic call processing, each channel	Annual		
	Clean physical filters	Annual		
	Inspect RF lines	Annual		
	Inspect audio and data cables for snug connection	Annual		
	Verify control channel operation and rolling	Annual		
	Perform power supply voltage checks	Annual		
GPS RECEIVERS	Verify GPS sync	Annual		
	Verify alarm functionality	Annual		
	Verify battery functionality	Annual		
	Check power supply voltage	Annual		
NETWORK	Check and verify RNM alarms	Annual		
	Inspect Ethernet cables	Annual		
	Check MPLS router voltage	Annual		
	Check MPLS router cables	Annual		
	Check MPLS router alarms	Annual		
	Check dual CPU operation	Annual		
	Check servers for dust	Annual		
CONSOLES	Check console link to VNIC	Annual		
	Check RF, data and audio cable condition	Annual		
	Verify operation of touch screen monitor	Annual		
	Check and clean keyboard	Annual		
	Verify CD drive functional	Annual		
	Verify console basic call functionality	Annual		
	Check select and unselect speaker audio output for clarity	Annual		
CONSOLE ACCESSORIES	Check microphone, headset jacks, foot switches for condition and functionality	Annual		
PAGING UNIT	Check functionality	Annual		
CALL DIRECTOR	Check functionality	Annual		
ISSI	Check functionality	Annual		
	Check for alarms	Annual		

	PREVENTIVE MAINTENANCE (IF APPLICABLE & AS NECESSARY)	PERIOD	PASS FAIL	
NSS	Verify high availability (HA) functionality	Annual		
	Check for alarms	Annual		
	Check servers for dust	Annual		
	Check servers are operating on most current software revision	Annual		
	Check BeOn functionality	Annual		
FIBER RING	Verify fiber ring switching functionality	Annual		
	Check condition of fiber cables	Annual		
	Check fiber connection unit for alarms	Annual		
VIP CONSOLES	Check for system connectivity	Annual		
	Verify cd drive functional	Annual		
	Verify console basic call functionality	Annual		
	Check select and unselect speaker audio output for clarity	Annual		
	Check microphone, headset jacks, foot switches for condition and functionality	Annual		
VOTER	Check audio input and output levels	Annual		
	Check voting operation	Annual		
	Check power supply voltage	Annual		
	ENHANCED ANNUAL PREVENTIVE MAINTENANCE* (IF APPLICABLE & AS NECESSARY.	PERIOD	PASS FAIL	NOTES/ RECOMMENDED ACTIONS
ADDITIONAL PM	Validate system redundancy by switching cores while in operation	Annual		
	Perform simulcast Distributed Control Point failover testing	Annual		
	Tune and align analog and paging system base stations	Annual		
	Archive Activity Warehouse data to Customer provided off-line storage	Annual		
	Archive logging recorder call records to Customer provided off-line storage	Annual		
	Perform Symphony console hardware inspection and disk clean-up	Annual		

TERMINAL PREVENTIVE MAINTENANCE TABLE

Technician _____

Date _____

	PREVENTIVE MAINTENANCE (IF APPLICABLE & AS NECESSARY)	PERIOD	PASS FAIL	



PORTABLE RADIOS XG-75Pe Manual 14221-1100- 5100 or the model equivalent	Check knobs (volume-on/off and group/channel select) for cracks, fractures, wear, contaminants	Annual		
	Check switches (volume-on/off and group/channel select) for loose switches and erratic performance	Annual		
	Check buttons (PTT, emergency, option, clear / monitor) for wear, actuation force, tactile feel, and erratic performance	Annual		
	Check keypad for wear, tears, and erratic performance	Annual		
	Check display and display lens for cracks, fractures, scratches, contrast, missing segments, and obstructions	Annual		
	Check battery pogo pins for wear, spring action, stuck pins, and contaminants	Annual		
	Check battery gasket for wear, cracks, scratches, obstructions, and leakage discoloration	Annual		
	Check microphone hole and gasket for contaminants, obstruction, gasket tears and scratches	Annual		
	Check LED Lens for cracks, fractures, scratches, and obstructions.	Annual		
	Check UDC for wear, plating, cracks, scratches, fractures, contaminants, corrosion, and erratic accessory operation.	Annual		
	Check case, chassis, and battery integrity for cracks, scratches, fractures, wear, contaminants, and corrosion.	Annual		
	Check screws for tightness, corrosion, and clean o-rings /seals.	Annual		
	Check battery connection for loose battery fit and erratic power cycling.	Annual		
	Check accessory connection for erratic accessory operation.	Annual		
	Check antenna for loose fit, cracks, fractures, cuts, bends, twists, and wear.	Annual		
	Test Reference Oscillator (TCXO) : Manual suggests immediately, if unit was in storage for at least two (2) months; and Six (6) months after first deployment; then, Annually	Service includes once/12 months		
	Test Transmit Power	Annual		
	Test Receive Sensitivity	Annual		



	Test Receive Squelch	Annual		
MOBILE RADIOS and CONTROL STATIONS XG-75M Manual 14221-1100- 5780 or the model equivalent	Inspect visible mobile radio and control head hardware to verify it is in place and securely tight. Any missing or loose hardware will be replaced and/or tightened as necessary.	Annual		
	Inspect visible mobile radio cabling to verify it is not damaged, it is securely tied-and-stowed, and all related cable connectors are tight.	Annual		
	Check the mobile radio's DC power source (vehicle battery or DC power supply).	Annual		
	Test Reference Oscillator (TCXO): Manual suggests immediately, if unit was in storage for at least two (2) months; and Six (6) months after first deployment; then, Annually	Service includes once/12 months		
	Test Transmit Power	Annual		
	Test Transmit Deviation	Annual		
	Test Audio Output and Distortion	Annual		
	Test Receive Sensitivity	Annual		
	Test Receive Squelch	Annual		

VIII. ON-SITE CORRECTIVE MAINTENANCE (Infrastructure Only)

1. Service Description: Provides labor, during Business Hours, to troubleshoot, repair, and if necessary, remove and replace defective Equipment.
2. Service Request. To initiate this Service, Customer's Point of Contact shall follow Section II "Service Request Procedure," and specifically call their Regional Service Manager, identified in attachment D ("Point of Contact and Notice").
3. L3Harris Responsibilities:
 - a. On-Site Troubleshooting:
 - i. Dispatch personnel to investigate problem at Customer's location after remote diagnostics are made.
 - ii. Perform pre-diagnostics to confirm malfunction.
 - b. Repair or replace of failed Equipment per L3Harris determination:
 - i. Repair, if repairable, and perform testing to verify proper operation.
 - ii. Replace, if replaceable, with Customer purchased Spare Part and perform testing to verify proper operation.
 - c. Ship failed Equipment to L3Harris or Third-Party Standard Repair Services ("Depot") for repair:
 - i. Obtain a Return Material Authorization ("RMA")
 - ii. Ship (at Harris' expense) Equipment to the Depot.

- iii. Manage and track repair status through the Depot process.
- iv. Receive and bench diagnose (where possible) repaired Equipment to meet original specifications.
- d. Return repaired Equipment:
 - i. Return repaired Equipment to original Customer location, install, and perform testing to verify proper operation.
 - ii. Return the repaired Equipment to the Spare Parts inventory, if a Spare Part was used.
- e. Purchase the replacement of the failed Equipment when not repairable.

IX. PLANNED NETWORK UPGRADES (Infrastructure Only)

1. Service Description: Provide, at set intervals, new Infrastructure Hardware required to update the Platform and bring the Equipment up to date and compatible with the current System Release.
2. Service Request. To initiate this Service, Customer's Point of Contact shall follow Section III.7. ("Service Request Procedure"), and specifically call their Regional Service Manager listed in Attachment D ("Point of Contact and Notice").
3. L3Harris Responsibilities:
 - a. Perform a system audit to determine if any system modifications have been made that impact L3Harris' ability to perform the Planned Network Upgrade. Customer accepts that the L3Harris labor quoted may be increased if system modifications are found during the system audit. L3Harris will provide the Customer a written report of the audit findings and any changes to the Planned Network Upgrades labor quotes within fifteen (15) working days of the completion of the system audit.
 - b. Provide Hardware Updates for replacement for the following Equipment, if listed on the Equipment List of this Agreement, as necessary to maintain compatibility with the latest System Release:

Part #	Description	Quantity
14032-0009-106	MODULE,NOKIA,8P GE SFP CARD	1
SAMD8E	SITE MANAGER, VIDA EDGE	3
SAMD8G	CONTROLLER, DIGITAL I/O	3
UD-ZM1E	CONSOLE,BUNDLE,PREMIER,WIN10	4
VS-CR1H	ROUTER,NOKIA,7705,SAR-8	4
VS-CR1V	ROUTER,ISR,C1111-4P	8
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	5

- c. Provide the following during Business Hours:
 - i. Create a plan for the Planned Network Upgrade that details schedule, technical procedure, service impacts, resources required, and Customer support and coordination responsibilities.
 - ii. Identify, to the extent possible, and make recommendations for any Equipment that is incompatible with the software versions being installed, and any known impacts to Third-Party equipment or applications installed by Customer.
 - iii. Identify additional equipment or services outside the scope of the Planned Network Upgrade and provide quote to the Customer, if applicable.



- iv. Provide project management support to manage the Service of the Planned Network Upgrades.
 - v. Provide engineering labor to design, review, and implement the Planned Network Upgrades.
 - vi. Provide the required staging labor from the L3Harris factory and shipping to the Customer to perform the Planned Network Upgrades.
 - vii. Provide the required field installation technician labor to perform the Planned Network Upgrades.
- 4. Customer Responsibilities:
 - a. Comply with the L3Harris schedule to perform the Planned Network Upgrades.
 - b. Provide L3Harris with a Point of Contact that will coordinate with all impacted agencies for the Planned Network Upgrades, will Notify L3Harris when there is any activity that impacts the Equipment or Services.
 - c. Provide a system audit within six (6) months of the performance of the Planned Network Upgrades.
 - d. Receive and accept all Equipment upon shipment by L3Harris, store properly, and make available for use during the Planned Network Upgrades. Return all replaced Equipment to the L3Harris Lynchburg, VA facility, at Customer's expense, within one hundred eighty (180) days after the Planned Network Upgrades Equipment is shipped to the Customer.
 - e. Perform all backups to be used by L3Harris during the Planned Network Upgrades.
 - f. Procure additional resources, at Customer's expense, should the Planned Network Upgrades require resources other than those listed in or to provide functionality to devices beyond Planned Network Upgrades.
- 5. Additional Conditions and Exclusions:
 - a. Planned Network Upgrades only includes Services needed for L3Harris Equipment compatibility to the L3Harris Software Managed Services (SMS) Infrastructure within the 10X platform for the Equipment on the Equipment List that are one release from the current release, and does not include Services for defects not corrected by the SMS update, or virus prevention or attacks, or configuration changes not required by the change in Equipment, or improper or custom system configurations, use, hardware, software, or features. Additional hardware, software, permissions, coverage testing, as-builts or other change documentation, licenses, subscriptions, system features or functionality, or services required by or beyond this Planned Network Upgrades will be procured by the Customer, at Customer's expense.
 - b. Planned Network Upgrades does not include system expansions, frequency or configuration changes, changes from industry standards or certification bodies (such as P25, LTE, ISO, UL, 3GPP, etc.), or the addition of features or functionality that are not part of the base equipment upgrade as determined and delivered by L3Harris within the 10X Platform. Upon discontinuance of Planned Network Upgrades, no additional Hardware will be provided and Customer will not be billed for any future years of Planned Network Upgrades.
 - c. Only the Equipment listed on the Equipment List is covered by the Planned Network Upgrades Services, to avoid any doubt, the following items are expressly excluded from the Planned Network Upgrades: Terminals, Non L3Harris Infrastructure, civil equipment such as towers and shelters, RF equipment such as base stations, combiners, antennas, power equipment such as generators and UPS, console ancillary equipment such as furniture, speakers, headsets, monitors, footswitches and keyboards, NetClock telephone equipment, connectivity equipment such as microwave or fiber routers and switches, logging recorder server, logging SAN, and associated logging devices, and any batteries.

EXHIBIT A

STATEMENT OF WORK

TABLE OF CONTENTS

Attachments to Exhibit A

1. System Description
2. Cielo Networks Path Analysis
3. Coverage Maps
4. Implementation Plan
5. Project Schedule
6. Warranty and Maintenance Plan
7. Functional Acceptance Test Procedures
8. Coverage Acceptance Test Procedures
9. Training Program
10. Price Schedule

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SYSTEM DESCRIPTION

L3Harris is pleased to offer the Erath County a four-site simulcast radio system and dispatch center. The LMR (land mobile radio) system shall improve the outdoor portable coverage for Erath County. The dispatch center shall include four Symphony Consoles installed at the consolidated Erath County / Stephenville Dispatch Center. The radio system and dispatch center shall connect to the existing VIDA Network Switching Center (NSC) at Granbury Regional Radio Network (GRRN), allowing for communications across GRRN.

In addition, multiband VHF and 7/800 MHz mobile and portable subscriber radios are included.

It is L3Harris' goal to partner with the Erath County to deliver unified emergency communication services to users via a highly reliable, redundant network with excellent coverage and superior performance. The network solution utilizes our latest technologies, which include: P25 trunked simulcast operation, IP-based network switching, centralized network management, and integrated interoperability solutions.

VIDA provides the ability to combine these technologies into one highly integrated, highly available system, offering Erath County a single unified architecture for linking the various technologies present in the system today with the technologies of tomorrow.

L3Harris makes communications projects simpler with our customer's goals at the forefront. Our VIDA solution is scalable and can easily accommodate more sites, users, sub-systems, and additional interoperability interfaces with other entities. IP-centric solutions are meant to ease installation and transition burdens and provide a flexible path to future technologies that avoid costly "forklift type" upgrades.

ERATH COUNTY SOLUTION

- > P25 trunked 700 MHz simulcast LMR system with guaranteed coverage
- > IP-centric solution that is future-ready
- > Dispatch consoles
- > Multi-band portable and mobile radios operating on VHF and 7/800 MHz

The L3Harris Advantage

The L3Harris design provides the Erath County a focused solution that outlines the following benefits:

- > **Reliability, Outstanding Value** – The new, P25 Phase 2 trunked, 700 MHz simulcast system is designed to minimize single points of failure. Our non-proprietary, commercial-off-the-shelf (COTS) equipment provides ease of upgrade and mitigates system obsolescence. Radio site and dispatch center redundancy is provided through the utilization of dual routers, and redundant switches, which will maintain real-time connectivity and status with GRRN's high availability (HA) network switching cores. Additionally, radio system redundancy is provided through the utilization of two distributed simulcast control points, per simulcast cell.
- > **Guaranteed Coverage** – L3Harris is pleased to provide the Erath County's users with a coverage solution that provides increased portable on-street coverage.
- > **Next Generation Consoles** – L3Harris understands the critical role that dispatchers play during life safety events, and it requires a platform that is intuitive and minimizes the time it takes for each task. The Symphony dispatch consoles shall be capable of communicating across the Granbury Regional Radio Network (GRRN).
- > **XL series of Land Mobile Radios** – The XL series of portable and mobile radios delivers industry-leading, loud, clear audio powered by advanced noise cancellation technologies. Both portable (XL-200P) and mobile (XL-200M) radios will be multiband (VHF and 7/800 MHz) and P25 Phase 2 trunk enabled. Additionally, the XL-200P portable radios can be programmed to receive and decode analog two-tone VHF paging.

Figure 1. The L3Harris VIDA Architecture



System Offering

L3Harris is pleased to provide Erath County with a P25 Phase 2 Trunked Simulcast solution. The simulcast system is comprised of two (2) simulcast cells, each cell with two (2) RF sites, totaling four (4) RF sites. (The existing Prather Tower site shall be converted to a simulcast site and become the second site within the Erath South simulcast cell.) Each site will have four (4) Phase 2 channels. For purposes of redundancy, the system shall have two (2) Distributed Control Points (DCP), for simulcast control.

The solution will connect to existing VIDA Network Switching Center (NSC) at Granbury, allowing for communications across the Granbury Regional Radio Network (GRRN).

The solution shall include a four (4) console dispatch center that shall be implemented at the consolidated Erath County / Stephenville Dispatch Center.

The solution shall include a microwave backhaul system.

The system block diagram is shown in Figure 2.

System Components

The following equipment and services are included.

- > Three (3) P25 Trunked RF sites, with four (4) Phase 2 channels, utilizing 700 MHz MASTR V repeaters. Two new sites will form the Erath North simulcast cell, and one new site shall combine with one existing site (Prather Tower) to form the Erath South simulcast cell. (While three (3) sites are included, the use of an existing site makes this a four (4) site system.) MASTR V base stations were selected as they are also used by GRRN, allowing for availability of spares and ease of maintenance.
 - IP Network equipment to connect to the backhaul
 - Transmit antenna feed-line systems, include transmit combiner
 - Receiver antenna feed-line systems, include TTA (tower top amplifier)
- > Four (4) Symphony consoles, including IP networking equipment to connect to the backhaul, shall be implemented at the Erath County Sheriff's Office.
 - IP Network equipment to connect to the backhaul
 - Four (4) XL-200M control stations operating on VHF and 7/800 MHz
 - Marker Tone feature, to match the feature set of Granbury
- > A fleet of mobiles and portables subscriber radios.
 - 263 XL-200P portables operating on VHF and 7/800 MHz
 - Two sets of programming cables, dongle, and latest release of RPM2 software
 - 185 XL-200M mobile operating on VHF and 7/800 MHz
 - Two sets of programming cables, dongle, and latest release of RPM2 software
 - 2 XL-200M control stations for Fire, operating on VHF and 7/800 MHz
- > New MPLS based microwave backhaul system at the three (3) new radio sites, one (1) microwave relay site, one (1) Hood County site, and one (1) Somervell County site.

- Northwest: radio site
 - New radio site to be included in the Erath County North simulcast cell.
- Morgan Mill: radio site
 - Greenfield radio site to be included in the Erath County North simulcast cell.
- Dublin 2: radio site
 - New radio site to be included in the Erath County South simulcast cell.
- CTI: microwave relay site
 - Existing Erath County site to serve as a microwave relay between Northwest, Dublin 2, and Chalk Mountain.
- Diamond: Hood County site
 - Existing Hood County site to provide connectivity to Morgan Mill.
- Chalk Mountain: Somervell County site
 - Existing Somervell County site to provide connectivity to Dublin 2 and CTI.
- Prather Tower: radio site, with no new microwave equipment
 - Existing Erath County site that already connects to the GRRN core.
- > UPSs at the following radio sites:
 - Northwest
 - Morgan Mill
 - Dublin 2
- > L3Harris professional services are provided and include system engineering, project management, factory staging, installation, and five-year warranty on both infrastructure subscriber radios.
- > L3Harris shall conduct radio site surveys to assess each existing site's grounding system.
 - The findings and recommended grounding improvements shall be included as part of system installation.

The following will not be included.

- > L3Harris will not be responsible for Morgan Mill's site acquisition, shelter build, or tower build.

The following can be included as an option:

- > L3Harris can provide a shelter at the Dublin 2 site.
 - Land acquisition and permitting shall be an Erath County responsibility.
- > L3Harris can provide a shelter at the Morgan Hill site.
 - Land acquisition and permitting shall be an Erath County responsibility.
- > L3Harris can provide a shelter at the Northwest site.
 - Land acquisition and permitting shall be an Erath County responsibility.

Existing Primary NSC
VIDA Unite Core - SR10A.4

Existing Secondary NSC
VIDA Unite Core - SR10A.4

NSC 1 / NSC A
Granbury PD

NSC 2 / NSC B
East Tower

NSC Features
Existing GRRN NSC feature only
No additional core features or licenses

Existing Radio Sites
P25 Phase 2 - MultiSite
- Multiple sites
- Different channel count per site

Existing Radio Centers
Symphony Consoles
- Multiple centers
- Different console count per center

Existing InterOp Gateways
Interoperability Gateway

Dispatch Center

Consolidated Erath County / Stephenville Dispatch Center
L3Harris Symphony Consoles
QTY 4

Optional Logging Recorder

Consolidated Erath County / Stephenville Dispatch Center
Exacom
QTY 1

Simulcast Cell - Erath North
700 MHz P25 Phase 2
4 Channels - MASTR V

Simulcast Cell - Erath South
700 MHz P25 Phase 2
4 Channels - MASTR V

Morgan Mill
4-Channel
MASTR V

Northwest
4-Channel
MASTR V

Dubin 2
4-Channel
MASTR V

Prairier Tower
4-Channel
MASTR V

Note:
- Prairier Tower is an existing multisite within the Granbury radio network
- Prairier Tower shall be converted to a simulcasted site

User Radio

Portable Radios
XL-200P
VHF + 7/800 MHz
QTY 263

Mobile Radios
XL-200M
VHF + 7/800 MHz
QTY 185

Control Station
XL-200M
Dispatch Center
VHF + 7/800 MHz
QTY 4

Control Station
XL-200M
Fire Service
VHF + 7/800 MHz
QTY 2

Note:
- Unite Core in Geographic HA configuration already exists within GRRN (Granbury Regional Radio Network)
Erath County Add-On project shall use MASTR V stations, not Two47, as existing sites use MASTR V

System Design Overview

The system includes three (3) new P25 radio sites, one (1) existing site upgrade to simulcast, and one (1) dispatch center located at the consolidated Erath County / Stephenville Dispatch Center. Figure 3 summarizes the functional components and equipment layout as shown in the Erath County system block diagram.

Figure 3. Functional Components and Layout

LOCATION	DESCRIPTION & VIDA EQUIPMENT	
CONSOLIDATED ERATH COUNTY / STEPHENVILLE DISPATCH CENTER Dispatch Center	- Four Symphony Consoles - Four XL-200M control stations - Four 700 MHz control stations antenna feed-line systems	- MPLS Microwave Backhaul - Redundant Router and Switch
NORTHWEST RF Site Erath North Simulcast Cell	- Four 700 MHz MASTR V Stations - One 700 MHz Transmit Antenna - One 4-Channel Transmit Combiner - One 700 MHz Receive Antenna - One Tower Top Amplifier - One Receive Multi-coupler	- MPLS Microwave Backhaul - Redundant Router and Switch - UPS
MORGAN MILL RF Site Erath North Simulcast Cell	- Four 700 MHz MASTR V Stations - One 700 MHz Transmit Antenna - One 4-Channel Transmit Combiner - One 700 MHz Receive Antenna - One Tower Top Amplifier - One Receive Multi-coupler	- MPLS Microwave Backhaul - Redundant Router and Switch - UPS
PRATHER TOWER Existing RF Site Erath South Simulcast Cell	- Existing LMR Site - Two new GPSs for Simulcast Synchronization	
DUBLIN 2 RF Site Erath South Simulcast Cell	- Four 700 MHz MASTR V Stations - One 700 MHz Transmit Antenna - One 4-Channel Transmit Combiner - One 700 MHz Receive Antenna - One Tower Top Amplifier - One Receive Multi-coupler	- MPLS Microwave Backhaul - Redundant Router and Switch - UPS
CTI Microwave Relay Site		MPLS Microwave Backhaul
DIAMOND (HOOD COUNTY) Microwave Connection to GRRN		MPLS Microwave Backhaul
CHALK MOUNTAIN (SUMMERVELL COUNTY) Microwave Connection		MPLS Microwave Backhaul

LOCATION	DESCRIPTION & VIDA EQUIPMENT
to GRRN	

SYSTEM TRANSITION

Erath County can continue to use the existing VHF system during the L3Harris radio system implementation.

The L3Harris XL-200 series of portable and mobile multiband radios can be put into service during the system implementation, as the XL-200 series can be programmed to both the existing VHF system and the new L3Harris 700 MHz radio system. When the L3Harris radio system is on the air, Erath County users can simply switch channels to use the new radio system.

Dublin 2, part of the Erath South simulcast cell, can be on-air after Prather Tower is converted to a simulcast site.

- > Prather Tower must be converted to simulcast first to minimize TDI (time delay interference).
- > Upon site turn on, 700 MHz subscribers on Prather Tower will automatically roam to Dublin 2, when within the site's coverage area.

The Erath North simulcast cell can be on-air without interfering with the south simulcast cell or the existing VHF system.

- > Upon the north simulcast cell turn on, 700 MHz subscribers will automatically roam between the two simulcast cells, when within each cell's coverage area.

The implementation plan shall be contingent on Erath County fulfilling the following requirements:

- > L3Harris requires Erath County to provide shelter space and tower space at Northwest, prior to system implementation.
 - Shelter space shall be provided to install the MASTR V repeater rack, transmit combiner rack, microwave rack, and UPS.
 - Any necessary equipment consolidation through rack relocation, or rack removal shall be an Erath County responsibility.
 - Tower space shall be provided to install the LMR antennas and microwave antennas.
- > L3Harris requires the Morgan Mill site (shelter and tower) be built prior to system implementation.
 - The shelter shall have adequate space to install the MASTR V repeater rack, transmit combiner rack, microwave rack, and UPS.
 - The radio tower be built to a minimum of 350 feet tall.
 - Tower space shall be provided to install the LMR antennas and microwave antennas.
- > L3Harris requires Erath County to maintain the fiber connection at Prather Tower to the GRRN VIDA Network Switching Center (NSC).
- > L3Harris requires Erath County to secure shelter space and at Dublin 2, prior to system implementation.

- Shelter space shall be secured to install the MASTR V repeater rack, transmit combiner rack, microwave rack, and UPS.
 - As an option, L3Harris can provide a shelter.
 - Tower space shall be secured to install the LMR antennas and microwave antennas.
- > L3Harris requires Erath County to secure shelter space and at Diamond, prior to system implementation.
 - Shelter space shall be secured to install the microwave equipment.
 - Tower space shall be secured to install the microwave antennas.
- > L3Harris requires Erath County to secure shelter space and at CTI, prior to system implementation.
 - Shelter space shall be secured to install the microwave equipment.
 - Tower space shall be secured to install the microwave antennas.
- > L3Harris requires Erath County to secure shelter space and at Chalk Mountain, prior to system implementation.
 - Shelter space shall be secured to install the microwave equipment.
 - Tower space shall be secured to install the microwave antennas.
- > L3Harris requires the Cielo Networks microwave system meets L3Harris specific performance specifications. The microwave system's performance shall be an Erath County responsibility
- > L3Harris assumes that the consolidated Erath County / Stephenville Dispatch Center will be acquired, reconfigured and outfitted prior to the installation of the Erath County symphony consoles.
- > L3Harris recommends installing the Symphony consoles next to the existing consoles at the dispatch center. After system cutover, Erath County shall be responsible for decommissioning the legacy console equipment.

Coverage Solution

COVERAGE MODEL

L3Harris' internal toolset for propagation modeling is known as RAPTR (Radio Analysis and Propagation Tool Repository). RAPTR propagation modeling is compatible with Telecommunications Industry Association (TIA) Telecommunications Systems Bulletin TSB-88 "Wireless Communications Systems - Performance in Noise and Interference Limited Situations – Recommended Methods for Technology-Independent Modeling, Simulation, and Verification." RAPTR uses the Okumura-Hata-Davidson (OHD) model as described in TSB-88. Factors relating to environment and terrain combine to derive the total path loss value. RAPTR employs the Epstein-Peterson diffraction model in conjunction with the OHD model in a proprietary method to greatly enhance the path loss calculation. The diffraction calculations coupled with the environment database further increase the accuracy of the path loss calculation.

RAPTR uses a tile method for analyzing the propagation, a much more accurate method than the older radial method. Radial methods begin to lose resolution as the distance from the site increases; the distance increases between evaluation locations from radial to radial. The tile method uniformly predicts the coverage for a system by dividing the project area (i.e., County jurisdictional boundary area) into small areas called tiles. The size of the tiles used by RAPTR is three arc-seconds, approximately 300 feet per side. RAPTR models the propagation from a site to each tile in the project area. With the tile method, the interaction of signals from different sites can be more accurately determined. This increases the accuracy of evaluating coverage for simulcast systems, voting systems, multisite networks, interference, and handoff (roaming).

The RAPTR path loss calculation methods are the result of evaluating over 189,000 different propagation paths as part of an extensive data collection effort performed over a period of years. These paths encompassed a variety of terrain and environment features, ranging from over water paths, to flat terrain, to mountainous areas. It also included varying environmental conditions, ranging from highly urbanized areas to rural, open and forested areas. As a result, the propagation model has been refined to perform in all the conditions present in a land-mobile radio system. The model is accurate from flat terrain to highly rugged mountainous terrain, and from urban to rural areas.

TERRAIN DATABASE

The accuracy of any coverage prediction is to a large degree dependent upon the terrain data available for the project. RAPTR makes use of three arc-second database derived from the United States Geological Survey (USGS) Digital Elevation Model (DEM) data that provides high resolution and accuracy, both spatially and in elevation. More recent USGS 30-meter data can supplement the database providing higher degrees of resolution and accuracy. The 30-meter data incorporates into the main RAPTR terrain database using methods described in TSB-88. L3Harris uses 30-meter data when available from the USGS for analyzing the coverage design and predictions.

The terrain data can be displayed within RAPTR to give system designers the ability to locate sites based on elevation. The terrain can be displayed in either an aerial view, as a colored contour map or combined as shown in Figure 4 and Figure 5.

Figure 4. Erath County Terrain Data

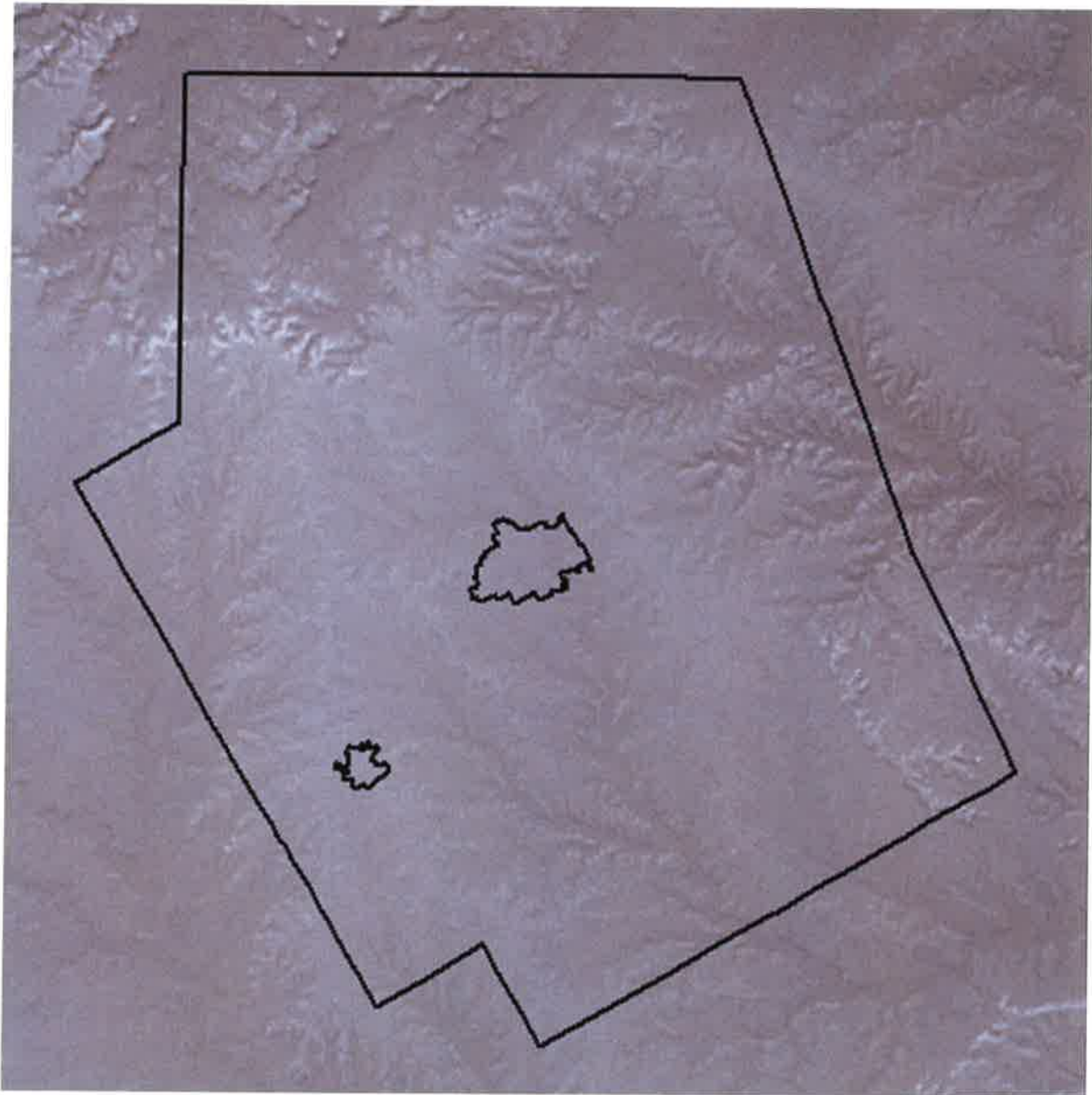
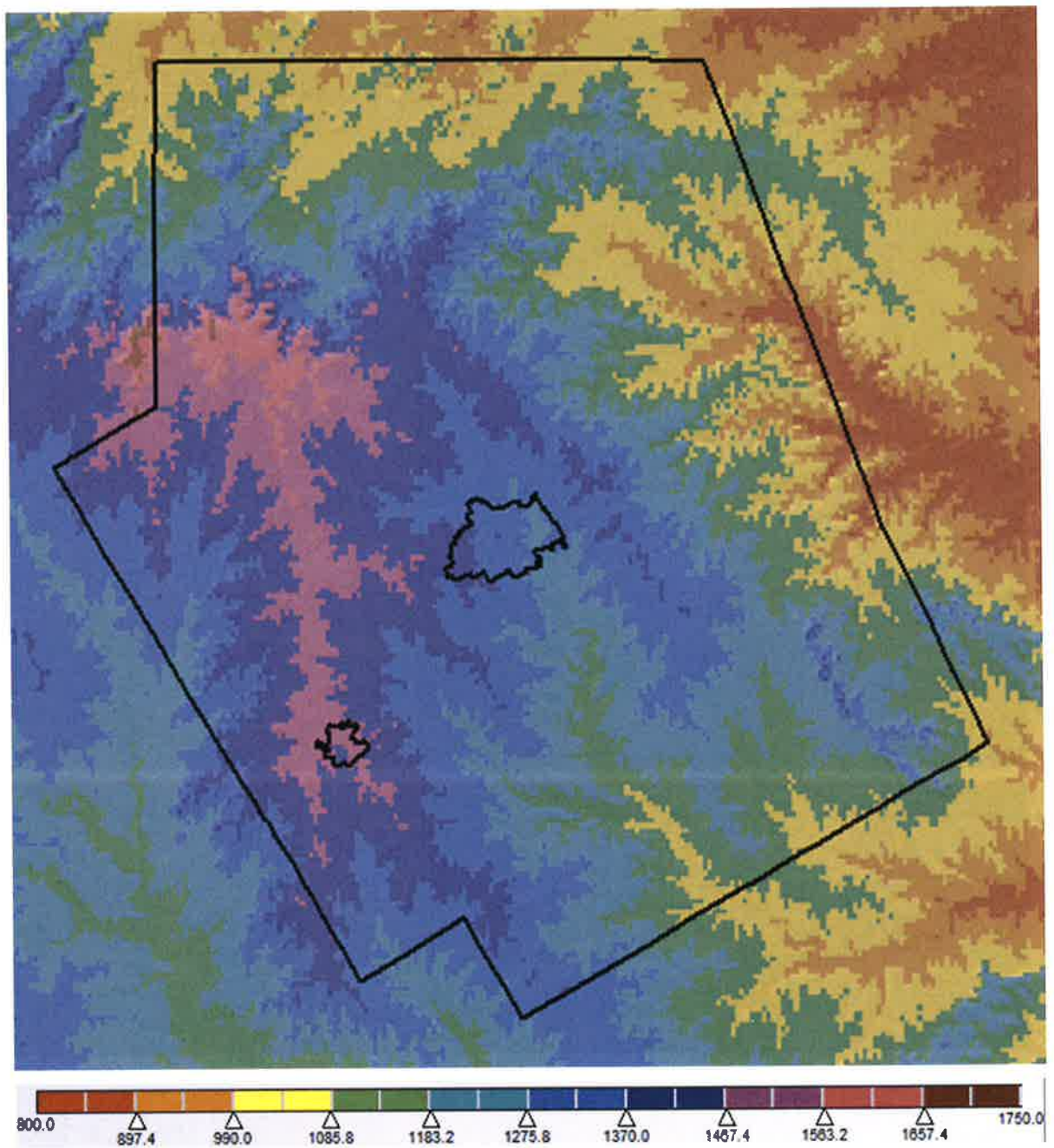


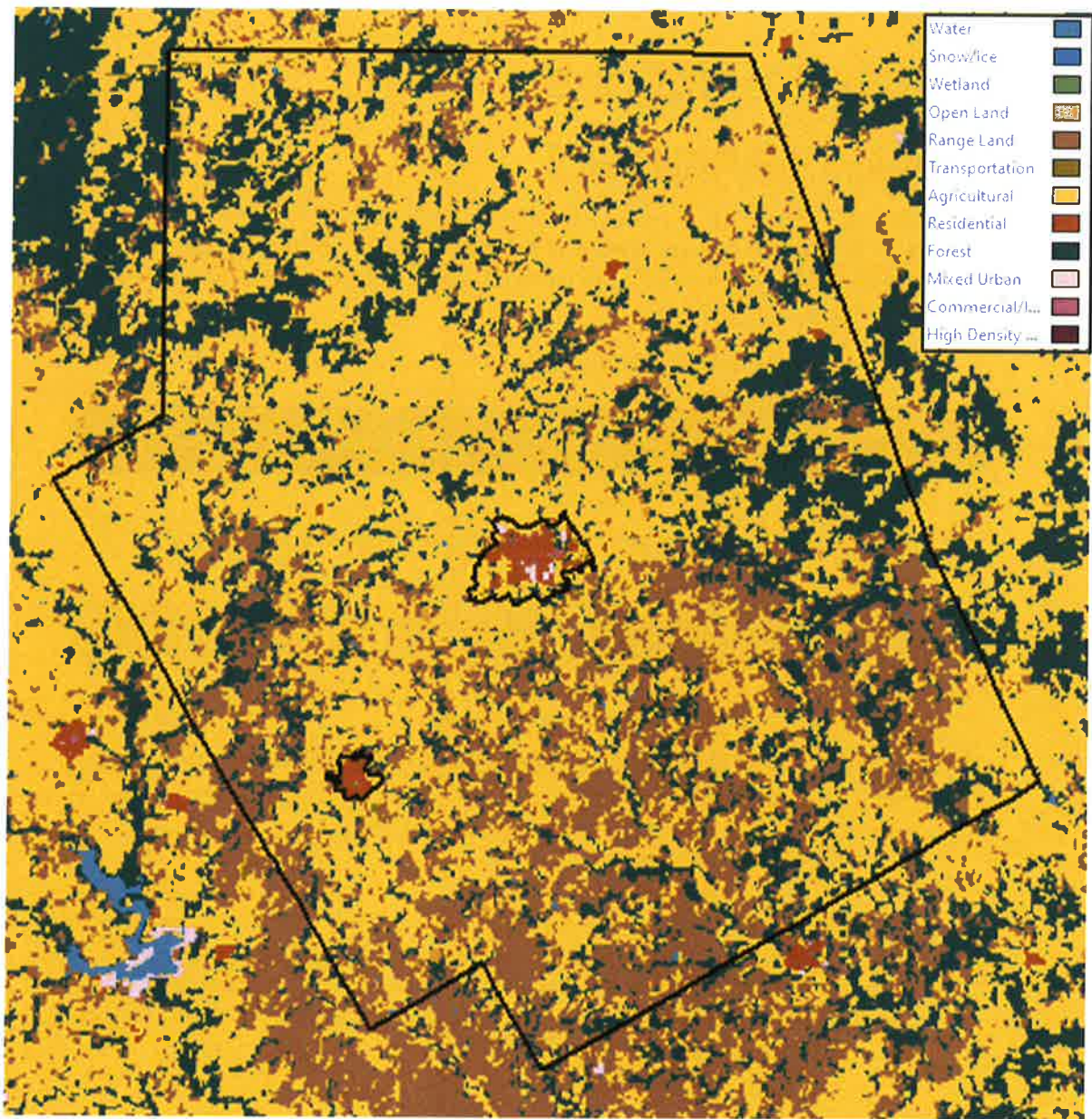
Figure 5. Erath County Terrain Data with Elevation



ENVIRONMENT DATABASE

Using an environment database further enhances the coverage prediction accuracy. This database describes the ground structures contained in an area such as urban, residential, forest, water, etc. It increases the coverage design accuracy by allowing the propagation model to account for the type of local clutter present. RAPTR's main database derives from the USGS Land Use Land Clutter (LULC) data set. Erath County's environment database information is shown in Figure 6.

Figure 6. Erath County Environment Database



RAPTR employs sophisticated analysis techniques when evaluating coverage. Instead of only considering what the environment type is at the location, or tile, being evaluated, it also considers the environment surrounding the location. This further increases the accuracy of coverage predictions by detecting transitions in the environment – for instance, when transitioning from agricultural to forest, or urban to suburban. In addition, a designer can select from a category of environment. For example, the designer can select from the forest environment class categories of pine, hardwood, mixed, etc.

Also, RAPTR can perform an analysis of the environment and classify it based on density. This increases the accuracy of coverage predictions by being able to account for dense forests and sparse forests. All these factors combine to allow RAPTR to incorporate a very detailed model of the environment into coverage designs.

Coverage Predictions

COVERAGE GUARANTEES

The L3Harris coverage design is based on bounded area reliability and is path-balanced for portable radios, meaning portable radio coverage is equal in the talk out and talk back directions. The design is established to achieve DAQ 3.4 voice quality, or better, throughout the predicted covered areas, as described below in Figure 7.

Figure 7. Delivered Audio Quality Classifications as defined by TSB-88

DELIVERED AUDIO QUALITY	SUBJECTIVE PERFORMANCE DESCRIPTION
DAQ 5.0	Speech easily understood.
DAQ 4.5	Speech easily understood. Infrequent noise/distortion.
DAQ 4.0	Speech easily understood. Occasional noise/distortion.
DAQ 3.4	Speech understandable with repetition only rarely required. Some noise/distortion.
DAQ 3.0	Speech understandable with slight effort. Occasional repetition required due to noise/distortion.
DAQ 2.0	Understandable with considerable effort. Frequent repetition due to noise/distortion.
DAQ 1.0	Unusable: speech present but unreadable.

It is important to note that usable coverage extends beyond DAQ 3.4. In areas that do not have DAQ 3.4 coverage, but have DAQ 3.0 coverage, users will still be able to make portable calls, with occasional repetition, as this is still usable coverage.

The following guarantees are offered for the system for Erath County. Guarantees are valid for L3Harris terminals.

Figure 8. System Coverage Guarantees

BOUNDED AREA DEFINITION	DESCRIPTION	REQ'D PERFORMANCE CRITERIA	% VALIDATED CPC SERVICE AREA RELIABILITY ACCEPTANCE CRITERIA
Erath County	Mobile	DAQ 3.4	95%
Erath County	Portable Outdoor	DAQ 3.4	90%

L3Harris offers these guarantees based on the system design provided. Deviation from the details of the design including, but not limited to, site count, tower location, antenna make and model, antenna location on the tower, changes to the antenna sub-systems, etc. will require a re-analysis of the coverage and may require a change to the coverage guarantee.

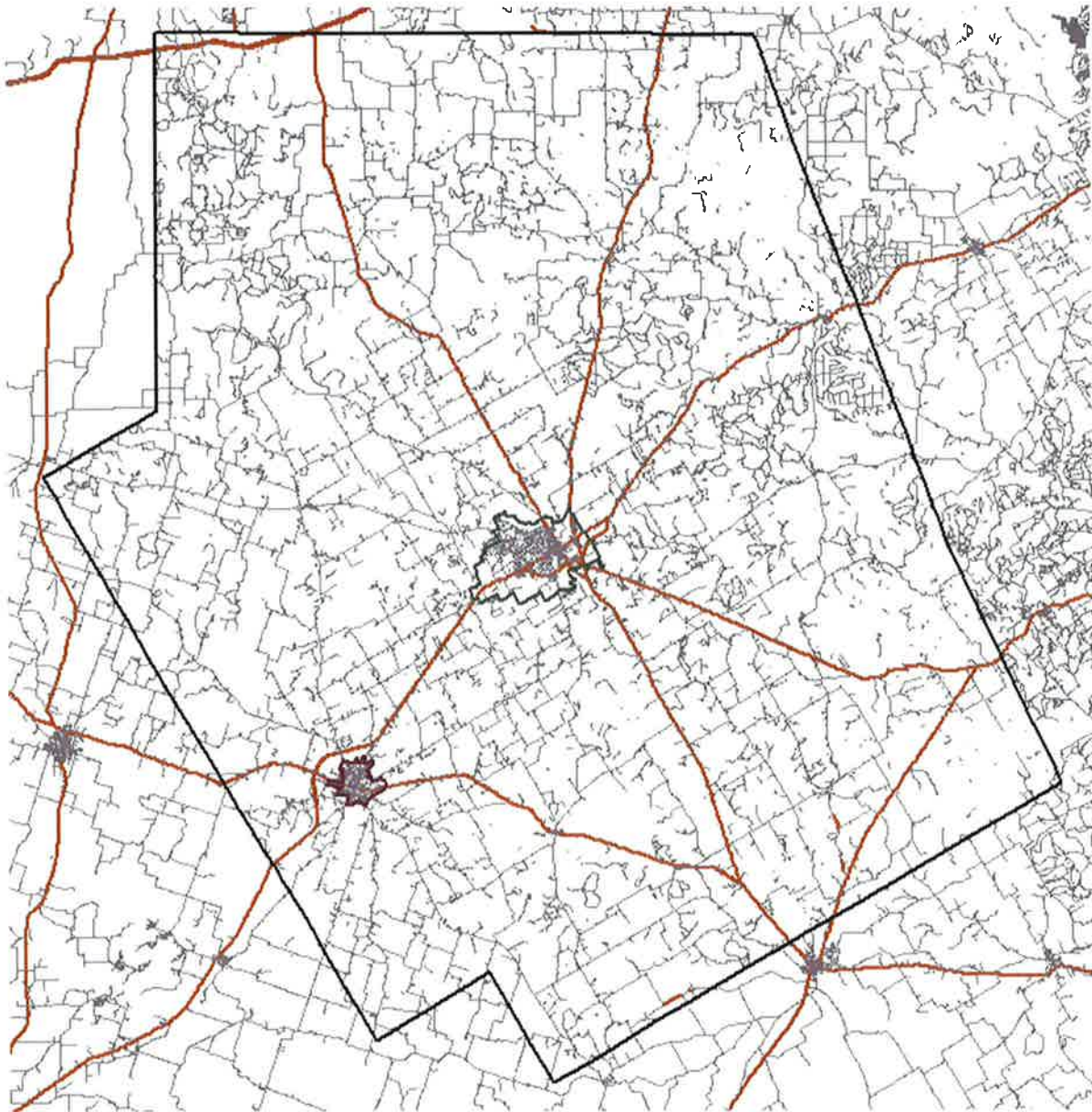
The system configuration associated with these guarantees is presented in Figure 10. Please see the Coverage Acceptance Test Plan (CATP) for additional details on coverage guarantees and testing.

BOUNDARY

L3Harris used several boundaries in the system design process. Erath County and the City of Stephenville were taken from the RAPTR GIS (Geographic Information Systems). The City of Dublin boundary was created from Google Earth by including the most populated area as it was unavailable in the RAPTR GIS.

Figure 9 shows the Erath County boundary in black, the City of Stephenville boundary in green, and the City of Dublin boundary in purple. Primary roads are shown in red lines. Secondary routes are shown by gray lines.

Figure 9. Service Area Boundaries



SYSTEM PARAMETERS

- > Portable Height: 3.5 ft
- > Portable Terminal Power: 3 W
- > Portable Terminal Antenna: ¼ wave
- > Mobile Height: 5 ft

- > Mobile Terminal Power: 30 W
- > Mobile Terminal Antenna: 3 dB antenna
- > Minimum 250 kHz spacing between transmit frequencies.

SITE SELECTION

Design work began by examining the overlapping coverage from the current GRRN system. Several potential sites were provided by the County, and these were reviewed in addition to FCC registered sites in and around Erath County. The chosen sites provided the most coverage possible while minimizing the number of required sites. The L3Harris technical solution uses coordinates and tower heights from surveys of each site in the design.

RF SITE CONFIGURATION

The L3Harris coverage design and coverage guarantees are based on the design parameters noted in Figure 10. The Stephenville site information is based on the currently implemented site. The L3Harris design consists of 2 simulcast cells, each cell shall have 2 sites. Three new sites are added to the currently implemented site at Stephenville. Figure 11 shows how the sites are arranged into the 2 simulcast cells. Simulcast cells greater than approximately 12 miles, measured between the furthest two sites, require careful antenna selection, ERP tuning, and launch delays to avoid generating Time Domain Interference, or TDI, that degrades talk-out coverage. The larger the cell, the greater the potential for TDI.

Figure 10. System Design Parameters

SITE	LATITUDE	LONGITUDE	MAX ERP (W)	TX ANT CL (FT)	RX ANT CL (FT)	TX AND RX ANTENNA MODEL
Northwest	32.3788	-98.4169	268.2	180	180	SC49C-HWBLDF (D02-NUFP)
Morgan Mill	32.3838	-98.1705	136.3	240	240	SC499-HWBLDF (D00-NUFP)
Dublin 2	31.9886	-98.2336	113.9	250	250	SR4A8-HF4P4LDF (D00-PIP)
Stephenville	32.1917	-98.2526	138.5	506	506	SC46A-HF1LDF (D00-PIP)

Figure 11. Simulcast Cell Configuration

North Simulcast Cell	Northwest
	Morgan Mill
South Simulcast Cell	Dublin 2
	Stephenville

COVERAGE MAPS

L3Harris has included a full complement of coverage maps. A sampling of those coverage maps is included here.

All maps represent P25 Phase 2 Trunking DAQ 3.4 or better communications to a receiver terminal at the indicated level (e.g. mobile, portable outdoors, portable indoor). A base map is included underneath as a reference. The following colors are used to represent coverage:

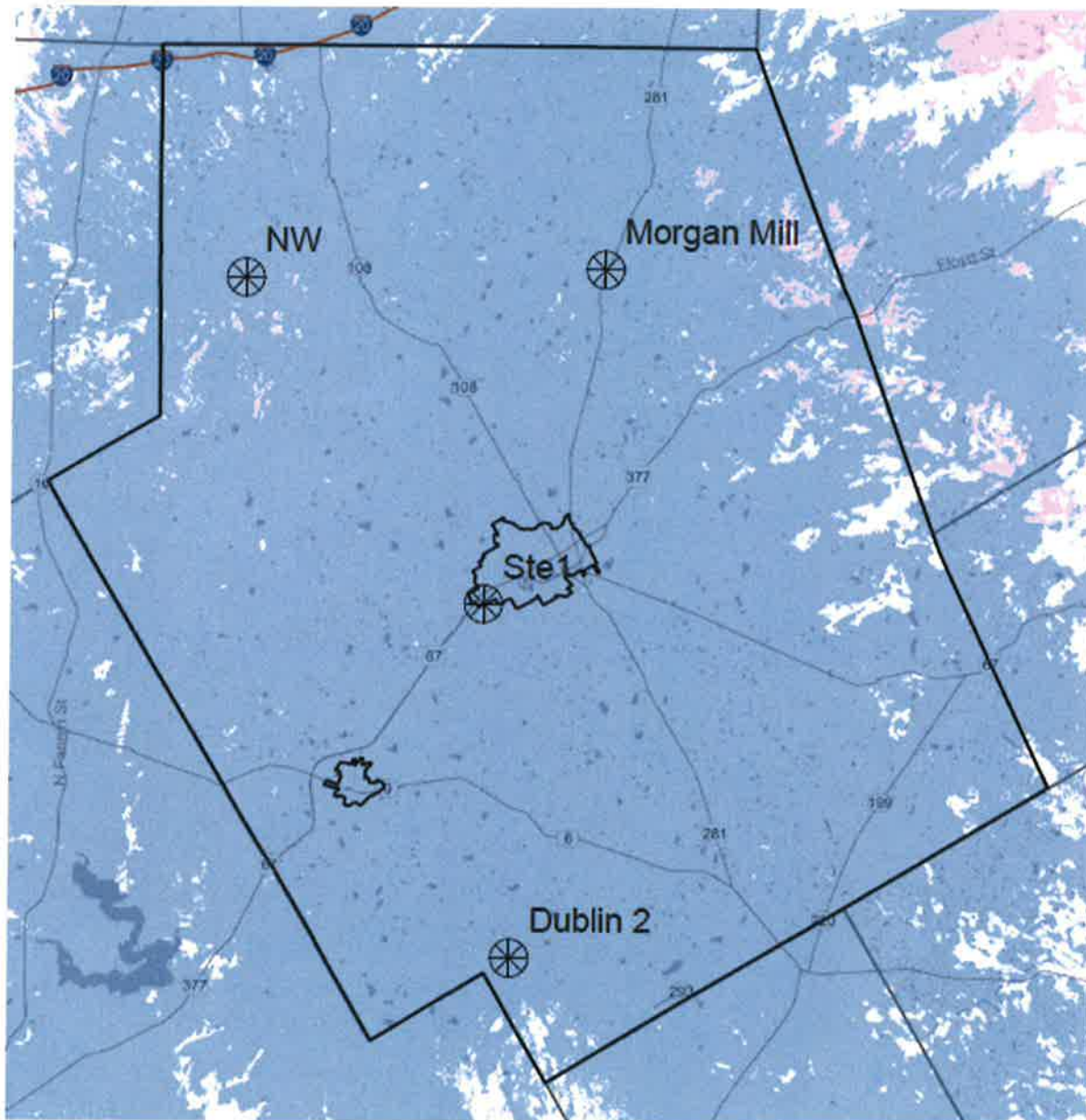
- > Green represents areas predicted to reliably have DAQ 3.4 or better communications
- > White represents areas not predicted to have reliable DAQ 3.4 communications due to inadequate signal level
- > Pink represents areas not predicted to have reliable DAQ 3.4 communications due to the presence of time domain interference

Figure 12. List of Included Coverage Maps

MAP #	MAP NAME	TYPE	BOUNDARY	DAQ LEVEL	GUARANTEED
1	Erath County Mobile Talk Out Erath County System Only	Mobile	City	3.4	No
2	Erath County Mobile Talk Back Erath County System Only	Mobile	City	3.4	No
3	Erath County Portable Outdoor Talk Out Erath County System Only	Portable Outdoor	City	3.4	No
4	Erath County Portable Outdoor Talk Back Erath County System Only	Portable Outdoor	City	3.4	No
5	Erath County Mobile Talk Out Erath County and GRRN Systems	Mobile	City	3.4	Yes
6	Erath County Mobile Talk Back Erath County and GRRN Systems	Mobile	City	3.4	Yes
7	Erath County Portable Outdoor Talk Out Erath County and GRRN Systems	Portable Outdoor	City	3.4	Yes
8	Erath County Portable Outdoor Talk Back Erath County and GRRN Systems	Portable Outdoor	City	3.4	Yes

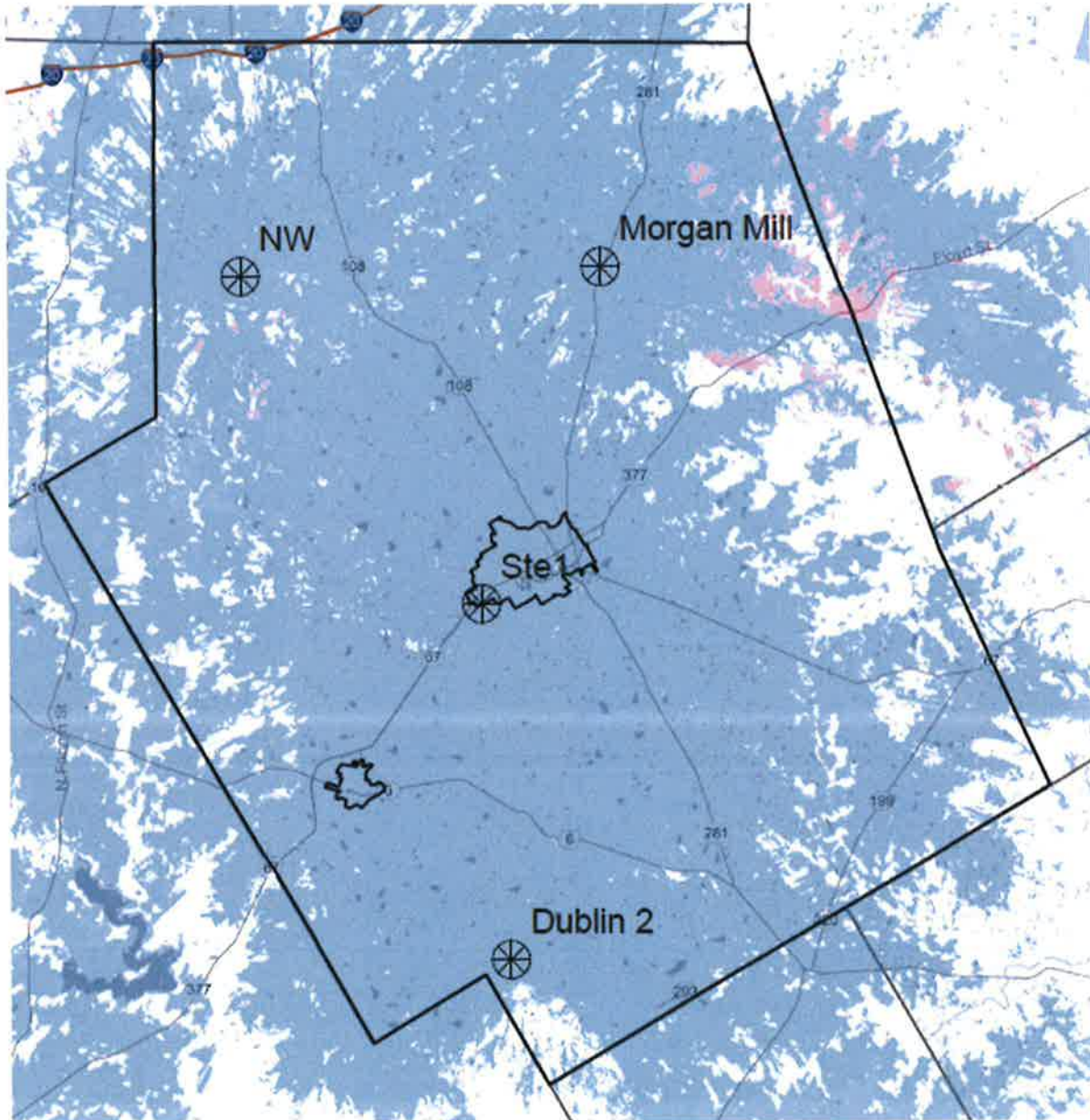
Erath County's mobile talk-out coverage from Erath County's system only is shown in Figure 13.

Figure 13. Erath County Mobile Talk-Out Coverage – Erath County Coverage Only



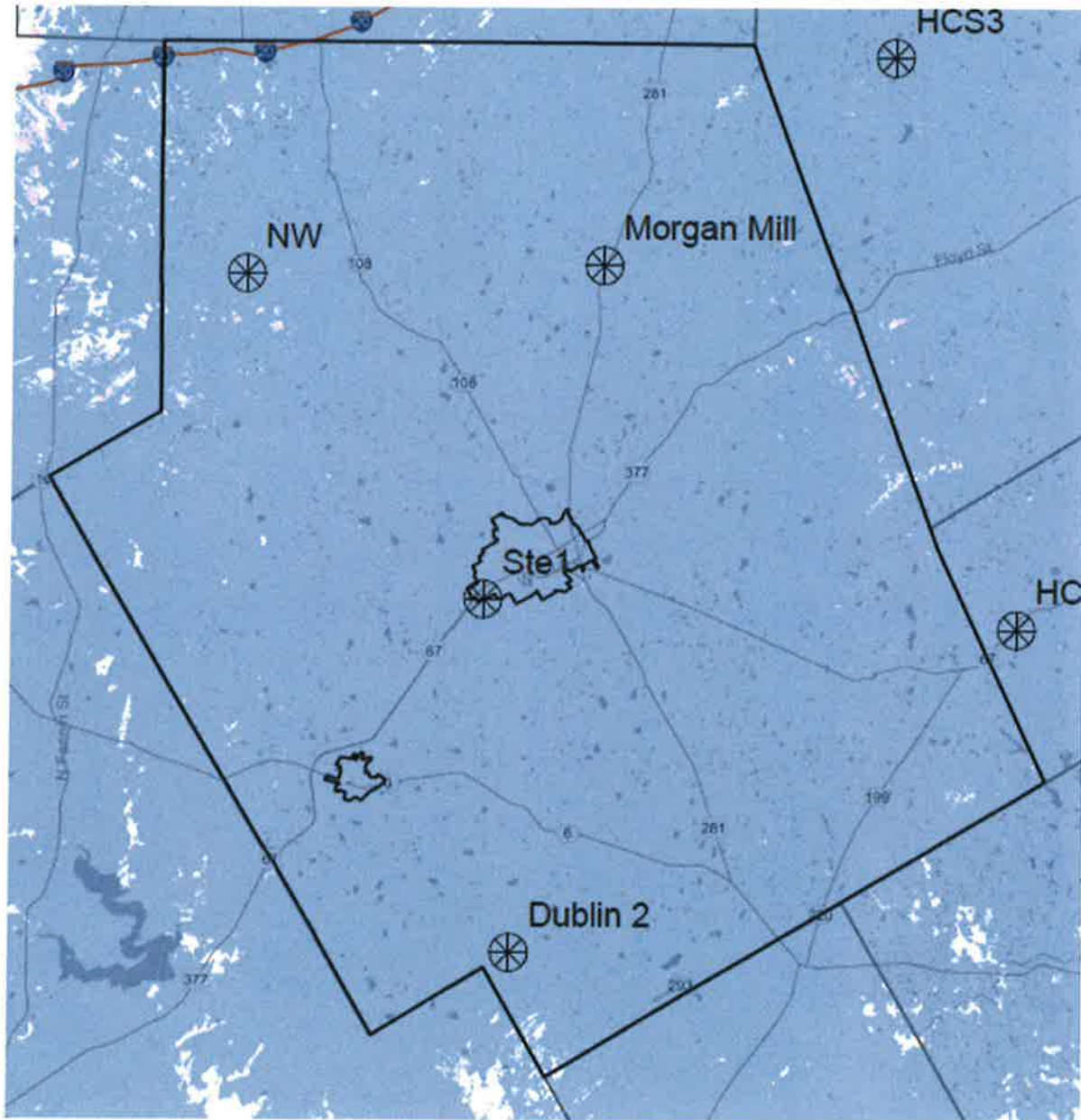
Erath County's portable outdoor talk-out coverage from Erath County's system only is shown in Figure 14.

Figure 14. Erath County Portable Outdoor Talk-Out Coverage – Erath County Coverage Only



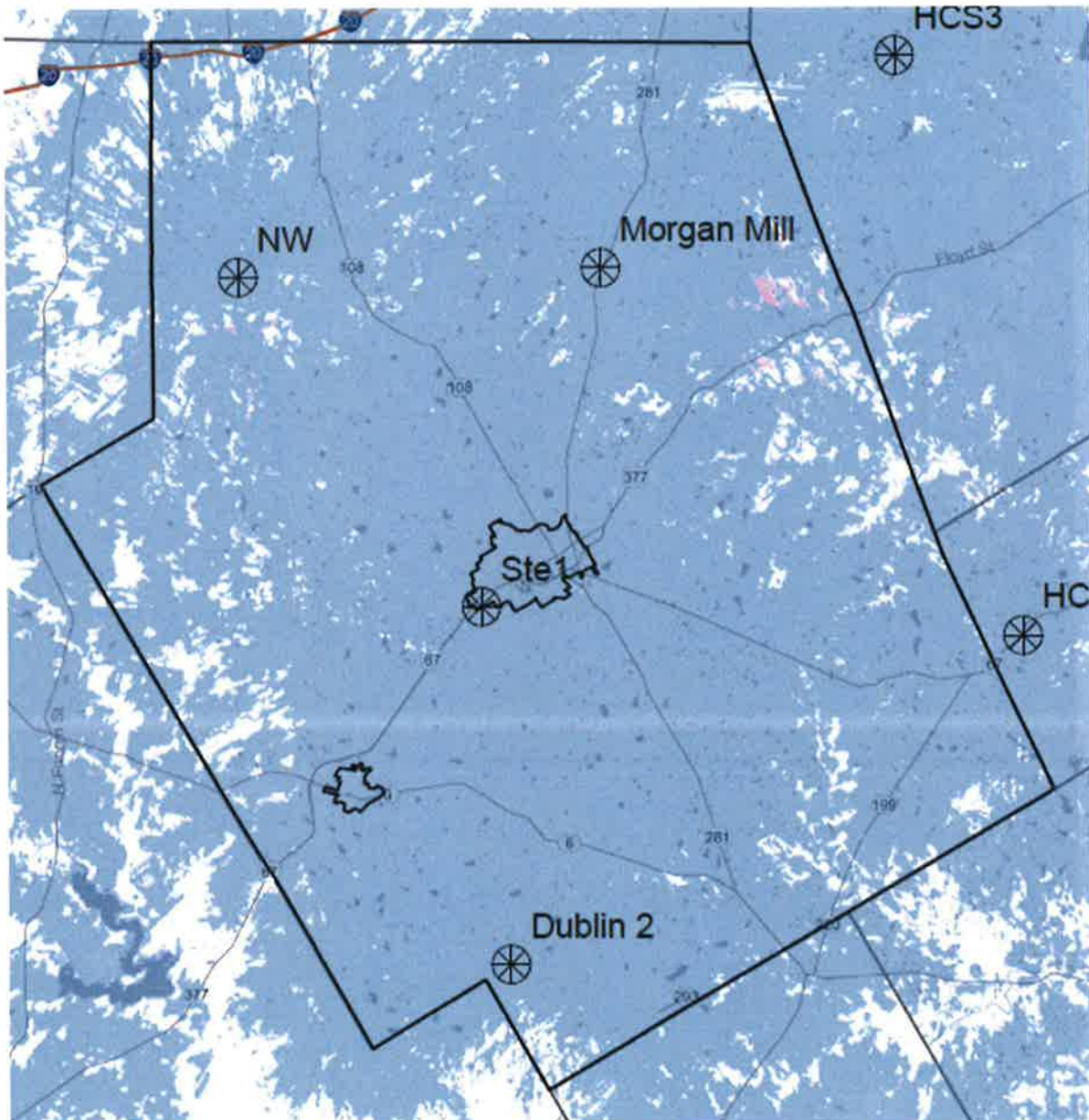
Erath County's mobile talk-out coverage from Erath County and the full GRRN system is shown in Figure 15.

Figure 15. Erath County Mobile Talk-Out Coverage – Erath County Plus GRRN System Coverage



Erath County's portable outdoor talk-out coverage from Erath County and the full GRRN system is shown in Figure 16.

Figure 16. Erath County Portable Outdoor Talk-Out Coverage – Erath County Plus GRRN System Coverage



COVERAGE ACCEPTANCE TESTING

L3Harris has included a Coverage Acceptance Test Plan (CATP) that will verify the coverage predictions provided to the County. The tests listed below will be used to demonstrate the RF coverage throughout Erath County.

- > Talk Out Bit Error Rate (BER)
- > Talk Out Signal Strength (For Information Only)

For detailed information on the coverage tests and coverage guarantee, refer to the CATP.

Frequency Planning

700 MHZ FREQUENCY PLAN

The L3Harris design consists of 2 simulcast cells of 4 channels each. L3Harris has industry leading expertise in frequency planning and management. Our Spectrum Engineering Group has reviewed the currently allocated frequencies for the geographic region of Erath County and the surrounding service area and has found 5 frequency pairs in addition to the 4 frequency pairs already in use at the Stephenville site that meet the requirements of the system.

Frequency availability and acquisition is a dynamic and complex environment and subject to change. We will establish usable and licensable frequencies post-contract award and support Erath County in the acquisition of those frequencies.

With a minimum spacing between the frequencies of at least 250 kHz, L3Harris is confident that the combiner system will be adequate for system operations without the use of additional filtering components. The complete set of frequencies along with the intermodulation analysis will be presented at the Detailed Design Review.

FREQUENCY PLANNING ASSISTANCE

L3Harris will provide engineering analysis and technical documentation required and defined by the Regional Planning Committee to complete one set of FCC license applications for the Erath County system.

Engineering analysis is defined below and provided as needed for the project:

- > Co-Channel Contour Analysis
- > Adjacent Channel Contour Analysis
- > Co-Channel Coverage Interference
- > Adjacent Channel Coverage Interference
- > Safe Harbor Showings

Additional engineering analysis that may be required to address unusual or atypical licensing requirements will be addressed through the program change order process. L3Harris will complete and submit the FCC license applications on behalf of the County and will be responsible for all FCC

Application and Coordination Fees. L3Harris requires Erath County to approve all documents/applications prior to submission to the Regional Planning Committee, FCC Certified Coordinator, or FCC, as applicable.

INTERMODULATION INTERFERENCE ANALYSIS

Our intermodulation interference analysis at this stage consists only of the frequencies we propose to place at each site. During the detailed design phase L3Harris would conduct expanded intermodulation interference analysis which would consider all identifiable co-located tenants at the site.

L3Harris will base its intermodulation analysis on the L3Harris system frequencies and those identifiable in the FCC database for each site or that Erath County provides L3Harris in advance of L3Harris' intermodulation analysis.

L3Harris cannot be responsible for omissions or inaccuracies to the FCC data or for which frequency assignments cannot be specifically defined such as with market-based allocations.

Further, L3Harris cannot be responsible for interference to equipment installed near equipment that is inadequately designed or installed, making it susceptible to interference from equipment that is operating properly. L3Harris will make a best-faith effort to identify any such equipment and recommend engineering solutions that might be applied to that equipment.

L3Harris cannot be responsible for interference, either self-induced or external to the system, caused by any of the following:

- > Self-induced/external adjacent interference.
- > Self-induced or created with other transmitters IM distortions.
- > Self-induced interference due to elevated noise floor.

The following mitigation steps are taken in the design to minimize intermodulation products and self-interference:

- > Filters as needed for transmit antenna feed line
- > Vertical or horizontal separation between transmit and receive antennas
- > Use of low passive intermodulation (PIM) antenna system products where available such as use of DIN connectors after the transmit combiner

Traffic Analysis

L3Harris calculated the maximum traffic capacity based on Erath County’s requirement of four (4) channels.

MAXIMUM NUMBER OF ACTIVE USERS

L3Harris performed a subscriber load analysis to determine the maximum number of active-users the 4-channel system could support. The analysis consists of the following inputs:

- > Three (3) Phase-2 talk channels that correlates to 6 talk-paths.
 - The fourth channel would function as a control channel and would not carry voice traffic.
- > 1% GOS (Grade of Service) or better.
 - Grade of Service refers to the probability that a user will be queued when trying to make a call. The standard for Public Safety is to operate at 1% or less GOS.

PUBLIC SAFETY USER TRAFFIC PROFILE

L3Harris used empirical data gathered from Public Service and Public Safety customers across the Country to create a Traffic Profile.

L3Harris has made the following traffic profile assumptions in our calculation.

- > 6.5 Group Call PTTs per hour per user
- > 3.2 seconds transmission time average per Group Call PTT
- > 0.2 Individual Call PTTs per hour per user
- > 4.2 seconds transmission time average per Individual Call PTT
- > 0.76 seconds of call overhead, Phase-2 call
- > 25% of the system traffic is generated by dispatch

MAXIMUM NUMBER OF ACTIVE-USERS

Figure 17. shows the calculated maximum number of active users.

Figure 17. Maximum supportable subscriber units

PROFILE	MAXIMUM ACTIVE USERS
Public Safety	167

An active-user does not equate to a subscriber unit, as some active-users will have both a portable unit and mobile unit. Units that are powered off do not count as active users.

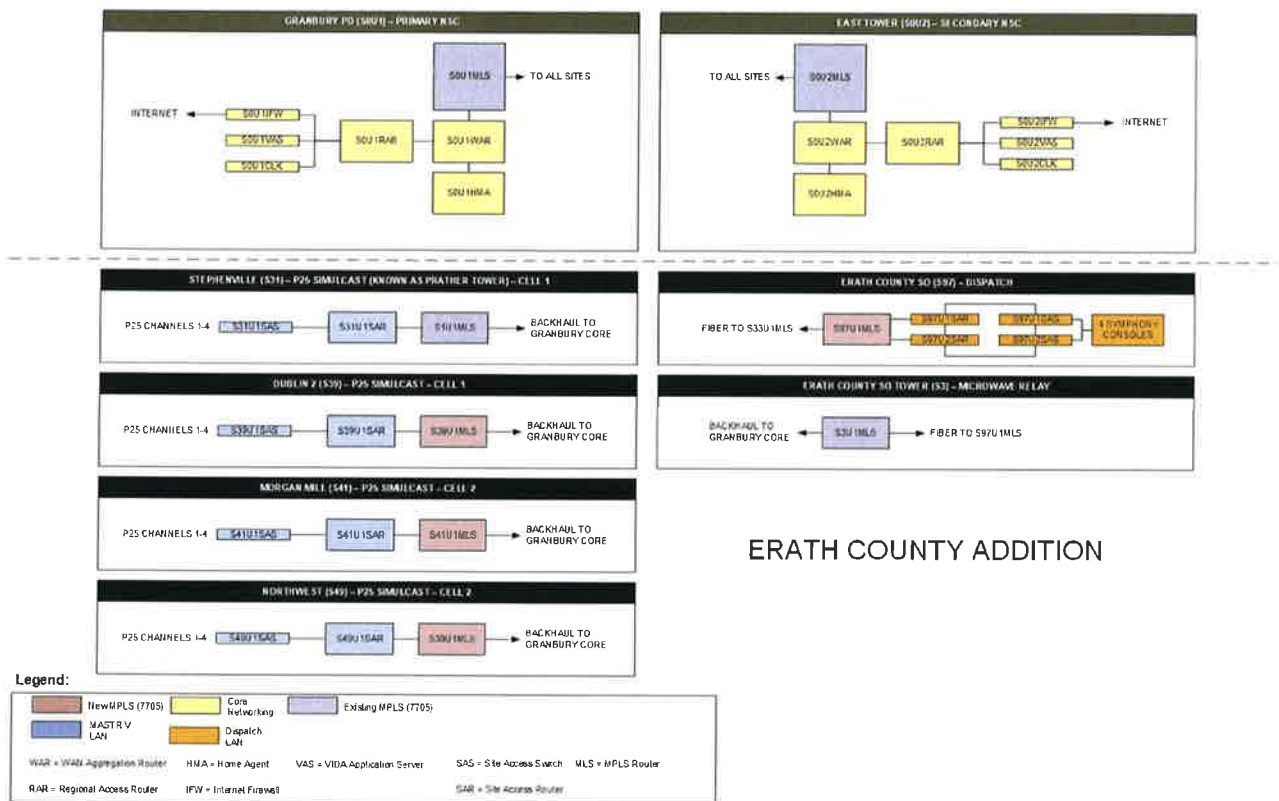
Knowing the system’s maximum user capacity helps to know the system’s capability during surges of traffic. Surges may occur during shift changes, where users from both the ending and starting shift overlap operations, or when there is a wide scale mutual aid event or incident.

VIDA Network WAN Design

Figure 18 provides an overview of network connectivity for the Erath County, within the Granbury Regional Radio Network (GRRN).

GRRN is a wide area network (WAN) designed to L3Harris provided design requirements. The design requirements were specified to meet the overall performance needs of the VIDA system and to provide an assured level of service for voice quality.

Figure 18. Network Diagram



ERATH COUNTY ADDITION

SYSTEM BANDWIDTH REQUIREMENTS

The Erath County system integration requires the bandwidth requirements specified in Figure 19. Note that the bandwidth of at least 100 Mbps is recommended should the Erath County install live video cameras at the towers or anywhere else within the system.

Figure 19. Bandwidth Requirements (7705 MPLS Requirements)

SYSTEM NAME	TYPE	RAW SIMULCAST AND SITE RING AGGREGATED TRAFFIC (Kbps)	MINIMUM RECOMMENDED RING REQUIREMENT (Kbps)
4-Channel GRRN	DCP Simulcast	1,296	2,592
4-Channel Hood County	Multicast	216	432
I/O Gateway	RF Site	1,024	2,048
Granbury Dispatch	Dispatch	2,056	4,112
Hood County Dispatch	Dispatch	1,028	2,056
Erath County Dispatch	Dispatch	2,056	4,112
Additional Hood County Dispatch	Dispatch	2,056	4,112
Logging Recorder (Hood County)	Dispatch	1,124	2,248
I/O Gateway (Erath County)	RF Site	1,024	2,048
Erath North Simulcast Cell	DCP Simulcast	556	1,112
Erath South Simulcast Cell	DCP Simulcast	556	1,112
AGGREGATION TOTAL		12,992	25,984

BACKHAUL NETWORK DESIGN

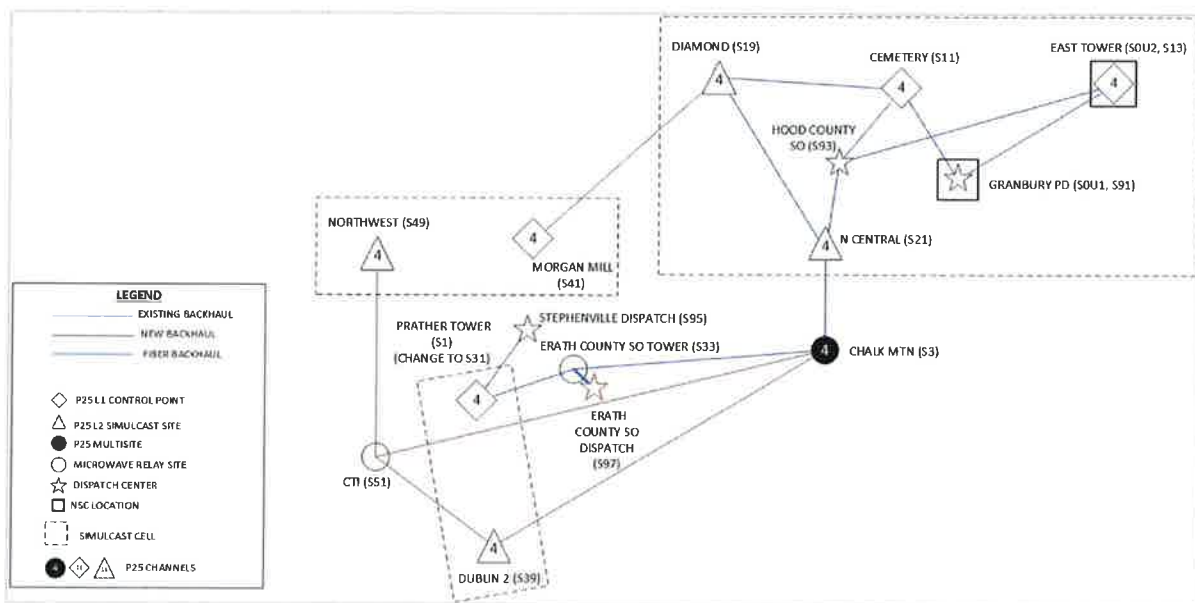
L3Harris will provide Erath County with a new microwave backhaul network to accommodate the new P25 radio system infrastructure.

The microwave backhaul design consists of five microwave links. These links will form a network that shall connect to sites that have GRRN network access. All designs should be considered preliminary until field surveys and frequency coordination has been completed. Until such time antenna centerlines, sizes and types are subject to change.

While L3Harris has included Cielo Networks to match GRRN's existing microwave vendor, L3Harris has not certified Cielo Networks as a qualified and tested vendor. L3Harris cannot be responsible for long-term maintenance, performance, and cybersecurity patch responsibilities for the Cielo Networks microwave solution. L3Harris requires that Erath County contract directly with Cielo Networks for technical support.

Figure 20 shows the microwave backhaul connections to the existing VIDA Network Switching Center (NSC) .

Figure 20. Microwave Network Topology



Equipment Descriptions

P25 Simulcast System Architecture

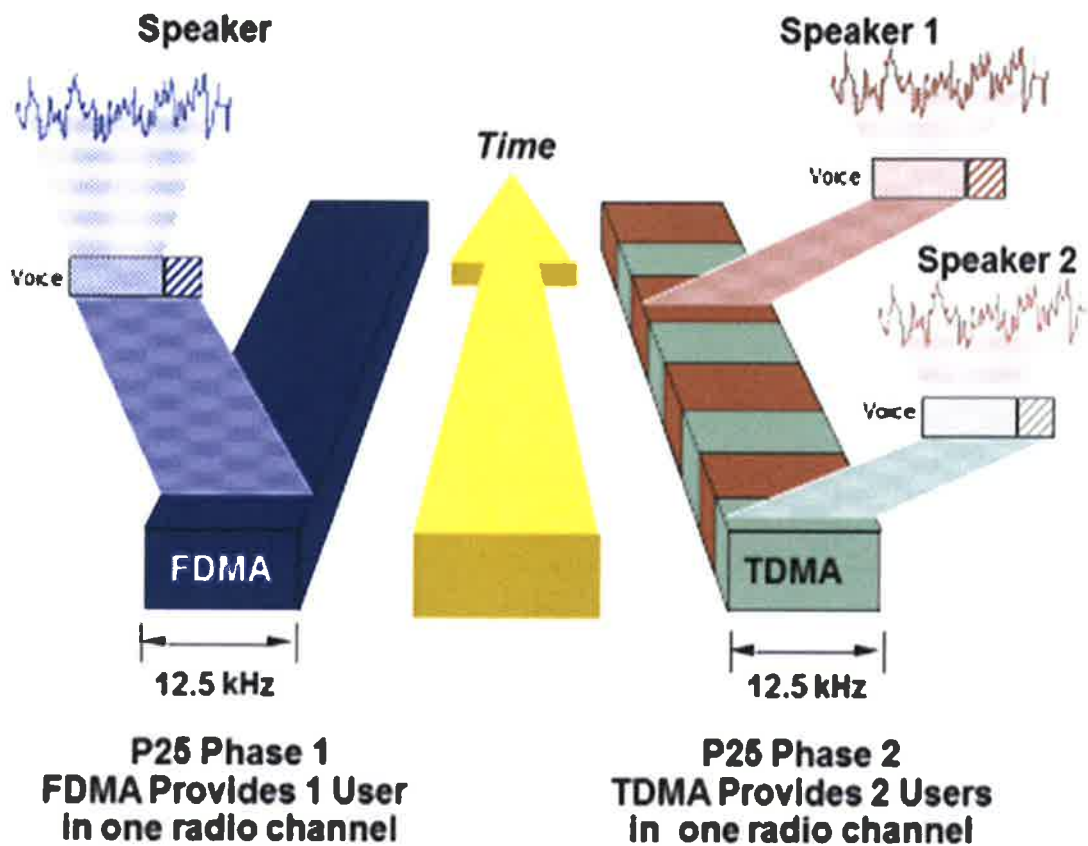
P25 SYSTEM OVERVIEW

L3Harris' P25 was the first completely Internet Protocol (IP)-based mobile radio communications system developed for users requiring the secure digital voice and data capabilities of Project 25. P25 is part of a portfolio of solutions that L3Harris offers for wide-area communication systems – each of which can meet the communications requirements of federal, public safety, public service and first responders. P25 meets the requirements of the P25 Phase 1 and Phase 2 standards, plus provides value-added voice and data features.

To allow more users per channel, the P25 standards committee defined "P25 Phase 2 TDMA operation." P25 Phase 2 compliant radios can operate using the two-slot Time Division Multiple Access (TDMA) modulation format. In this case, TDMA technology allows two voice calls simultaneously on each frequency/channel. The channel is still 12.5 kHz, but it now supports two active calls simultaneously, thereby providing operation with 6.25 kHz equivalence.

In P25 Phase 2, each base station supports two timeslots (two calls) per 12.5 kHz channel bandwidth (Figure 21). This TDMA modulation scheme enables radios to use the equivalent of a 6.25 kHz voice channel. So P25 Phase 2 is called "6.25 kHz channel equivalent" by the FCC. P25 Phase 2 supports twice as many calls per channel as P25 Phase 1 mode. By using the RF spectrum more efficiently, P25 Phase 2 effectively increases the available voice talk paths by a factor of four, compared to a legacy analog RF channel.

Figure 21. Comparison of FDMA and TDMA Radio Channels



As the number of LMR users increase, so does the need to support greater capacity and improve system efficiency. L3Harris P25 Phase 2 technology offers a solution to support the challenges and demands of the technologically maturing LMR industry. The following features and benefits are supported within L3Harris P25^{IP} Phase 2 systems:

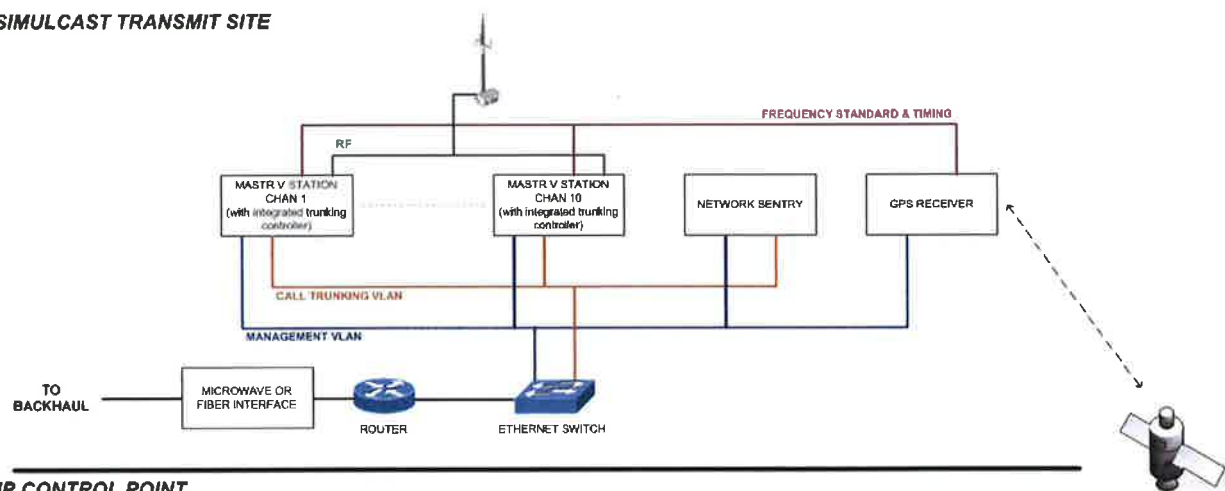
- > Meets FCC Narrowband initiative
- > Increases voice channel capacity – two voice-paths per working channel
- > Maintains voice quality by using digital technology
- > Improves interoperability through standards-based protocols and interfaces
- > Protects Phase 2 system capacity while providing backwards compatibility

P25 PHASE 2 TRUNKED SIMULCAST

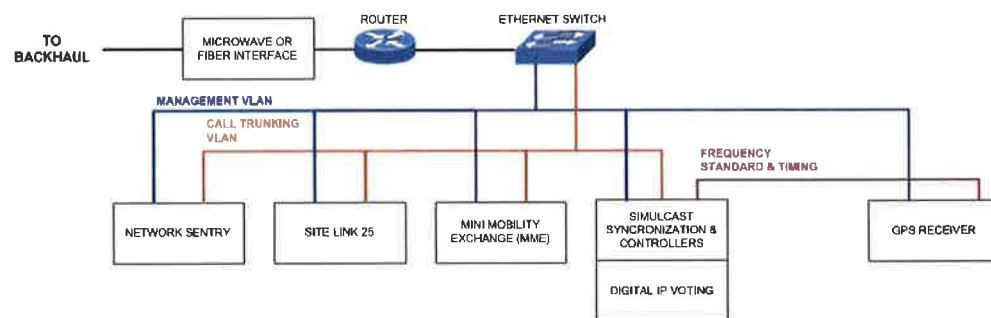
In the P25 Phase 2 trunked simulcast system, the simulcast sites include both a transmitter and receiver for each of the seven trunked channels, as well as the common equipment required for simulcast operation. The Distributed Control Point(s) connect to each of the simulcast RF sites through the microwave system. Figure 22 shows a high-level block diagram for the P25 Simulcast Control Point and transmit site architecture.

Figure 22. Control Point and Transmit Site Architecture

SIMULCAST TRANSMIT SITE



IP CONTROL POINT



Linear Simulcast Systems operating in P25 Phase 2 use the H-DQPSK Phase 2 Linear Modulation trunked digital protocol. Combining P25 with trunked Simulcast adds benefits like extended coverage areas, trunking, and greater usage of RF bandwidth.

Outbound (Transmitter) Signaling

Timing (or delay) for the outbound transmissions is adjusted by each transmit site to make the timing reference signals from the Control Point and transmit site match. Control of the exact time the common outbound signal is transmitted from each transmit site in a simulcast system is critical to areas where overlapping coverage zones exist between the simulcast transmit sites. Proper timing results in effective simulcast communications. Using the precise timing signals produced by Global Positioning Satellite (GPS) receivers to synchronize P25 trunked Simulcast systems provides an efficient and cost-effective solution for obtaining the above conditions.

GPS receivers at all sites produce a 1 pps clock signal, used for system timing. At the Control Point, the GPS timing signals are used to generate the outbound data and a timing reference that is embedded in the outbound transmit data packets that are sent to all transmit sites.

The timing reference generated from the local GPS receivers at all transmit sites are compared with the recovered timing signals from the Control Point by the base station to set the proper transmit time.

In addition to the 1 pps timing reference signal, the GPS receivers at the Control Point produce a 10 MHz clock for the control point traffic controller shelves and the network backbone equipment. At the transmit site the GPS receivers produce a 10 MHz clock for the station reference that is used for both precise RF carrier generation and precise control of the transmit data rate.

System Stability

In a typical simulcast system, transients produced by weather disturbances such as lightning and other sources of noise can affect data synchronization. These transients may disrupt a microwave path or cause the microwave system to switch over to hot standby. Data synchronization must be maintained to achieve overall system communication integrity in the overlap zone.

Two methods are employed to assure long-term synchronization and stability:

- > Frequency synchronization from the Global Positioning System.
- > A unique high-speed data auto re-synchronization system.

The RF carrier frequency of each channel is precisely maintained within 0.1 Hz of the desired frequency to minimize distortion due to heterodyning frequencies. To achieve this level of performance, the reference oscillator at each transmitter is locked onto the 10 MHz reference signal derived from the 1.5 GHz signal from the GPS receiver. The accuracy of the 10 MHz oscillator, when locked to the GPS, is held within $\pm 1 \times 10^{-12}$.

P25 RF SITE EQUIPMENT DESCRIPTION

MASTR V Base Station

The MASTR V base station powers secure P25 digital voice and data communications. Its functionality and architecture meet public safety requirements and set it apart from other base stations in the P25 industry:

Figure 23. MASTR V Base Station

Compact and integrated hardware supports up to eight channels in a single cabinet or rack. Multiple RF channels sharing a rack lowers costs, minimizes the amount of supporting hardware, reduces maintenance, necessary floor space, and the burden on other site resources such as HVAC systems.



- > Digital-signal processing routes voice and data calls as IP packets to the network, resulting in economical routing and backhaul.
- > The distributed architecture results in high-fault tolerance, minimizing the effects of hardware failure. For example, unlike other vendors' architectures that use a single or redundant site controller computer, each MASTR V base station has a built-in Traffic Controller that controls call-processing functions. An Ethernet switch in the repeater chassis connects each Traffic Controller to two Local Area Networks (LANs) for network management and call processing.
- > The distributed architecture allows all trunking channels to operate as a control or working (voice) channel, which results in a greater level of reliability than that of other systems. If the active control channel fails, another channel takes over as the control channel, without any manual intervention or interruption to call-processing capability. Notification of the failure displays at the alarm management system to alert system management personnel. If there are any subsequent control channel failures, the same process of reassignment and notification repeats. Therefore, a MASTR V P25 trunked site never disintegrates into conventional operation, regardless of the number of channel failures. This eliminates confusion and error among radio users.
- > The flexible hardware platform supports P25 Conventional, P25 Trunked Phase 1 (FDMA), and P25 Trunked Phase 2 (TDMA) operation, reducing migration costs.
- > The native IP operation simplifies data integration with wireless IP data applications.

- > Remote programming of the MASTR V base station allows the system administrator to perform software upgrades, firmware upgrades, or individual parameter changes without traveling to the site and manually connecting to the stations.
- > The hardened design allows the MASTR V to operate in rugged environments, with an operating ambient temperature range of -30 °C to +60 °C and to operational altitudes of 15,000 feet above sea level. These base stations currently operate in harsh environments, such as the blazing sands of the Middle East, the frigid extremes of northern Saskatchewan, and the towering peaks of the Sierra Nevada mountains.
- > Modular boards simplify maintenance procedures.

MASTR V Base Station Modules

For P25 operation, it is possible to install the following station modules in the MASTR V base station shelf.

Figure 24. MASTR V Base Station Modules

MODULE	BENEFITS
Tx Module	Provides a highly stable RF output to drive the high-power amplifier (HPA) module Uses a Direct Digital Synthesizer (DSS) that optimizes its modulation characteristics. The DSS can digitally create a precision waveform or modulation scheme from a single on-board oscillator
Rx Module	The MASTR V Rx modules are dual-IF conversion receivers. The receiver uses a sigma-delta-analog-to-digital converter to process the incoming IF signal. The output of this analog-to-digital converter is a complex pair of I/Q baseband digital signals Supports a wide range of modulation waveforms required for current and next generation public safety two-way radio communications
Baseband Processor Module	Generates all receive, transmit, and control processing for one or more RF channels Provides a data interface between the Traffic Controller and the Tx and Rx modules Generates a heartbeat message to monitor the health of base station modules Available in 700 MHz, 800 MHz, UHF, and VHF
Traffic Controller Module	Manages data and control information for one Tx and one Rx channel module. It interprets and directs inbound calls, and issues appropriate control commands to and from the Tx and Rx modules. These include how to handle data between the base station and the control point Processes decoded radio information received from the baseband processor module and handles all aspects of trunking (e.g., subscriber unit validation, assigned channels, queuing) Implements P25 call control, network management, and remote channel management. P25 features (e.g., radio registration, authentication, mobility management) are available on a channel-by-channel basis Encapsulates P25 clear and encrypted voice and data calls into IP packets for routing throughout the network. The packets contain P25 user and talkgroup IDs, allowing the network to operate with seamless end-to-end IP functionality

MODULE	BENEFITS
	Handles IP connectivity of each channel with the P25 network. It monitors repeater communications while providing routing for multi-site voice and data calls. The Traffic Controller replicates key P25 database information at the site to allow uninterrupted channel operation
	All of the controllers share database and dynamic call processing information from the Network Switching Center (NSC) to avoid having a single point of failure
High Power Amplifier (HPA) Module	Provides continuous duty, solid state, and wideband RF power amplifier Amplifies the exciter output to the rated station output power level Equipped with an RF linearizer circuit to improve RF performance. The RF linearizer samples the RF output of the HPA and provides waveform correction to the RF input signal relative to its RF output characteristics. This improves waveform distortion and enhances simulcast operation
Power Supply Module	Provides continuous duty-switching power supply Includes front-panel LED status indicators for each DC output, an AC Power input LED, and a front-panel on/off switch used to disable the power supply and built-in cooling fan
Ethernet Switch	Enable Ethernet communications to pass voice and data transmissions as well as management and control data between the Traffic Controller and supporting MASTR V modules Are available on redundant modules

SITE NETWORKING EQUIPMENT

Commercial-off-the-Shelf (COTS) routers and Ethernet switches perform the following functions:

- > Move information across a network from source to destination
- > Recognize all the different network layer protocols used on the network
- > Provide more than one path to a destination network
- > Switch voice packets and arbitrate cross-site voice access

Unlike other systems that use proprietary operating systems on non-standard networking equipment, L3Harris P25 systems deploys routers and switches that utilize their native operating systems. This ensures the full benefits of COTS networking equipment.

**L3Harris uses COTS equipment for site switch and routing.
These devices utilize non-proprietary operating systems.**

Ethernet Switch

The site Ethernet switch provides a LAN interface for site equipment and a LAN port for the site router. L3Harris shall provide Cisco C1000FE switches for the RF site and the dispatch location.

RF Site Router

The redundant site routers provide an interface handling all the IP network voice, data, and management traffic between the network switch and the RF site. It provides the following:

- > **Media Conversion** – This converts the Ethernet to the selected transport medium.
- > **Quality of Service (QoS)** – This applies a prioritization marking to each packet to ensure real-time services (e.g., voice) receive its required bandwidth.

VIDA Virtual Site – Remote Terminal Unit

The VIDA Virtual Site is a powerful, compact computer that hosts Site Management Services as part of L3Harris' total Site Management System. It provides a full array of digital communications capabilities for fast, accurate, and efficient relay of critical information.

The VIDA Virtual Site monitors the site call processing local area network (LAN) for call activity and fault messages. The VIDA Virtual Site ensures that data such as user, group, and channel configurations is reliably transferred to configured site devices. The fault monitoring services take input from the site call processing of LAN, RF Power, Digital Input/ Output (I/O), Channel Test services and current alarms. It uses this information to identify potential problems and their severity, status, and reason for the most recent failure. This increases operator awareness, improves response time for maintaining vital communication links, and decreases repair time and system downtime.

The VIDA Virtual Site can be custom configured with an array of analog or digital Input or digital Outputs adapters (I/O) which can be used to gather site alarms or control relay logic devices. These I/Os can be configured by the user to indicate faults in devices such as tower beacons, doors, temperature alarms, etc. that require remote controlling and monitoring. This information allows users to make quick, informed decisions to meet their needs and to adapt as those needs change.

SYMPHONY IP DISPATCH CONSOLES

The Symphony dispatch console is a full-featured dispatch console with true, IP-secure network connectivity. The Symphony console is the latest offering in IP dispatch technology based on the Microsoft Windows operating system. It is the dispatcher's best weapon in the fight against time. Built upon a proven platform, it is simple, organized, and efficient. The screen layout is easy to learn and operate; maximizing productivity while minimizing training time. Large buttons and intuitive, customized layouts make maneuvering through the console functions easy and straightforward. L3Harris' dispatch systems are supportive of, and can operate in, a method fully consistent with the NFPA 1221 standards.

A single, logical network connection to the PC-hosted Symphony console replaces the traditional audio switches found in traditional systems. With less equipment and complexity, the Symphony console is a more robust solution. The core package of the Symphony includes a Central Processing Unit (CPU), monitor, microphone, mouse, and speakers, which can be placed on any standard furniture that has space to accommodate a monitor and the accessories shown in Figure 25. Symphony also supports a complete set of audio accessories, including headsets, microphones, speakers and footswitches. The Symphony Dispatch Platform (SDP) is an industrial grade computer running the Windows 10 operating system, and hosts the Symphony application, which provides the dispatch features with a highly customizable graphical user interface.

Figure 25. Symphony Dispatch Console and Accessories



It utilizes the CPU to perform the digitization of voice, like Voice over Internet applications. The Symphony console is an integral part of the VIDA network and does not require any “back room” electronics equipment, as required for other systems. This is a great savings in terms of installation cost and space requirements. Because the console is IP based and only requires a network connection to tie into the VIDA network, ad hoc backup dispatch centers can be quickly established as the need dictates.

Also, installed in the SDP is the Symphony Audio Processor (the “Audio Box”) which provides the platform for modulating, demodulating, routing, and recording dozens of concurrent audio streams. The Audio Box also provides automatic gain or level control of various inputs, equalizing responses from different combinations of responders and equipment. The wide array of connectors on the SDP simplifies the cabling for the peripheral options at each dispatch position.

The Symphony application supports full P25 functionality to provide the dispatcher with all the features necessary to successfully dispatch on the system. Symphony can control a mix of up to 1024 different talkgroup modules, individual call modules, conventional base station modules, paging modules, I/O modules and specialized request-to-talk and radio status message workflow management modules. Symphony provides an instant recall recorder that can be configured to provide up to 24 hours of call history. The Symphony feature set is highly customizable with the use of value-added feature licenses.

Figure 26 shows a sample of the Symphony console’s user interface. The display screen is composed of panels and communications modules that provide dispatchers system status at a glance. The panels appear on every page of the display, and their contents do not change from page to page.

Communication modules, on the other hand, are linked to specific pages of the display. Thus, when you switch from page to page, the panels will remain the same and the communication modules will change.

The Symphony Console comes with several standard features that enable a dispatcher to perform their functions efficiently.

Figure 27. Symphony Standard Features

FEATURE NAME	FEATURE EXPLANATION
Select and Unselect Modules	Any programmed module can be selected as the select module for direct communications from the dispatcher. Other programmed modules will be the unselect modules.
Emergency	The consoles are equipped to both declare and clear an emergency. When an emergency is declared from a radio unit, there is both an audible and visual indication on the module. The audible indication is in the form of an alert tone. The visual indication involves both changing the color of the module to "red", as well as the text "EMER" displaying on the module. The console can be set up, so a dispatcher can clear the alarm, to stop the noise and then service the emergency.
Alert Tones Marker Tone	Pulsed, warbled, and continuous alert tones are standard and can be transmitted to alert radio units of specific emergency conditions. Custom alert tones may also be created if desired.
Individual Calls (Selective or Unit-to-Unit Calls)	In a trunked radio system, the console is treated like any other unit and has a unit ID. The console can both make and receive I-Calls. The I-Call panel and I-Call Manager panel under the Special Calls menu assist with several features associated with making and receiving I-Calls.
Intercom Call	Allows two-way personal console-to-console communications.
Call History	Displays the last five select and unselect module call history.
Extended Call History	Displays the last hundred select and unselect module calls and other programmed module calls.
Patch	Modules patched together can communicate with one another.
Simulselect	Dispatcher can communicate to the modules simulselected but the communications resources represented by the modules cannot communicate with one another.
Cross-mute	Reduces unnecessary receive audio at the local console by preventing transmissions from other consoles from being heard and prevents audio feedback problems when two or more consoles are placed in close proximity and at least one is equipped with speakers.
Call Director Interface	Symphony dispatch console can be connected to an external "Call Director" device for telephone interconnect operations. Using this device, standard telephone lines can be accessed by the dispatcher and either used for standard telephone call operations or patched to radio entities in the radio system.

Additional Features

ALARMS

Each dispatch console provides SNMP traps that trigger indications and alarms on the Regional Network Manager. The SDP provides support for local I/O (dispatch center access control, light trees, etc.) and remote I/O. Using the optional Remote I/O feature, the Symphony can monitor alarm and fault status for potentially hundreds of pieces of equipment across the network or provide access control at remote sites.

BASE STATION CONTROL

The Symphony Dispatch Console supports conventional base station control with special modules. This allows dispatch communications with the conventional radio units operating on the respective conventional base station equipment interconnected to the VIDA system via the Interoperability Gateways. In addition to the basic ability to transmit on conventional channels, the Symphony Dispatch Console provides conventional base station control functions, including standard remote-control functions normally performed by a conventional base station remote controller. Selecting the desired transmit frequency from a Tn/Rn base station module occurs by scrolling through the listed channels via up/down arrows on the base station module.

CONSOLE PATCHING AND ADMINISTRATIVE DYNAMIC REGROUPING CONSIDERATIONS

The console's Patch feature allows trunked talkgroups and/or conventional channels to be connected as one common communication entity. When groups and/or channels are patched, they are considered to be "in" an active Patch. Patched groups essentially become one talkgroup when the Patch is active.

The Symphony console can be licensed for up to 16 patches active at one time (current offer includes 8 simultaneous patch activations). Each patch can be created, activated when needed, and deactivated. Each Patch can consist of up to 15 patchable entities. Each console can be licensed to store up to 32 Patch definitions. Consoles and individual radio units cannot be patched. A patch will become operational momentarily after activation.

Somewhat similarly, but at the individual user level, Dynamic Regrouping allows the authorized UAS administrator to reassign radio users in various Talk Groups to a predefined Talk Group, enabling the radio users to communicate with an "ad hoc" collection of other users. For example: connecting selected police, fire, and rescue units during a natural disaster. Typically, Regroup "Plans" are administratively defined and then, later, executed. Shortly after execution, the plan becomes available, once the regrouping information is sent to the Voice Network Interface Controller (VNIC) and to all members.

Since Dynamic Regrouping works at the individual user level, it inherently targets a scope smaller than that of console patching.

LOGGING RECORDER

L3Harris has included an optional Exacom logging recorder solution to address the recording requirements for the project, which matches Granbury. The Exacom solution will provide a recording system that is easy for users to navigate, that is secure as it is aligned with L3Harris cyber security policies and will remain up to date in terms of patching via the L3Harris SUMS process and server. This combination provides a recording solution that is not just secure and compatible with L3Harris now but will remain secure and compatible in the future as well. The optional Exacom recorder solution is fully backed and support by L3Harris and Exacom support teams.

Overview

Exacom, L3Harris' preferred logging recorder vendor, is pleased to provide this proposal for the Erath County project recording system as we understand the requirements as discussed with L3Harris and outlined in our quote. This design provides a solution approach that is fault tolerant and features redundant servers with hot swappable power supplies and Raid 5 hard disk storage. It is important to note that the recording system will feature the latest Exacom HindSight 4 recording software. The combination of their latest software, along with the Dell hardware will support the current requirements as well as accommodate future optional upgrades that will support additional functionality and technology such as Quality Assurance and screen capture options for example. Exacom systems have been deployed in many mission critical public safety, government and military projects with L3Harris. One example of a large, multi-location recording system provided with L3Harris would be the City of Chicago's Office of Emergency Management and Communications. The OEMC was founded in 1995 and is responsible to coordinate the City's delivery of police, fire, emergency medical resources to 911 calls.

With more than 30 years of experience, Exacom is a leading provider of multimedia (analog, RoIP, VoIP, text /SMS, and screen capture) logging/recording solutions across public safety, government, DoD, energy, utilities, transportation, and security applications. Their distributed recording capabilities enable some of the most flexible and all-encompassing recording solutions in the industry. Exacom's unique architecture also allows for a single recording platform to be securely shared between different organizations in a way that makes each organization feel like they have their own recorder. With thousands of recorders installed across the world, their solutions are proven to exceed the demanding needs of today's complex and rapidly advancing mission-critical environments.

This proposal addresses typical customer needs for the latest technology related to multimedia recording, specifically for P25. The Exacom solution will meet the current requirements as well as accommodate future upgrades to support new features and technology such as Quality Assurance and screen capture.

Like L3Harris, Exacom is customer-focused and demonstrates this with the investments they have made in supporting those customers. With a base of regional Exacom employees throughout the United States and Canada, they provide regional support to L3Harris and their customers. Exacom also provides an industry-leading lifecycle management program that supports users for the long-term through software assurance, hardware warranty, software patches, and planned hardware and software refreshes. As a part of this program, and because of Exacom's partnership with L3Harris, Exacom keeps customers problem-free with proactive support as L3Harris upgrades and updates the radio system.

Figure 1. A screenshot of Exacom's HindSight 4 platform.



Exacom recording systems have been deployed in many mission critical public safety, government, and military projects with L3Harris during their partnership of more than 18-years. Both companies share a dedication to technology innovation, reliability, and creating the best possible experience for Erath County.

Erath County Recorders Configuration

Exacom has provided a solution based on redundant, 84-channel recording servers (Dell T-640), to be installed in the Erath County Sheriff's Office. The logging recorder is configured with the following channels:

- > 12 IP channels for L3Harris P25 audio and data for both encrypted and non-encrypted talk paths as well as Interop channels, all via the L3Harris VIDA Network Switching Center (NSC).

Client Access

The HindSight 4 client software provides the ability to search, playback and save P25 and phone calls. This includes the ability to search by all available P25 associated data and any phone related data. The HindSight 4 software will assist with incident recreation through the playback of radio calls for replay of the incident. It is important to note that recording access will be administered and governed by the local system administrator and users will have permissions and access provided by the system administrator. The client access will be provided to all users as determined by the Erath County Administrative contact. Two (2) client licenses are provided per recording server so that two users can access recordings from each system. Additional concurrent client access can be provided by the Erath County administrative contact; however, the limit of two concurrent users per server will remain until additional licenses are purchased.

Exacom Company Description

Exacom is a leading provider of multimedia (analog, RoIP, VoIP, text/SMS, screen video capture, IoT sensors and more) logging recorder solutions across public safety, government, Department of Defense, energy, utilities, transportation, and security applications. As an American-owned and operated company, all Exacom's solutions are designed, created, and supported in the United States.

Their range of recording solutions and deployment options allow customers to satisfy their most complex requirements, including geographically distributed and mobile locations. As customer needs change, Exacom's IT-friendly offerings are scalable and easily maintained, with 100% software-enabled recording, web browser access to recordings, Dell COTS hardware, and flexible deployment options like virtual and cloud.

Figure 28. Exacom has regional personnel based in Dover, DE, Chicago, IL, Dallas, TX, Chico, CA, Warwick, RI, Melbourne, FL, Tampa, FL, and Montreal, Quebec.



Over the past 35 years, Exacom has grown to become a leading provider of mission critical multimedia recording systems for public safety, homeland security, Department of Defense, utilities, transportation, and commercial applications. As a major player in the industry, Exacom is actively engaged as a solutions provider in support of APCO-P25 and NENA NG911 i3 initiatives and as a member of iCERT and the L3Harris Technologies Mission Critical Alliance.

Enhanced System Redundancy and Resiliency

NETWORK REDUNDANCY

To meet the City’s need for redundant links between the NSC cores and the Symphony Consoles, L3Harris shall included dual routers and switches at Dispatch and to further harden the overall system reliability.

VIDA NETWORK RELIABILITY MATRIX

Figure 29 shows possible failure modes of the P25 systems, the effects of those failures, and backup plans to mitigate the effect of the failure.

Figure 29. P25 Radio Sites Failure Scenarios

SYSTEM COMPONENT	FAILURE TYPE	EFFECT	BACKUP PLAN	RECOVERY PLAN
MASTR V Base Station	Complete failure of a repeater	One channel of capacity lost. User re-affiliates on their designated backup channel.	NONE REQUIRED System continues to operate normally with fewer channels.	Repair or replace failed component part or unit. System automatically returns to normal operation when failure corrected.
Site Access Router (SAR)	Complete failure of one unit	System continues to operate normally. Both site access switches are connected to primary and redundant routers.	NONE REQUIRED	Repair or replace failed unit.
Site Access Switch (SAS)	Complete failure of one unit	System continues to operate normally. Both site access switches are connected to primary and redundant routers.	NONE REQUIRED	Repair or replace failed unit.
Symphony Dispatch Console	Complete failure of unit	Loss of one dispatch position	All other Symphony positions remain fully operational. Dispatcher can move to another position or use back up control station radio.	Repair or replace failed component part or unit

CYBERSECURITY SOLUTION

The GRRN VIDA Network Switching Center (NSC) has a baseline of VIDA security features. These features are listed below.

Baseline VIDA Security Features List

Our cybersecurity products consist of hardware, software and/or service elements. Some of the products require ongoing maintenance services to provide their full benefit.

- > Access Control
- > Centralized User Management
- > Malware Protection
- > Host Intrusion Detection
- > Automated Patch Management
- > Boundary Defense
- > Network Isolation
- > Centralized Time Reference
- > Disaster Recovery

Baseline VIDA Security Features

Every VIDA system includes the following features.

ACCESS CONTROL AND CENTRALIZED USER MANAGEMENT

Windows Active Directory (AD) controls access to the GRRN radio network. This centralized service performs user and device authentication and authorization across the network, eliminating the need to manage individual user accounts on every device on the system.

Figure 30. Layered Defense Strategy

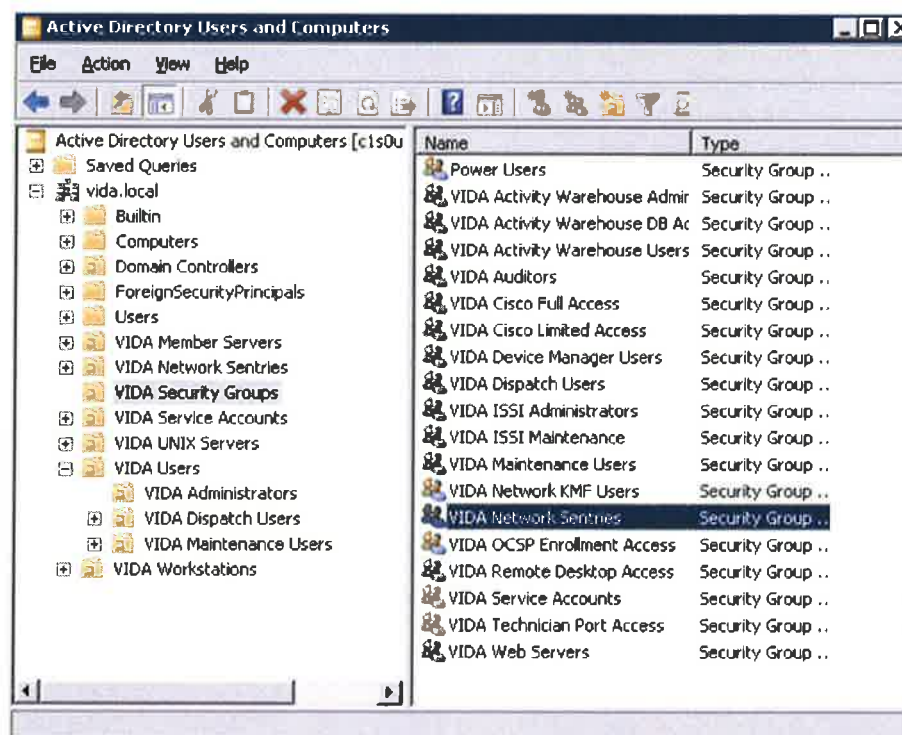
Layered defense cybersecurity practices provide resilient LMR operations while minimizing failure and intrusions.



AD authentication extends to UNIX servers with the integration of One Identity Authentication Services UNIX agents, and to networking devices (i.e. Cisco) through the remote authentication dial-in user service (RADIUS). Redundant virtual servers on the VIDA Application Server (VAS) in the VIDA Network Switching Center (NSC) host the Active Directory to provide service availability.

Active Directory security groups allow administrators to create role-based accounts to enforce the concept of “least privilege”. This provides users only the access necessary to complete their assigned tasks. Figure 31 shows examples of security groups and roles pre-configured in the GRRN system Active Directory.

Figure 31. Active Directory Security Groups and Roles



MALWARE PROTECTION AND HOST INTRUSION DETECTION

McAfee Endpoint Security will protect GRRN’s and Erath County’s servers and workstations. McAfee Endpoint Security is an integrated security platform, combining antivirus, reputation, and heuristics with cutting-edge machine learning containment and host intrusion detection system (HIDS) functions in a single platform agent. McAfee’s ePolicy Orchestrator® (ePO) centrally manages it. ePO provides end-to-end visibility and automations that reduce incident response times and strengthen protection. The ePO server is a virtual machine running on the VIDA Application Server in the primary NSC. Management of the ePO server is via access to the secure ePO management web page from any system management terminal on the GRRN radio network.

AUTOMATED PATCH MANAGEMENT

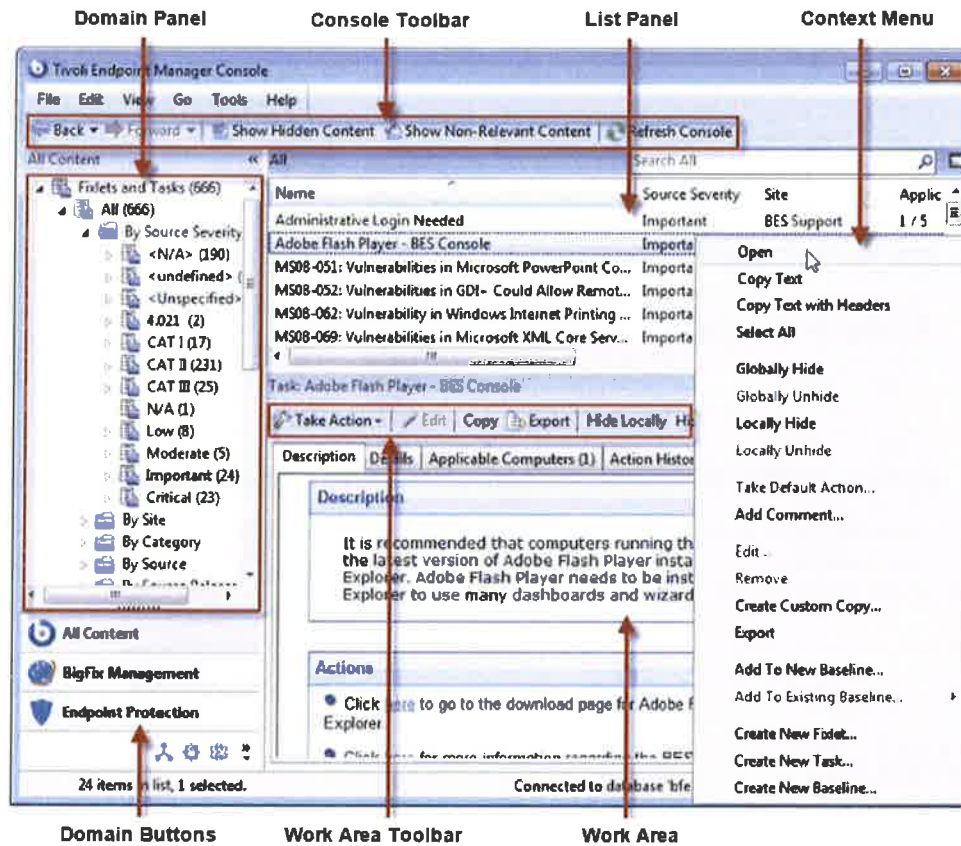
Ongoing protection of the system is necessary, as new and different threats may emerge. Since many malware attacks and exploits target known software defects, it is essential to deploy security patch updates to the network in a timely fashion. The Security Update Management Service (SUMS) Automation Server in the GRRN NSC makes this task easier to manage by automating update distribution. The SUMS Automation Server is one of the virtual machines running on the VIDA Application Server in the primary VIDA NSC.

Security patch updates are pre-validated and regularly provided through an optional subscription service from L3Harris called the SUMS. For more details on this optional service, see Figure 32 and Figure 33. Note: this system includes a one-year subscription to SUMS.

GRRN radio system administrators start the automated distribution by loading the SUMS release media in the SUMS Automation Server using the SUMS Endpoint Manager Console. SUMS Agents loaded on each supported device then pull the patches from the SUMS Automation Server. The automated process can pause, stop, or reverse as required.

Figure 32. SUMS Endpoint Manager Console

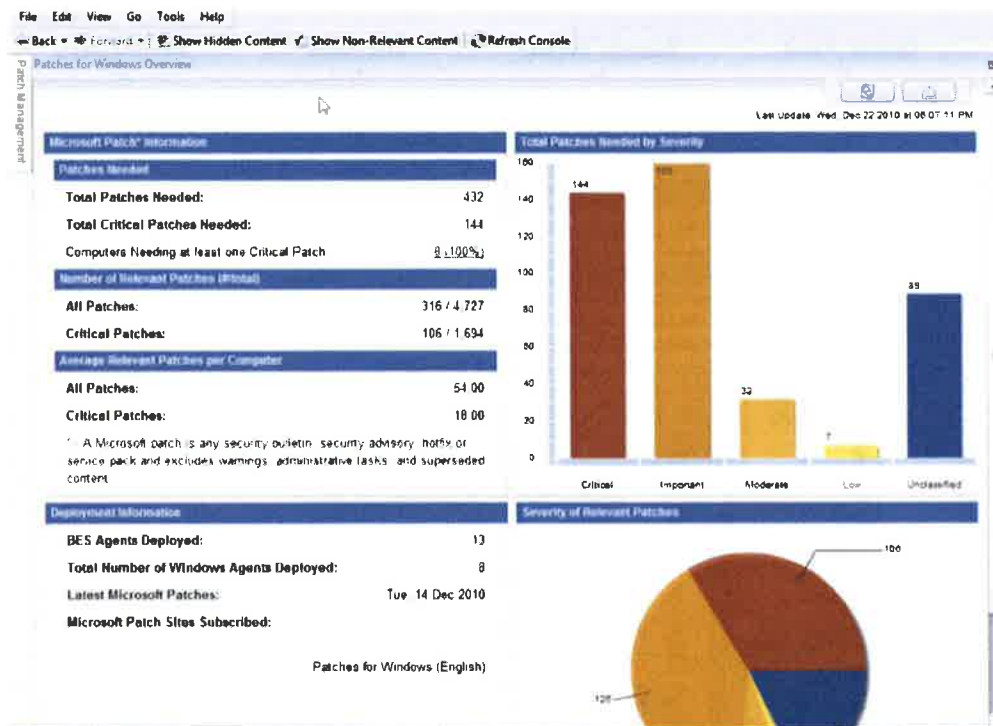
The SUMS Endpoint Manager Console allows centralized management of GRRN system patch distribution



After applying all patches, the system administrator can minimize impact to radio system users by scheduling the reboot of host endpoints directly from the SUMS Endpoint Manager Console. System administrators can monitor and control the patch distribution process via the secure web-based SUMS Dashboard. The SUMS Dashboard is accessible by any authenticated administrator from any System Management Terminal on the GRRN radio system network.

Figure 33. SUMS Dashboard

The SUMS Dashboard provides GRRN system administrators patch reporting



FIREWALLS

The GRRN system includes Cisco Firepower firewalls running Firepower Threat Defense software to control access and maintain the integrity and security of the network and connected devices. Specifically, Cisco Firepower Regional Firewalls (RFWs) secure the internal enclave boundaries encompassing the Primary and Secondary VIDA Cores. They restrict unauthorized network access, detect, prevent, and respond to network attacks, enforce policies, and integrate high-performance security features such as state awareness and application filtering. To secure RF sites and dispatch centers, the routers at these locations incorporate Zone-Based Firewall (ZBFW) support to provide a comprehensive endpoint firewall.

To secure communications external to the GRRN network, specifically supporting Inter-RF Subsystem Interface (ISSI), BeOn and remote access, a Firepower Internet Firewall (IFW) will monitor and control communications at the external boundary of the system. GRRN authorized employees and contractors will access internal radio system network resources using the Cisco AnyConnect Secure Mobility Client. Connecting via AnyConnect requires authentication with valid radio system Active Directory credentials. Adding the optional two-factor authentication can further enhance authentication. Once connected, SSL or IPsec IKEv2 encryption secures all traffic, and the firewall and network intrusion detection system inspect all traffic.

NETWORK ISOLATION

The radio system network incorporates Virtual Local Area Networks (VLANs), which enable traffic separation and shaping of the network. In addition, they allow network implementation and optimization to proceed in a highly managed and controlled manner. Access Control Lists (ACLs) between VLANs isolate and partition trunked system traffic transport from other support network traffic. This ensures that a security breach in the support network equipment does not impact the dedicated capacity for call processing.

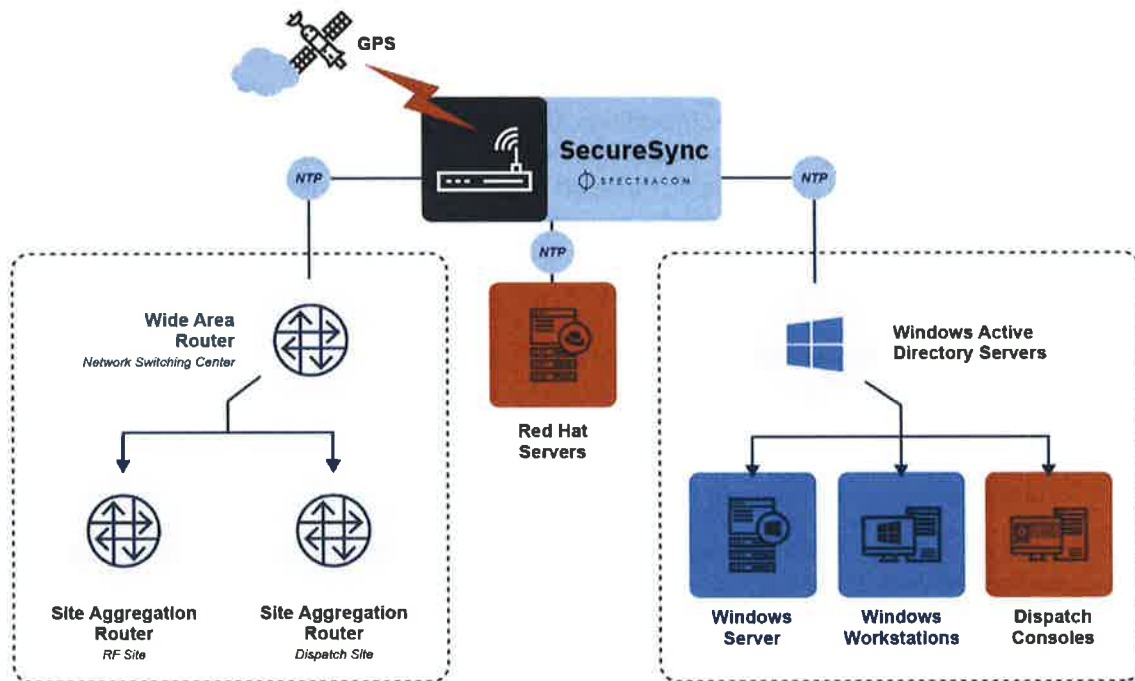
VLANs include:

- > Traffic VLAN, which handles all voice, data, and call signaling
- > Management VLAN, which supports administration and management servers
- > Backbone management VLAN, which supports management of routers and switches and does not appear on any switch ports
- > Security VLAN for firewall, Network Intrusion Detection & Prevention (IDS/IPS), management traffic, and centralized logging
- > Remote management communications VLAN
- > Loghost local VLAN, which provides communication between two Network Switching Servers (NSSs) in a high availability configuration
- > Technician VLAN, which enables maintenance of the network
- > Peripheral VLAN used to support customer-supplied equipment
- > Bit bucket VLAN, which is the destination for nonradio system packets that enter the radio network

All switch ports configure with 802.1X authentication or MAC address filtering, through the implementation of Cisco Port Security, with dynamically learned sticky MAC addresses.

CENTRALIZED TIME REFERENCE

A centralized time reference capability is critical to accurately synchronize system, log, and event recordings, facilitating data analysis and evaluation. Stratum-1 GPS-based Spectracom SecureSync® time reference systems are installed in each NSC. The time reference in the active HA NSC serves as the time reference for the entire system. The NSC Wide Area Router (WAR) synchronizes directly from the SecureSync as its primary clock source. Windows Active Directory servers and Linux servers also obtain time directly from the SecureSync. All other Windows based devices obtain time from Active Directory. The Site Aggregation Routers (SAR) at the radio and dispatch sites synchronize time with the WAR. The Spectracom SecureSync in the inactive NSC is a secondary clock source so that the capability does not reduce even if one is completely lost.



DISASTER RECOVERY (BASELINE)

Best-practice recommends backing up critical data using the “backup-in-depth” approach. L3Harris can provide layers of backups (e.g., local, facility, and disaster) sequenced so that recent local backups are available for immediate use and secure backups are available to recover from a massive security incident. A mixture of backup/restore approaches results in securely stored and appropriately accessible backups.

There are several backup strategies incorporated in the GRRN radio system design that protect system data from partial or catastrophic malfunction at any of the system site or node.

Device Data

The VIDA Device Manager is a Windows®-based application that facilitates the loading of code updates and personalities to many devices throughout the VIDA network. It maintains information in databases, facilitating the gathering of historical activities, validation checking, and the secure storage of data. As personalities populate in the VIDA Device Manager, the Repository automatically creates and stores historical versions.

The Repository maintains a history of activities performed upon devices, personalities, and code instances. History viewers facilitate browsing activities per device, personality, code instance, or all events within a specific time period. Supported devices include:

CNM	NWS
Console (Maestro IP and VIP) RNM	RNM
CSM RSM	RSM
eData Gateway RSM Pro	RSM Pro
Encompass Gateway	Site Management Interface (SMI)
ISSI Gateway	SiteLink SP
MASTR® III DSP Module	SiteLink TC
MME	SitePro P25
Network KMF	P25 SitePro P25 Conventional
Unified Audio Card (UAC)	P25 Conventional Subscriber Units (Terminals)
VNIC	Transcoder

VIDA Device Manager and its associated database repository resides on a virtual system running on the VIDA Applications Server, allowing the enterprise backup solution to archive this data.

Virtual System State

The VIDA Application Server uses snapshot imaging to capture state, data, and hardware configurations of a running virtual machines. Snapshots, taken manually, provide a fast and easy way to revert the virtual machine to a previous state. Having an easy way to revert a virtual machine can be very useful the system administrators need to recreate a specific state or condition to troubleshoot a problem. This is particularly useful when upgrading software or diagnosing a problem.

Replication

For networks configured for Location HA, vSphere Replication provides a storage-agnostic and workload-agnostic solution that periodically, and asynchronously replicates over the IP-based network, typically to a remote site for disaster recovery.

Centralized Enterprise Backup

Unitrends Recovery-Series Disk-to-Disk Backup Appliances are available as an option for centralized enterprise data backup.

SUBSCRIBER RADIO

Portable and Mobile Subscriber Overview

L3Harris is proud to offer the XL-200 series of portable and mobile radios for public safety operations. These series of subscribers were designed with First Responders in mind. They deliver crystal-clear audio with advanced noise cancellation technology, intuitive ease of use, rugged performance that meets MIL-STD-180G compliance and more ways to connect. They also feature an intuitive interface and high-visibility color display, allowing users to stay more focused on the job, less on the radio. A modular design also offers flexible mounting configurations for a variety of vehicles. The XL series connects in more places and comes standard with Wi-Fi®, Bluetooth® and GPS.

All radios are software-definable and configurable to match Erath County's mission and needs. In addition, every L3Harris P25 radio model has successfully passed the Compliance Assessment Program (CAP) established by the Department of Homeland Security to ensure radio compatibility among P25 vendors.

Some of the key benefits and features the XL series of radios include:

- > P25 Phase 1, Phase 2, and analog FM (narrowband and wideband)
- > LTE-capable and ready for public safety broadband networks, and broadband hotspot capable
- > Multiple encryption options (DES, AES, single-key, multi-key, and OTAR)
- > Connects in more places with Wi-Fi® and Bluetooth®.
- > Optional in-band GPS, which allows the subscriber units to send location data embedded within voice packets, during subscriber PTTs. This allows for GPS tracking without the need for a dedicated GPS data channel, while maintaining GOS.
- > Ruggedized to MIL-STD-810G standards for tough conditions.
- > Loud and clear audio with advanced noise cancellation



XL-200P



XL-200M

XL Portable Radios

XL Series portable radios provide the advanced connectivity that first responders require while addressing evolving voice and data communications. XL portable radios support P25 Trunking, P25 Conventional, analog conventional, and BeOn® operation over a Wi-Fi® or LTE network.

Built on a rigid metal I-beam frame, this family of radios is engineered for top performance in severe environments. As if meeting the tough MIL-SPEC standards IP68 and MIL-STD 504.1 were not enough, these portables are also ruggedized to meet MIL STD 504.1 for contamination by fluids and MIL-STD 511.4 for flammability. The intuitive and easy-to-use XLP radios also feature an A-B-C-D switch that's easy to operate while wearing gloves, plus front and top LCD displays—all packaged in a slim, ergonomically contoured shape. Plus, their 10-hour battery lasts all shift long.

In addition to being compliant with the TIA-603-D and TIA-102.CAAB-D recommendations, L3Harris subscriber radios are capable of secure authentication by the radio system.

Combining a 1.5/4.0-watt max amplifier and dual speakers with advanced noise cancellation, the XLP radios deliver clear, loud audio in a wide range of challenging environments. In addition, Bluetooth integration with leading firefighting Self-Contained Breathing Apparatus (SCBA) improves in-mask audio and quality of communications on the fireground.

Figure 34. XL Series of Portables



XL-200P PORTABLE RADIO

XL-200P portable radios provide the advanced connectivity that first responders require while addressing evolving voice and data communications. They meet MIL-STD-810G for durability and are certified to more stringent MIL-STD parameters for contamination by fluids and explosive atmospheres. XL portable radios support P25 Trunking, P25 Conventional, analog conventional, and BeOn® operation over a Wi-Fi® or LTE network.

The XL-200P is a P25 converged, multiband Land Mobile Radio with optional broadband LTE. Designed for anyone who needs to communicate with multiple agencies or across multiple bands, the XL-200P delivers mission-critical connectivity.

Key Benefits

- > Multiband, LTE-capable, P25 radios
- > Built-in Wi-Fi®, Bluetooth® and GPS
- > Advanced data sharing
- > Secure voice and data encryption
- > Crystal clear audio with advanced noise cancellation
- > Built to operate in harsh conditions
- > Long battery life
- > Intuitive and easy to use
- > Ergonomic, glove-friendly design

Figure 35. XL-200P Portable Radio Controls



XL-200P Portable Radio Specifications

Please refer to the XL-200P product datasheet

XL-200P Portable Radio Feature Matrix

Figure 36. XL-200P Portable Feature Matrix

FEATURE DESCRIPTION		XL-200P FEATURE AVAILABILITY	
GENERAL FEATURES			
Frequencies (MHz)	VHF	136-174*	
	UHF	378-522*	
	700	768-776	
		798-806*	
	800	806-816	
		851-861*	
<i>*XL-200P provide VHF, UHF, and 700/800 MHz frequencies in one radio. The portable also provides 763-776, 793-806, 806-825, and 851-870 MHz frequencies for International use.</i>			
Display	Top multi-color backlit, sunlight-readable display; Front color LCD		
Radio Name on Front Display	Standard		
Volume On/Off Control Knob	Standard		
16-Position Group/Channel Select Switch	Standard		
Programmable Function Keys (Side)	3		
Programmable 2-position Top Switch	Standard		
Programmable Top Switch	Standard, 4-position (A, B, C, D)		
Emergency/Home Button (Top)	Standard		
Programmable Option Key (Front)	Standard, 3 labeled soft keys		
Keypad	Full or Partial		
Keypad Lock/Unlock	Standard		
Keypad Ramp/Wrap	Standard, 4 cursor control keys		
Programmable Menu	Standard		
Low Battery Alert Tone & Display Icon	Standard		
Programmable Bandwidth – Narrowband or Wideband per channel or system	Standard		
Intrinsically Safe or HAZLOC Certification	Optional – UL approved for use in the U.S. in Class I, Division 1, Groups A, B, C, and D hazardous locations. Also, UL approved for use in the U.S. and Canada in Class I, Division 2, Groups A, B, C, and D hazardous locations.		

FEATURE DESCRIPTION	XL-200P FEATURE AVAILABILITY
Immersion	1m for 30 min (Standard); 2m for 4 hrs (Optional)
GPS	Standard
Noise Suppression	Standard, 3 mics
Bluetooth® Wireless Technology	Standard
Motorola KVL-3000+/4000 Keyfill	Optional
P25 TRUNKING FEATURES	
Group Calls	Standard
Announcement (Agency/Fleet) Group Calls	Standard
Individual Calls/Private Calls	1,024
Mute Audio until “Wake-up” Page	Standard
Telephone Interconnect Calls	Standard
All Calls/Broadcast Calls	Standard
Calling Unit ID Display	Standard
Talkgroup ID Display	Standard
Data Tx/Rx Indication on Display	Standard
Caller ID (Assign Alias)	Standard
Color Tagging of Talkgroups	Standard
Auto Login	Standard
Registration/Authentication	Standard
VIDA ID	Optional
Multiple SSIDs	Standard
Console Patch/Simulselect Support	Standard
Remote Radio Enable/Disable	Standard
Radio Unit Monitor	Standard
Carrier Control Timer	Standard
Link Layer Authentication	Optional
Home Group	Standard
Multi-Group Feature ¹	Standard
Group Scan	Standard
Priority Group Scan	Standard
Programmable CC Scan Delay	Standard
P25 Trunked/Conventional Scan	Standard

FEATURE DESCRIPTION	XL-200P FEATURE AVAILABILITY
Dynamic Regroup	Standard
Status Message	Optional
Radio TextLink	Optional
ProFile™ (OTAP)	Optional
ProScan™ and Priority System Scan (Roaming)	Standard
Wide Area System Scan (Roaming)	Standard
P25 Conventional Fallback/MS Failsoft	Optional
Audible Failsoft Indication	Standard
DES-OFB Encryption	Optional
Single-key DES	Standard – no charge
Single-key AES ²	Standard – no charge
AES Encryption (256-bit)	Optional
AES Key Capacity to 128 Keys	Standard
Key Store/Encryption per System	Standard
Encryption Lite ³	Standard – no charge
FIPS-140-2 and FIPS-197 for AES Encryption	Optional
Mixed Key Encryption	Optional
Audio Tone on KVL Key Load	Standard
Keyset Names from KVL	Standard
RED Store and Forward from KVL	Standard
Project 25 Over-the-Air Rekeying (SCEP OTAR)	Optional
Project 25 Over-the-Air Rekeying (SNDP OTAR)	Optional
P25 Common Air Interface(CAI)	Standard
Project 25 Data	Optional
P25 Personality Lock (PL)	Standard
P25 Phase 2 Upgradeable	Optional
Inter-RF Subsystem Interface (ISSI)	Standard
ISSI WACN Auto-Roaming	Standard
Virtual Sites	Standard
3000 Aliases	Optional
Site Alias/Site Lock	Standard
Voice and Data on Control (VDOC)	Standard
Enhanced Vocoder (AMBE+2™)	Standard

FEATURE DESCRIPTION	XL-200P FEATURE AVAILABILITY
RF Safe Mode (100 mW)	Optional
GPS Position Update	Standard
PPP/SLIP	Standard
Tier 2 Triggers	Standard
In-Band GPS	Optional
GPS Adapter	Standard (Internal Module)
Stealth Mode	Standard
Voice Playback	Standard (Last 5 Calls)
Voice Annunciation	Standard
eData	Optional
HVD TDMA	Optional
HVD FDMA	Standard
Bluetooth® Integration with SCBA	Standard
P25 Linear Simulcast	Standard

¹Motorola's form of Announcement group.

²Single-key AES is free of charge but must be ordered.

³Allows communication with commonly available ARC4 encrypted radios using a 40-bit key.

P25 CONVENTIONAL FEATURES

No. of Conventional Channels	12,500 (1,250 per mission file)
Standard No. of Systems/Groups	1,024
Up to 1,024 System/Group Combinations	Standard
250 Zones	Optional
Zones in Single-Band Radio	Standard
Mixed Zone Scan	Standard
Noise Cancelling Algorithm with Echo Cancellation	Standard
Programmable Bandwidth – 12.5 kHz NB or 25/30 kHz WB per channel or system	Standard
Low Power Transmit	Standard
Emergency Calls	Standard
Group Calls	Standard
Individual Calls/Private Calls	Standard
Mute Audio until "Wake-up" Page	Standard
All Calls/Broadcast Calls	Standard
Calling Unit ID Display	Standard

FEATURE DESCRIPTION	XL-200P FEATURE AVAILABILITY
Talkgroup ID Display	Standard
Color Tagging of Talkgroups	Standard
3000 Aliases	Optional
Caller ID (Assign Alias)	Standard
Unit Registration	Standard
Data Registration	Standard
Remote Radio Enable/Disable	Standard
Carrier Control Timer	Standard
Home Group/Channel	Standard
Channel Scan	Standard
Priority Channel Scan	Standard
Status Message	Optional
ProFile™ (OTAP)	Optional
DES-OFB Encryption	Optional
Single-key DES	Standard – no charge
Single-key AES**	Standard – no charge
AES Encryption (256-bit)	Optional
AES Key Capacity to 128 Keys	Standard
Key Store/Encryption per System	Standard
FIPS-140-2 and FIPS-197 for AES Encryption	Standard w/AES Encryption
Audio Tone on KVL Key Load	Standard
Radio Check	Standard
Project 25 Over-the-Air Rekeying (OTAR)	Optional
Project 25 Data (Radio to Fixed Network Equipment)	Optional
P25 Personality Lock (PL)	Standard
Enhanced Vocoder (AMBE+2™)	Standard
Vote Scanning	Optional
Stealth Mode	Standard
GPS Adapter	Standard (Internal Module)
PPP/SLIP	Standard
Voice Playback	Standard (Last 5 Calls)
Voice Annunciation	Standard
Bluetooth Integration with SCBA	Standard

FEATURE DESCRIPTION	XL-200P FEATURE AVAILABILITY
P2S Linear Simulcast	Standard
<i>**Optional single-key AES is free of charge but must be ordered.</i>	
ANALOG CONVENTIONAL FEATURES***	
No. of Conventional Channels	12,500 (1,250 per mission file)
250 Zones	Optional
Zones in Single-Band Radio	Standard
Mixed Zone Scan	Standard
Noise Cancelling Algorithm with Echo Cancellation	Standard
Programmable Bandwidth – Narrowband or Wideband per channel or system	Standard
Caller ID (Assign Alias)	Standard
Direct Frequency Entry	Standard
Low Power Transmit	Standard
Channel Guard (CTCSS)	Standard
Digital Channel Guard	Standard
Scan	Standard
Dual Priority Scan	Standard
Channel Busy Lock-Out	Standard
5-Tone Signaling Encode	Standard
Type 99 Encode/Decode	Standard
Emergency G-STAR™ Encode	N/A
G-STAR (ANI) Encode	Future
DTMF Encode	Standard
MDC-1200	Standard
DES-CFB/12 kbps CVSD Mode	Optional
Stealth Mode	Standard
Voice Annunciation	Standard
Voice Playback	Standard (Last 5 Calls)

****All portables include Analog Conventional operation.*

XL MOBILE RADIOS

XL-200M Mobile Radios

The multiband XL-200M delivers crystal-clear audio with advanced noise cancellation technology, intuitive ease of use, rugged performance that meets MIL-STD-810G compliance and more ways to connect.

The multiband XL-200M power interoperable critical communications with other agencies operating across the VHF, UHF, 700/800 and 900 MHz bands. They both feature an intuitive interface and high-visibility color display, allowing users to stay more focused on the job, less on the radio. A modular design also offers flexible mounting configurations for a variety of vehicles. They connect in more places and comes standard with Wi-Fi®, Bluetooth® and GPS. The XL-200M transforms your vehicle into an on-the-go communications hub with the addition of LTE and broadband connectivity providing hot spot capabilities that allow you to stay connected through an LMR or LTE network.

Figure 37. XL Mobile Radio



KEY BENEFITS

- > P25, open standards-based with proven interoperability
- > AT&T and Verizon Certified and FirstNet Ready™
- > Operates in the VHF, UHF, 700/800 and 900 MHz bands
- > Loud, clear audio with up to 5 speaker outputs and digital microphone supporting active noise cancellation
- > Connect in more places with built-in Wi-Fi®, Bluetooth® and GPS
- > Field upgradable LTE and broadband hotspot capabilities
- > LTE connectivity transforms the vehicle into an on-the-go communications hub
- > Multiple encryption options for secure communications
- > Ruggedized to meet MIL-STD-810G standards for tough conditions

Figure 38. XL Mobile Radio Control Head Controls

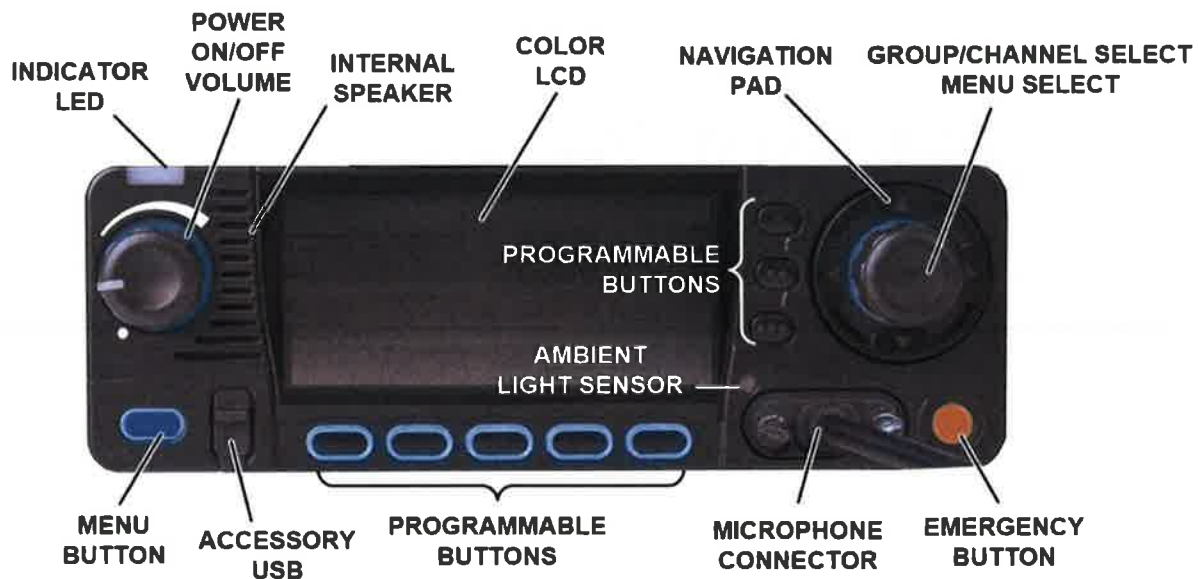


Figure 39. Noise Cancelling Standard XL Microphone



200M MOBILE RADIO SPECIFICATIONS

Please refer to the XL-200M product datasheet provided.

XL-200M MOBILE RADIOS - FEATURE MATRICES

Figure 40. XL-200M Mobile Feature Matrix

FEATURE DESCRIPTION		XL MOBILE FEATURE AVAILABILITY	
GENERAL FEATURES			
Frequencies (MHz)	VHF	136-174*	
	UHF	378-522	
	700	763-870	
	800	896-944	
	900		

**XL-200M provides VHF, UHF, 700/800 MHz, and 900 MHz in one radio. XL-200M also provides 763-776, 793-806, 806-825, and 851-870 MHz frequencies for International use.*

FEATURE DESCRIPTION	XL MOBILE FEATURE AVAILABILITY
Display	3.3-in. color LCD display, 18-bit color, 480 x 220 pixels, Visual Channel/7-Zone backlit indicator colors
Radio Name on Front Display	Standard
Remote Mount	Standard
Front Mount	Standard
Hand Held Controller (HHC)	Future
Ramp Controls	N/A
Control Units	Scan
Adjustable Backlighting	Standard
External Alarm	Standard
Keypad Control of External Speaker	Standard
Public Address	Future
Programmable Menu	Standard
Programmable Bandwidth – Narrowband or Wideband per channel or system	Standard
External Speaker	Optional
Motorcycle Kit	Future
Control Station	Optional
Multiple Control Head Support	3+ Control Heads
WiFi® Programming over Control Head	Standard
Dual Control	N/A
GPS	Standard
GPS Data over USB Interface**	Standard
Noise Suppression (Dual Microphone)	Standard
Bluetooth® Wireless Technology	Standard
Motorola KVL-3000+/4000 Keyfill	Future

***This standard feature requires the third-party application "GPS over USB Tool for XL Radios" (media kit number 14004-0276-xx) to process the GPS information originating from the XL mobile.*

P25 TRUNKING FEATURES

Standard No. of Systems/Groups	1,024+
Up to 1,024 System/Group Combinations	Standard
250 Zones	Optional
Zones in Single-Band Radio	Standard
Mixed Zone Scan	Standard

FEATURE DESCRIPTION	XL MOBILE FEATURE AVAILABILITY
Direct System/Zone Entry	Standard
User Presets for System/Group or Zone/Channel Assignment	Standard
Programmable Bandwidth – Narrowband or Wideband per channel or system	Standard
Low Power Transmit	Standard
VIDA® Provisioning	Optional
Emergency Calls	Standard
Emergency Check-in Timer	Standard
Emergency Alarm Cancel	Standard
Emergency Clear on Encrypted System	Standard
Group Calls	Standard
Announcement (Agency/Fleet) Group Calls	Standard
Individual Calls/Private Calls	Standard
Telephone Interconnect Calls	Standard
All Calls/Broadcast Calls	Standard
Calling Unit ID Display	Standard
Talkgroup ID Display	Standard
Data Tx/Rx Indication on Display	Standard
Caller ID (Assign Alias)	Standard
Auto Login	Standard
Registration/Authentication	Standard
VIDA ID	Optional
Console Patch/Simulselect Support	Standard
Remote Radio Enable/Disable	Standard
Radio Unit Monitor	Standard
Carrier Control Timer	Standard
Link Layer Authentication (LLA)	Optional
Home Group	Standard
Multi-Group Feature*	Standard
Group Scan	Standard
Priority Group Scan	Standard
Programmable CC Scan Delay	Standard
P25 Trunked/Conventional Scan	Standard
Dynamic Regroup	Standard

FEATURE DESCRIPTION	XL MOBILE FEATURE AVAILABILITY
Status Message	Optional
Radio TextLink	Optional
ProFile™ (OTAP)	Optional
ProScan™ and Priority System Scan (Roaming)	Standard
Wide Area System Scan (Roaming)	Standard
P25 Conventional Fallback/MS Failsoft	Optional
Knox Box Tones	Standard
DES Encryption (Includes Phase 2 Support)	Optional
Single-key DES	Standard
Single-key AES**	Optional
AES Encryption (256-bit)	Optional
Key Store/Encryption per System	Standard
Encryption Lite***	Standard
FIPS-140-2 and FIPS-197 for AES Encryption	Optional
Mixed Key Encryption	Optional
Project 25 Over-the-Air Rekeying (SCEP OTAR)	Optional
Project 25 Over-the-Air Rekeying (SNDP OTAR)	Optional
P25 Common Air Interface (CAI)	Standard
Project 25 Data	Optional
P25 Personality Lock (PL)	Standard
P25 Phase 2 Upgradeable	Optional
Inter-RF Subsystem Interface (ISSI)	Standard
ISSI WACN Auto-Roaming	Standard
Virtual Sites	Standard
3000 Aliases	Optional
Site Alias/Site Lock	Standard
Voice and Data on Control (VDOC)	Standard
Enhanced Vocoder (AMBE+2™)	Standard
GPS Position Update	Standard
Tier 2 Triggers	Standard
In-Band GPS	Optional
Control and Status Services	Optional
Stealth Mode	Standard

FEATURE DESCRIPTION	XL MOBILE FEATURE AVAILABILITY
Voice Playback (with Remote Mount Control Head only)	Future
Voice Annunciation	Future
Voice Recorder Support/Logging Recorder Mode	Standard
eData	Optional
HVD TDMA	Optional
HVD FDMA	Standard
P25 Linear Simulcast	Standard

¹Motorola's form of Announcement group.

²Optional *single*-key AES is free of charge but must be ordered.

³Allows communication with commonly available ARC4 encrypted radios using a 40-bit key.

P25 CONVENTIONAL FEATURES	
No. of Conventional Channels	12,500 (1,250 per mission file)
Standard No. of Systems/Groups	1,024
Up to 1,024 System/Group Combinations	Standard
250 Zones	Optional
Zones in Single-Band Radio	Standard
Mixed Zone Scan	Standard
Programmable Bandwidth – Narrowband or Wideband per channel or system	Standard
Low Power Transmit	Standard
Emergency Calls	Standard
Emergency Check-in Timer	Standard
Group Calls	Standard
Individual Calls/Private Calls	Standard
All Calls/Broadcast Calls	Standard
Calling Unit ID Display	Standard
Talkgroup ID Display	Standard
Caller ID (Assign Alias)	Standard
3000 Aliases	Optional
Unit Registration	Standard
Data Registration	Standard
Remote Radio Enable/Disable	Standard
Carrier Control Timer	Standard

FEATURE DESCRIPTION	XL MOBILE FEATURE AVAILABILITY
Home Group/Channel	Standard
Channel Scan	Standard
Priority Channel Scan	Standard
Status Message	Optional
ProFile™ (OTAP)	Optional
DES-OFB Encryption	Optional
Single-key DES	Standard
Single-key AES**	Optional
AES Encryption (256-bit)	Optional
Key Store/Encryption per System	Standard
FIPS-140-2 and FIPS-197 for AES Encryption	Standard w/AES Encryption
Radio Check	Standard
Project 25 Over-the-Air Rekeying (OTAR)	Optional
Project 25 Data (Radios to Fixed Network Equipment)	Optional
P25 Personality Lock (PL)	Standard
Enhanced Vocoder (AMBE+2™)	Standard
Vote Scanning	Optional
Control and Status Services	Optional
Stealth Mode	Standard
Voice Playback (with Remote Mount Control Head only)	Future
Voice Annunciation	Future
P25 Linear Simulcast	Standard

***Optional single-key AES is free of charge but must be ordered.*

ANALOG CONVENTIONAL FEATURES***

No. of Conventional Channels	12,500 (1,250 per mission file)
250 Zones	Optional
Zones in Single-Band Radio	Standard
Mixed Zone Scan	Standard
Programmable Bandwidth – Narrowband or Wideband per channel or system	Standard
Caller ID (Assign Alias)	Standard
Direct Frequency Entry	Standard
Low Power Transmit	Standard

FEATURE DESCRIPTION	XL MOBILE FEATURE AVAILABILITY
Channel Guard (CTCSS)	Standard
Digital Channel Guard	Standard
Scan	Standard
Dual Priority Scan	Standard
Channel Busy Lock-Out	Standard
5-Tone Signaling Encode	Future
Type 99 Encode/Decode	Standard
Emergency G-STAR™ Encode	Future
Emergency Check-in Timer	Standard
G-STAR (ANI) Encode	Future
DTMF Encode	Standard
MDC-1200	Standard – Encode, Decode, Emerg
DES-CFB/12 kbps CVSD Mode	Optional
Control and Status Services	Optional
Stealth Mode	Standard
Voice Annunciation	Future
Voice Playback (with Remote Mount Control Head only)	Feature

***All XL-200M mobiles include Analog Conventional.

XL-200M CONFIGURATIONS

The XL-200M mobile radio consist of the Vehicular Communications Hub (VCH) and a Control Head (CH). Those components can be configured multiple way depending on needs.

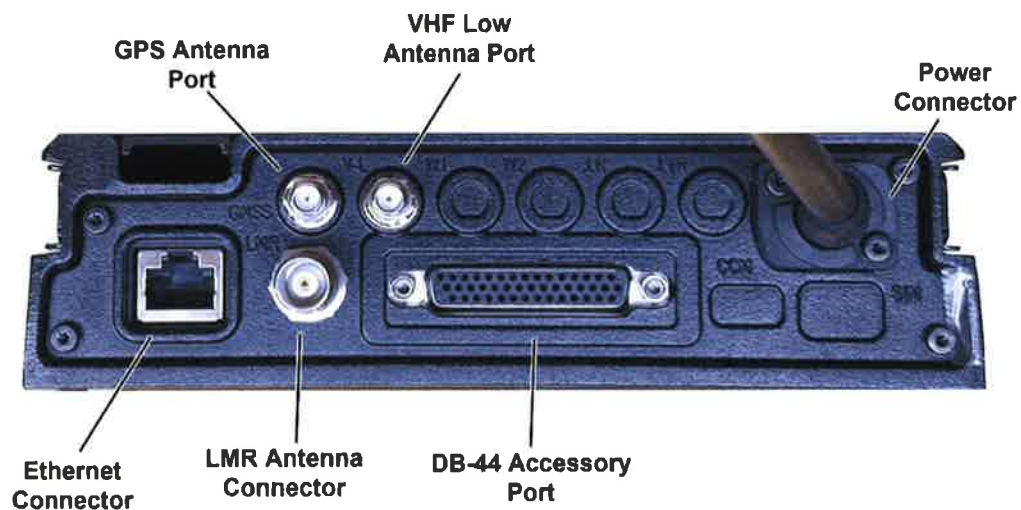
Vehicular Communications Hub (VCH)

The XL Vehicular Communications Hub (VCH) is the main radio unit in a vehicular (mobile) radio system. A major feature of the VCH design is the use of IP networks for tethering multiple radio CHs.

Figure 41. Vehicle Communications Hub (VCH)



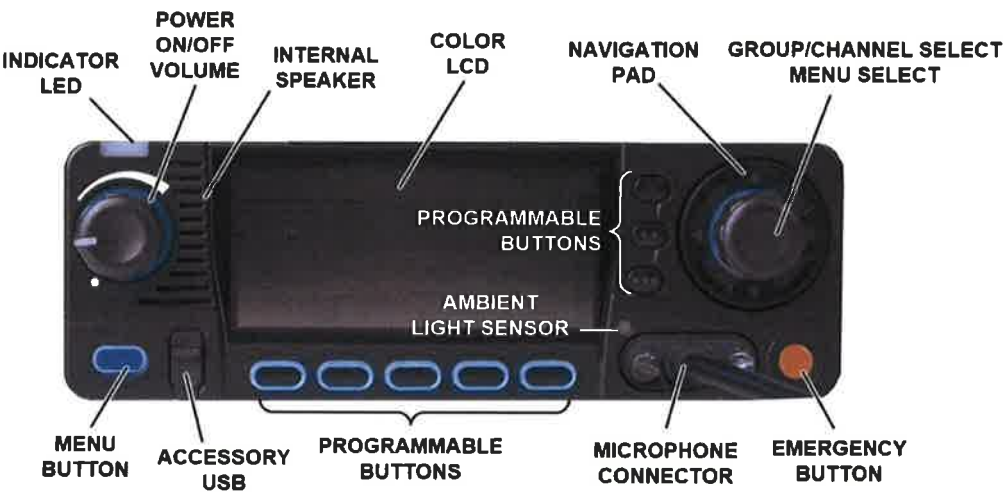
Figure 42. VCH Rear View



XL Control Head (XL-CH)

The XL Mobile Desktop Cabinet supports the addition of an XL-CH in a CH-Only, Front-Mount, or Remote-Mount configuration.

Figure 43. XL-CH Control Head Front



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VIDA Network WAN Requirements – SR10A.4 Systems and Greater

To guarantee the quality of voice through the VIDA network, all WAN links will need to strictly adhere to the requirements provided in the following sections. Conformance with these design requirements is a necessary condition for L3Harris to meet the overall performance needs of the VIDA system. All of these requirements are necessary to provide a guaranteed level of service for voice quality. Failure to adhere to these requirements could result in poor audio for which L3Harris cannot be held accountable. In the event of audio problems, L3Harris will work with the customer to determine the source of the problem. If the problem is determined to be in the customer supplied backhaul, L3Harris will be available on a contract basis to help resolve the issue.

Packet Loss Requirements

Due to the connectionless nature of UDP used in transmitting voice packets, minimal packet loss is tolerable in the VIDA network. However, *any* packet loss could result in degraded voice quality or loss of voice. L3Harris will not be held responsible for degraded voice quality that comes from the result of packet loss in the customer provided transport network.

Performance testing to be measured based on the following:

- RFC 2544 standard to be used
- Length of test per link shall be 24hrs
- Frame loss shall be less than .01%
- Out-of-Order packets shall be less than .01%

Multi-Site Jitter (One-way)

Jitter is the variability of packet delays within the same voice packet stream (talk spurt). The requirement is for the overall jitter to average near zero and to never build up to more than 60 msec one-way. Any streams with excessive jitter will be considered to have packet loss and L3Harris will not be responsible for voice quality issues.

For example, if a voice packet were 60 milliseconds late, then it would be optimal for the next few voice packets to be early to get the average jitter back to zero. This will allow the voice buffer to build back to a stable point.

For allowable Simulcast Jitter, refer to the IP Simulcast Latency and Jitter section.

Latency Requirements (One-way)

Some degree of latency, such as satellite links, can be supported within the VIDA network. L3Harris will not be held responsible for voice latency requirements if the provided WAN connection has more latency than the requirement. Any latency within the system will need to stay constant to avoid jitter. Latency requirement differ based on the site type and traffic patterns. This section defines latency requirements for Multisite to NSC, NSC to NSC, Simulcast Site to Control Point, and Control Point to NSC.

Latency is measured one-way. Asymmetric latency is permitted if one-way measurements meet specifications below. Satellite links can be supported after system timers are modified to account for

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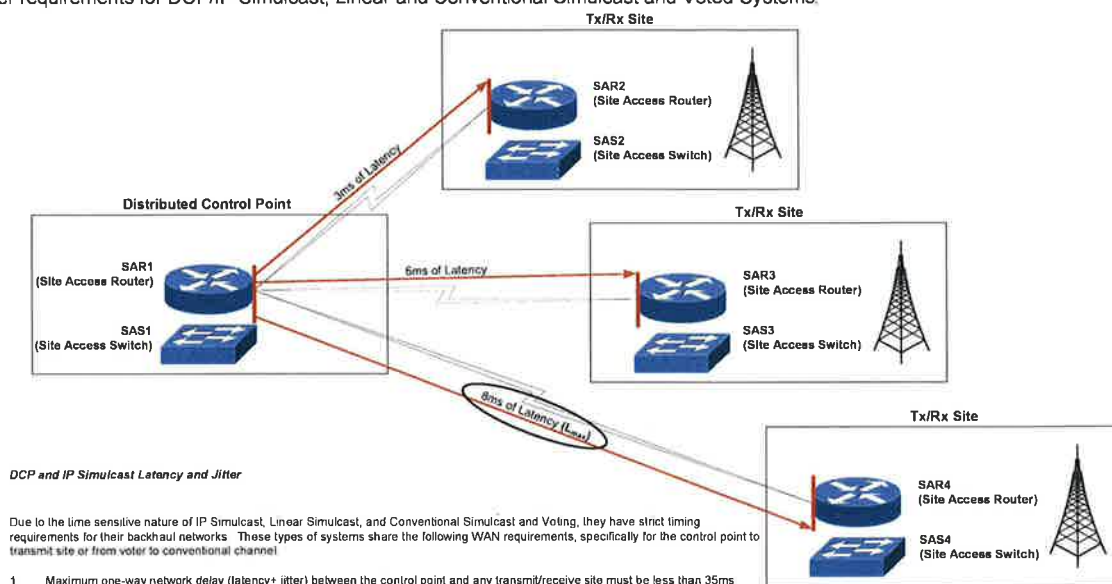
satellite delay.

- NSC Latency
 - NSC to NSC latency must be less than *(150ms)*
- Multisite Latency
 - Multisite to NSC latency must be less than *(150ms - NSC Latency)*
- Simulcast Latency
 - Simulcast Tx/Rx site to Control Point
 - Refer to the diagram and instruction in IP Simulcast Latency and Jitter section
 - Latency must be less than *(35ms)*
- Control Point Latency
 - Control Point to NSC latency must be less than *(150ms - Simulcast Latency_{max} - NSC Latency)*.

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Distributed Control Point and IP Simulcast

Latency and jitter requirements for DCP/IP Simulcast, Linear and Conventional Simulcast and Voted Systems.



DCP and IP Simulcast Latency and Jitter

Due to the time sensitive nature of IP Simulcast, Linear Simulcast, and Conventional Simulcast and Voting, they have strict timing requirements for their backhaul networks. These types of systems share the following WAN requirements, specifically for the control point to transmit site or from voter to conventional channel.

- Maximum one-way network delay (latency+ jitter) between the control point and any transmit/receive site must be less than 35ms
- One-way jitter requirements must meet the following
 - Maximum one-way jitter < $[35 \text{ ms} - (L_{max})]$
 - L_{max} = Latency of furthest Tx/Rx site to Control Point.

In this example: $35 \text{ ms} - (8 \text{ ms}) = 27 \text{ ms}$ or less of jitter is allowable

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Layer 2 Quality of Service Requirements

If Layer 2 WAN services are being provided, the layer 2 WAN should map our layer 3 DSCP markings into the appropriate layer 2 queues that meet the layer 3 requirements.

Layer 3 Quality of Service Requirements

At OSI Layer 3, the network will recognize and forward L3Harris voice traffic marked using the Differentiated Services Code Point (DSCP) byte and the network will also meet the following requirements:

1. The Platinum (DSCP EF) queue should be treated as a strict priority queue for voice.
2. All other queues should be treated as CBWFQ.
3. All DSCP values should not be manipulated during transport.

Bandwidth Requirements

All of the links that are provided will need to meet or exceed the bandwidth requirements established by L3Harris.

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Revision History

Revision	Date	Revised by	Reason for Change
6a	02/05/2018	J. Comiskey	- Defined Packet Loss Requirements - Defined Multi-Site Jitter as one-way - Updated Latency Requirements with per path thresholds - Revised Simulcast formula, diagram, title
7	5/16/2023	D. Pociluyko M. Smith	Updated to L3Harris logo Updated page header from Rev 6a to 7 Updated page header date from 2/5/2018 to 5/16/2023

ATTACHMENT D
POINT OF CONTACT AND NOTICE**NOTICE TO L3HARRIS:**

Name Jeremy Roe
Title Principal, Contracts

Address 221 Jefferson Ridge Parkway,
Address Lynchburg, VA 24501

NOTICE TO CUSTOMER:

Name Chris Brooks
Title Emc

Address erath eoc @ Co. erath, Tx. US
Address _____

L3HARRIS POINT OF CONTACT:

Name Rodney Philgren
Title Regional Service Manager
Phone 630-270-2368
331-234-0696
Expertise Field Services

CUSTOMER POINT OF CONTACT:

Name Chris Brooks
Title EMC
Phone 254-592-7017
Expertise _____

Name _____
Title _____
Phone _____
Expertise _____

Name _____
Title _____
Phone _____
Expertise _____

ESCALATION PLAN NUMBERS FOR L3HARRIS CONTACTS PER STEPS 1-4 (as applicable if Customer purchased Rapid Response Service Level Agreement):

Step 1- Designated Personnel: _____
Step 2- Supervisor: _____
Step 3- Regional Service Manager: _____
Step 4- Director of Field Services: _____

NETWORK OPERATING CENTER (NOC) CONTACT:

Name _____
Title _____
Phone _____
Expertise _____

Budgetary Path Analysis

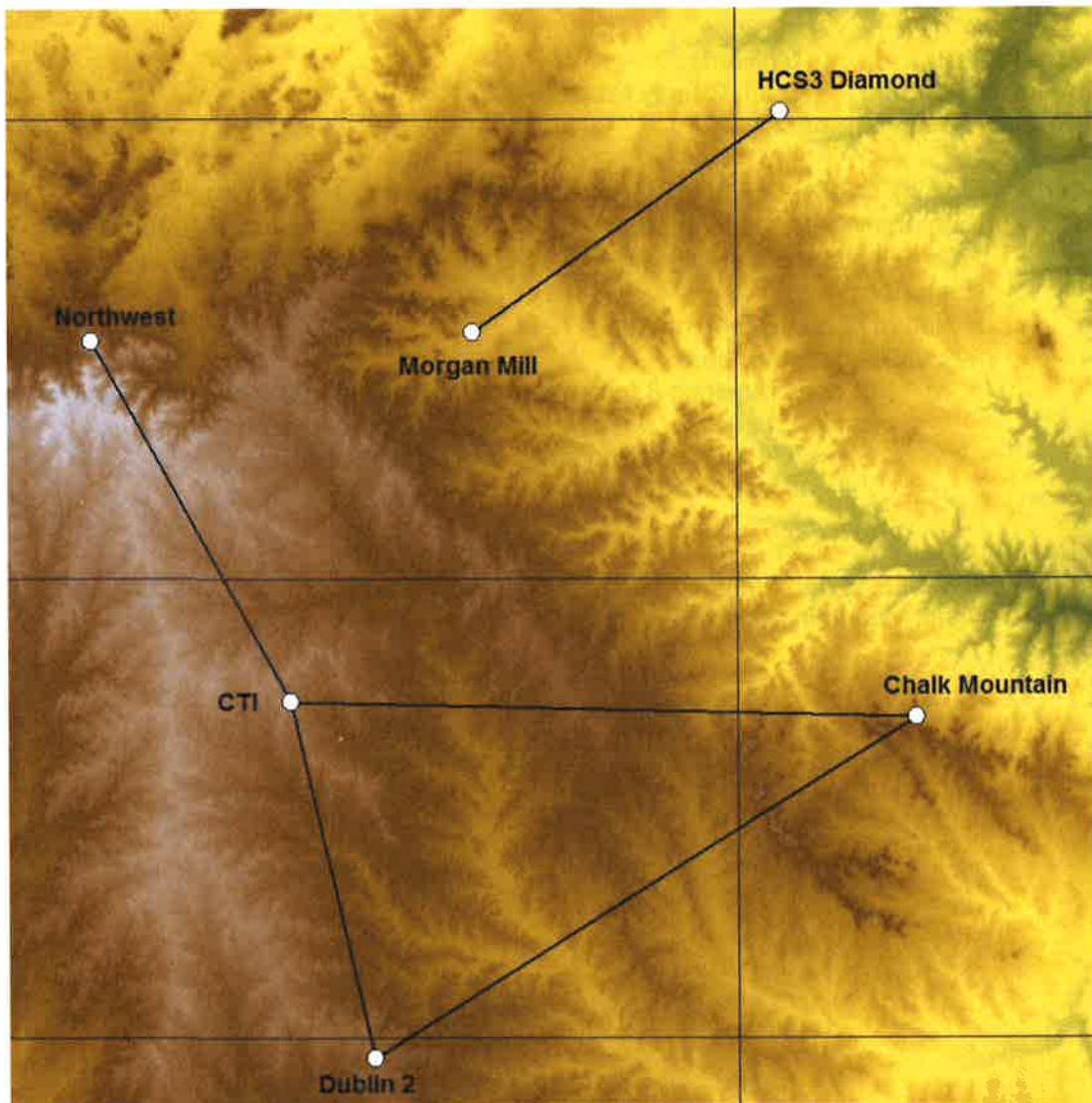
Customer: L3 Harris
Microwave Link: Erath County Project – v4
Project Design Summary:

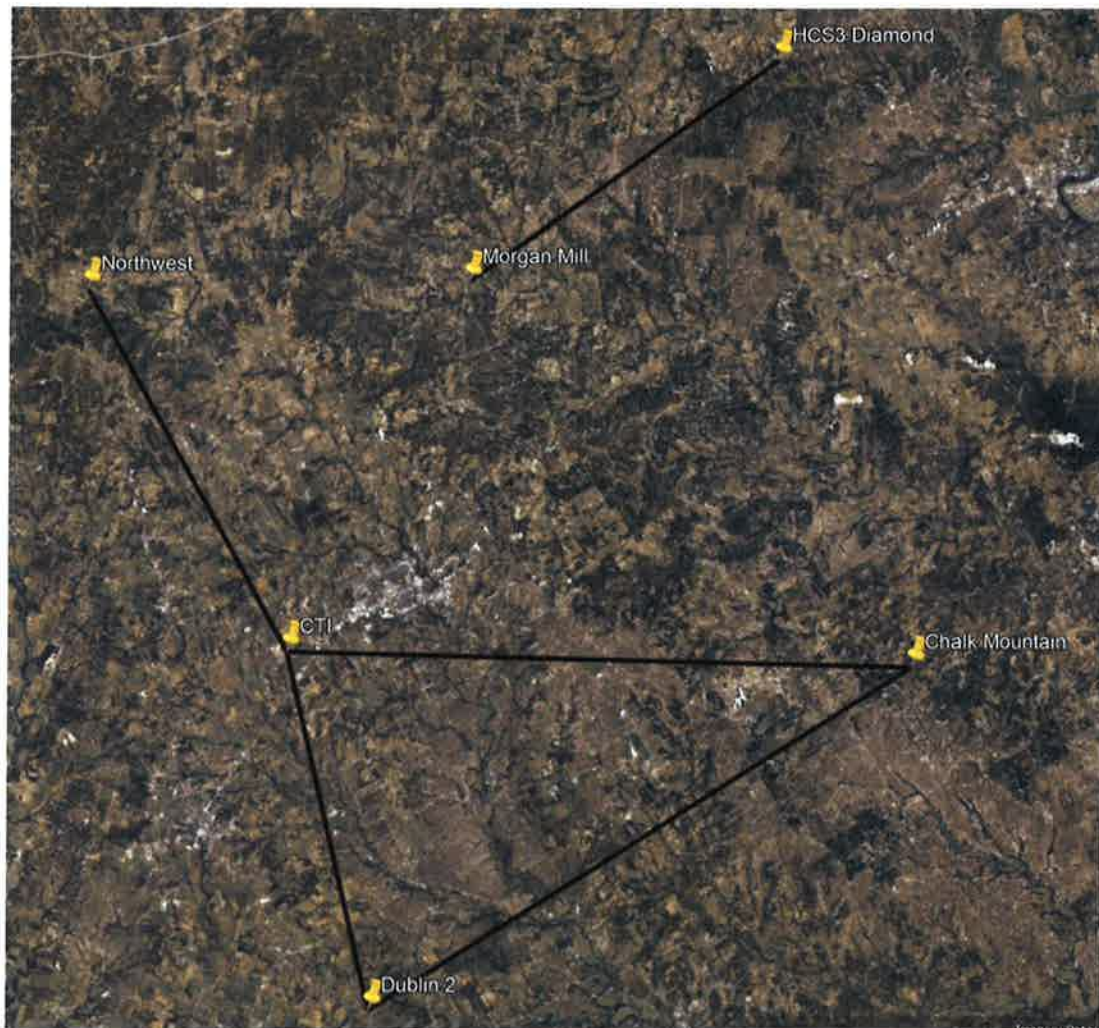
- SkyLink CG2X – 6 GHz HP, Hot-Standby for spurs, 1+0 for ring
- Path analysis for 30 MHz channel, up to 138 Mbps on spurs, 161 Mbps in ring
- Tree heights of 60 foot shown for each path to confirm 100% Fresnel Zone clearance
- Minimum of 30 dB fade margin
- >99.999% path availability
 - For hops requiring 8 foot antennas to achieve >99.999% path availability, included results for 6 foot antennas if tower load is an issue.
 - 8 foot on one end and 6 foot on other end
 - 6 foot on both ends

Revision:

- **05/24/23:** Initial Version for v4 network. Stephenville site removed, CTI and Chalk Mountain added.

Map:





Northwest Site Nearby Wind Turbines

Northwest Site tower has two nearby wind turbines.

- Approximately 0.2 miles from tower
- 6 GHz Fresnel Zone radius is 13.1 feet at 0.2 miles from antenna.
- Using Google Earth overhead view indicates path to CTI will clear the wind turbines.



Path Summary Table:

Results for path availability requirement >99.999%

Path	Site A	Antenna CL (ft)	Antenna Size (ft)	Site B	Antenna CL (ft)	Antenna Size (ft)	Path Length (mi)	Frequency (MHz)	Two-Way Availability (%)	Fade Margin (dB)	Layer 2 Bit rate (Mbps)
1	Dublin 2	100	6	CTI	125	6	13.74	6000	> 99.999	42.8	161
2	CTI	250	8	Chalk Mountain	200	8	23.53	6000	> 99.999	42.6	161
3	Chalk Mountain	260	8	Dublin 2	220	8	24.11	6000	> 99.999	42.4	161
4	CTI	225	6	Northwest	175	6	23.53	6000	> 99.999	40.7	138
5	Morgan Mill	340	6	HCS3 Diamond	185	6	14.31	6000	> 99.999	41.6	138

Results for path 2 and path 3 with 6 foot antenna on one end, 8 foot antenna at other end:

Path	Site A	Antenna CL (ft)	Antenna Size (ft)	Site B	Antenna CL (ft)	Antenna Size (ft)	Path Length (mi)	Frequency (MHz)	Two-Way Availability (%)	Fade Margin (dB)	Layer 2 Bit rate (Mbps)
2	CTI	250	8	Chalk Mountain	200	6	23.53	6000	99.999	40.3	161
3	Chalk Mountain	260	8	Dublin 2	220	6	24.11	6000	99.999	40.1	161

Results for path 2 and path 3 with only 6 foot antennas:

Path	Site A	Antenna CL (ft)	Antenna Size (ft)	Site B	Antenna CL (ft)	Antenna Size (ft)	Path Length (mi)	Frequency (MHz)	Two-Way Availability (%)	Fade Margin (dB)	Layer 2 Bit rate (Mbps)
2	CTI	250	6	Chalk Mountain	200	6	23.53	6000	99.998	38.0	161
3	Chalk Mountain	260	6	Dublin 2	220	6	24.11	6000	99.998	37.8	161

Path 1: Dublin 2 to CTI

Path Length: 13.74 miles

TX Frequency: 6 GHz – 1+0 - 128 QAM – 161 Mbps

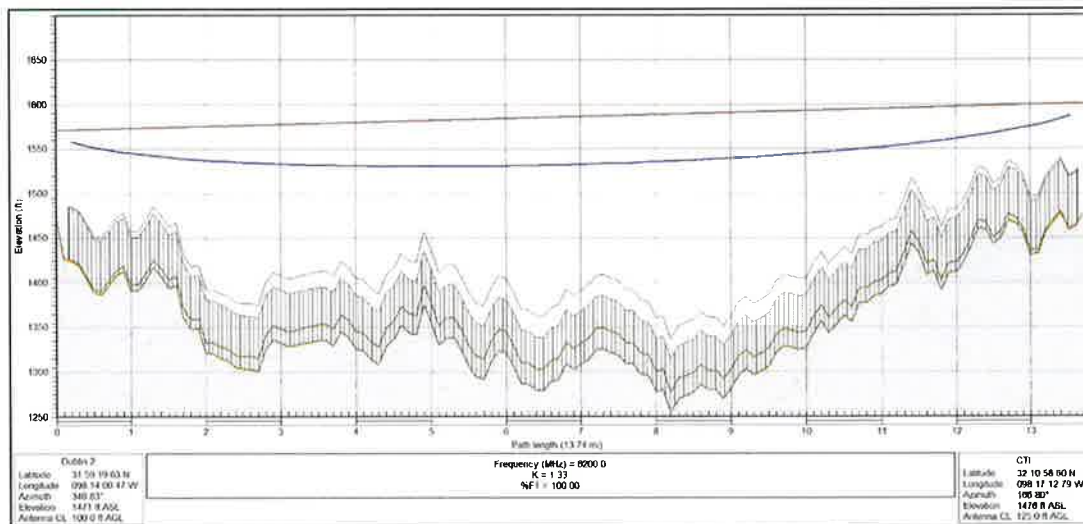
Antenna Size: 6 foot

Antenna Height

- Dublin 2: 100 feet
- CTI: 125 feet

Fade Margin: 42.8 dB

Annual Path Availability: > 99.999%



Worksheet: SkyLink CG2X – 6 GHz, 128QAM, 6 foot antenna

	Dublin 2	CTI
Elevation (ft)	1471.01	1475.86
Latitude	31 59 19.63 N	32 10 58.60 N
Longitude	098 14 00.47 W	098 17 12.79 W
True azimuth (°)	346.83	166.80
Vertical angle (°)	-0.05	-0.10
Antenna model	VHLP6-6W	VHLP6-6W
Antenna height (ft)	100.00	125.00
Antenna gain (dBi)	39.30	39.30
TX line loss (dB)	0.20	0.20
Frequency (MHz)	6200.00	
Polarization	Vertical	
Path length (mi)	13.74	
Free space loss (dB)	135.21	
Atmospheric absorption loss (dB)	0.19	
Net path loss (dB)	57.20	57.20
Radio model	CG2X_6G_128Q	CG2X_6G_128Q
TX power (watts)	1.26	1.26
TX power (dBm)	31.00	31.00
EIRP (dBm)	70.10	70.10
Emission designator	30M0D7W	30M0D7W
RX threshold criteria	BER 10-6	BER 10-6
RX threshold level (dBm)	-69.00	-69.00
Maximum receive signal (dBm)	-25.00	-25.00
RX signal (dBm)	-26.20	-26.20
Thermal fade margin (dB)	42.80	42.80
Climatic factor	1.00	
Terrain roughness (ft)	56.90	
C factor	0.85	
Fade occurrence factor (Po)	3.40E-02	
Average annual temperature (°F)	77.00	
Worst month - multipath (%)	99.99982	99.99982
(sec)	4.69	4.69
Annual - multipath (%)	99.99993	99.99993
(sec)	21.10	21.10
(% - sec)	99.99987 - 42.19	
Rain region	ITU Region M	
0.01% rain rate (mm/hr)	63.00	
Flat fade margin - rain (dB)	42.80	
Rain rate (mm/hr)	2375.90	
Rain attenuation (dB)	42.80	
Annual rain (%-sec)	100.00000 - 0.00	
Annual multipath + rain (%-sec)	99.99987 - 42.19	

Thu, May 25 2023
 Dublin 2-CTI.pl4
 Reliability Method - Vigants - Barnett
 Rain - ITU-R P530-7

Path 2: CTI to Chalk Mountain

Path Length: 23.53 miles

TX Frequency: 6 GHz – 1+0 - 128 QAM – 161 Mbps

Antenna Size: 6 and 8 foot

Antenna Height

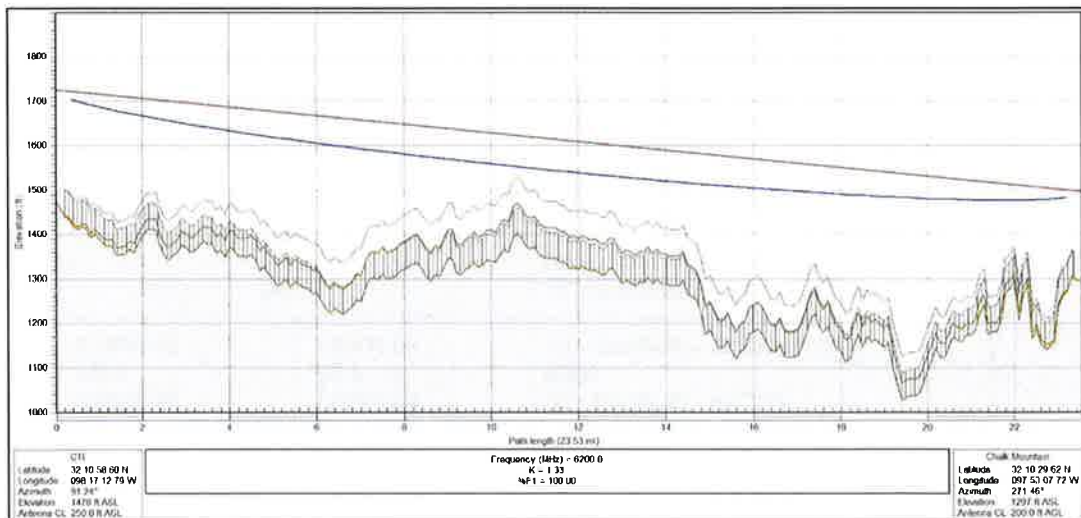
- CTI: 250 feet
- Chalk Mountain: 200 feet

Fade Margin:

- 37.99 dB (6 foot antenna)
- 40.29 dB (6 and 8 foot antenna)
- 42.59 dB (8 foot antenna)

Annual Path Availability:

- 6 foot antenna: 99.998%
- 6 and 8 foot antenna: 99.9989%
- 8 foot antenna: > 99.999%



Worksheet: SkyLink CG2X – 6 GHz, 128QAM, 6 foot antenna

	CTI	Chalk Mountain
Elevation (ft)	1475.86	1296.83
Latitude	32 10 58.60 N	32 10 29.62 N
Longitude	098 17 12.79 W	097 53 07.72 W
True azimuth (°)	91.24	271.46
Vertical angle (°)	-0.23	-0.02
Antenna model	VHLP6-6W	VHLP6-6W
Antenna height (ft)	250.00	200.00
Antenna gain (dBi)	39.30	39.30
TX line loss (dB)	0.20	0.20
Frequency (MHz)	6200.00	
Polarization	Vertical	
Path length (mi)	23.53	
Free space loss (dB)	139.88	
Atmospheric absorption loss (dB)	0.33	
Net path loss (dB)	62.01	62.01
Radio model	CG2X_6G_128Q	CG2X_6G_128Q
TX power (watts)	1.26	1.26
TX power (dBm)	31.00	31.00
EIRP (dBm)	70.10	70.10
Emission designator	30M0D7W	30M0D7W
RX threshold criteria	BER 10-6	BER 10-6
RX threshold level (dBm)	-69.00	-69.00
Maximum receive signal (dBm)	-25.00	-25.00
RX signal (dBm)	-31.01	-31.01
Thermal fade margin (dB)	37.99	37.99
Climatic factor	1.00	
Terrain roughness (ft)	61.20	
C factor	0.77	
Fade occurrence factor (Po)	1.55E-01	
Average annual temperature (°F)	77.00	
Worst month - multipath (%)	99.99753	99.99753
(sec)	64.79	64.79
Annual - multipath (%)	99.99908	99.99908
(sec)	291.57	291.57
(% - sec)	99.99815 - 583.13	
Rain region	ITU Region M	
0.01% rain rate (mm/hr)	63.00	
Flat fade margin - rain (dB)	37.99	
Rain rate (mm/hr)	1543.66	
Rain attenuation (dB)	37.99	
Annual rain (%-sec)	100.00000 - 0.00	
Annual multipath + rain (%-sec)	99.99815 - 583.13	

Thu, May 25 2023
 CTI-Chalk Mountain.pl4
 Reliability Method - Vigants - Barnett
 Rain - ITU-R P530-7

Worksheet: SkyLink CG2X – 6 GHz, 128QAM, 6 and 8 foot antenna

	CTI	Chalk Mountain
Elevation (ft)	1475.86	1296.83
Latitude	32 10 58.60 N	32 10 29.62 N
Longitude	098 17 12.79 W	097 53 07.72 W
True azimuth (°)	91.24	271.46
Vertical angle (°)	-0.23	-0.02
Antenna model	HX8-6W	VHLP6-6W
Antenna height (ft)	250.00	200.00
Antenna gain (dBi)	41.60	39.30
TX line loss (dB)	0.20	0.20
Frequency (MHz)	6200.00	
Polarization	Vertical	
Path length (mi)	23.53	
Free space loss (dB)	139.88	
Atmospheric absorption loss (dB)	0.33	
Net path loss (dB)	59.71	59.71
Radio model	CG2X_6G_128Q	CG2X_6G_128Q
TX power (watts)	1.26	1.26
TX power (dBm)	31.00	31.00
EIRP (dBm)	72.40	70.10
Emission designator	30M0D7W	30M0D7W
RX threshold criteria	BER 10-6	BER 10-6
RX threshold level (dBm)	-69.00	-69.00
Maximum receive signal (dBm)	-25.00	-25.00
RX signal (dBm)	-28.71	-28.71
Thermal fade margin (dB)	40.29	40.29
Climatic factor	1.00	
Terrain roughness (ft)	61.20	
C factor	0.77	
Fade occurrence factor (Po)	1.55E-01	
Average annual temperature (°F)	77.00	
Worst month - multipath (%)	99.99855	99.99855
(sec)	38.15	38.15
Annual - multipath (%)	99.99946	99.99946
(sec)	171.69	171.69
(% - sec)	99.99891 - 343.37	
Rain region	ITU Region M	
0.01% rain rate (mm/hr)	63.00	
Flat fade margin - rain (dB)	40.29	
Rain rate (mm/hr)	1725.74	
Rain attenuation (dB)	40.29	
Annual rain (%-sec)	100.00000 - 0.00	
Annual multipath + rain (%-sec)	99.99891 - 343.37	

Wed, May 24 2023
 CTI-Chalk Mountain.pl4
 Reliability Method - Vigants - Barnett
 Rain - ITU-R P530-7

Worksheet: SkyLink CG2X – 6 GHz, 128QAM, 8 foot antenna

	CTI	Chalk Mountain
Elevation (ft)	1475.86	1296.83
Latitude	32 10 58.60 N	32 10 29.62 N
Longitude	098 17 12.79 W	097 53 07.72 W
True azimuth (°)	91.24	271.46
Vertical angle (°)	-0.23	-0.02
Antenna model	HX8-6W	HX8-6W
Antenna height (ft)	250.00	200.00
Antenna gain (dBi)	41.60	41.60
TX line loss (dB)	0.20	0.20
Frequency (MHz)	6200.00	
Polarization	Vertical	
Path length (mi)	23.53	
Free space loss (dB)	139.88	
Atmospheric absorption loss (dB)	0.33	
Net path loss (dB)	57.41	57.41
Radio model	CG2X_6G_128Q	CG2X_6G_128Q
TX power (watts)	1.26	1.26
TX power (dBm)	31.00	31.00
EIRP (dBm)	72.40	72.40
Emission designator	30M0D7W	30M0D7W
RX threshold criteria	BER 10-6	BER 10-6
RX threshold level (dBm)	-69.00	-69.00
Maximum receive signal (dBm)	-25.00	-25.00
RX signal (dBm)	-26.41	-26.41
Thermal fade margin (dB)	42.59	42.59
Climatic factor	1.00	
Terrain roughness (ft)	61.20	
C factor	0.77	
Fade occurrence factor (Po)	1.55E-01	
Average annual temperature (°F)	77.00	
Worst month - multipath (%)	99.99915	99.99915
(sec)	22.47	22.47
Annual - multipath (%)	99.99968	99.99968
(sec)	101.10	101.10
(% - sec)	99.99936 - 202.19	
Rain region	ITU Region M	
0.01% rain rate (mm/hr)	63.00	
Flat fade margin - rain (dB)	42.59	
Rain rate (mm/hr)	1907.81	
Rain attenuation (dB)	42.59	
Annual rain (%-sec)	100.00000 - 0.00	
Annual multipath + rain (%-sec)	99.99936 - 202.19	

Wed, May 24 2023
 CTI-Chalk Mountain.pl4
 Reliability Method - Vigants - Barnett
 Rain - ITU-R P530-7

Path 3: Chalk Mountain to Dublin 2

Path Length: 24.11 miles

TX Frequency: 6 GHz – 1+0 - 128 QAM – 161 Mbps

Antenna Size: 6 and 8 foot

Antenna Height

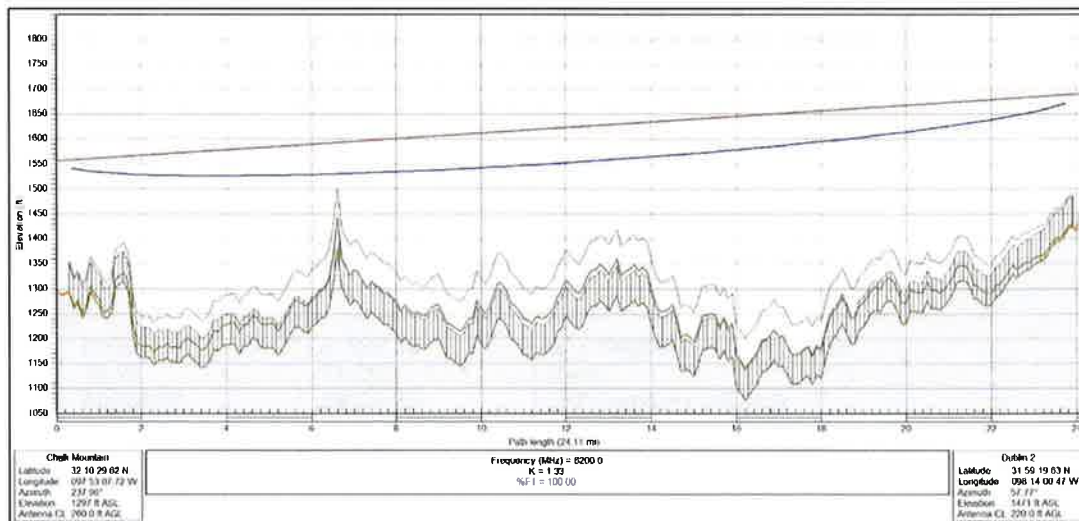
- Chalk Mountain: 260 feet
- Dublin 2: 220 feet

Fade Margin:

- 37.77 dB (6 foot antenna)
- 40.07 dB (6 and 8 foot antenna)
- 42.37 dB (8 foot antenna)

Annual Path Availability:

- 6 foot antenna: 99.998%
- 6 and 8 foot antenna: 99.9989%
- 8 foot antenna: > 99.999%



Worksheet: SkyLink CG2X – 6 GHz, 128QAM, 6 foot antenna

	Chalk Mountain	Dublin 2
Elevation (ft)	1296.83	1471.01
Latitude	32 10 29.62 N	31 59 19.63 N
Longitude	097 53 07.72 W	098 14 00.47 W
True azimuth (°)	237.96	57.77
Vertical angle (°)	-0.07	-0.19
Antenna model	VHLP6-6W	VHLP6-6W
Antenna height (ft)	260.00	220.00
Antenna gain (dBi)	39.30	39.30
TX line loss (dB)	0.20	0.20
Frequency (MHz)	6200.00	
Polarization	Vertical	
Path length (mi)	24.11	
Free space loss (dB)	140.09	
Atmospheric absorption loss (dB)	0.34	
Net path loss (dB)	62.23	62.23
Radio model	CG2X_6G_128Q	CG2X_6G_128Q
TX power (watts)	1.26	1.26
TX power (dBm)	31.00	31.00
EIRP (dBm)	70.10	70.10
Emission designator	30M0D7W	30M0D7W
RX threshold criteria	BER 10-6	BER 10-6
RX threshold level (dBm)	-69.00	-69.00
Maximum receive signal (dBm)	-25.00	-25.00
RX signal (dBm)	-31.23	-31.23
Thermal fade margin (dB)	37.77	37.77
Climatic factor	1.00	
Terrain roughness (ft)	68.90	
C factor	0.66	
Fade occurrence factor (Po)	1.43E-01	
Average annual temperature (°F)	77.00	
Worst month - multipath (%)	99.99761	99.99761
(sec)	62.83	62.83
Annual - multipath (%)	99.99910	99.99910
(sec)	282.75	282.75
(% - sec)	99.99821 - 565.50	
Rain region	ITU Region M	
0.01% rain rate (mm/hr)	63.00	
Flat fade margin - rain (dB)	37.77	
Rain rate (mm/hr)	1511.23	
Rain attenuation (dB)	37.77	
Annual rain (%-sec)	100.00000 - 0.00	
Annual multipath + rain (%-sec)	99.99821 - 565.50	

Thu, May 25 2023
 Chalk Mountain-Dublin 2.pl4
 Reliability Method - Vigants - Barnett
 Rain - ITU-R P530-7

Worksheet: SkyLink CG2X – 6 GHz, 128QAM, 6 and 8 foot antenna

	Chalk Mountain	Dublin 2
Elevation (ft)	1296.83	1471.01
Latitude	32 10 29.62 N	31 59 19.63 N
Longitude	097 53 07.72 W	098 14 00.47 W
True azimuth (°)	237.96	57.77
Vertical angle (°)	-0.07	-0.19
Antenna model	HX8-6W	VHLP6-6W
Antenna height (ft)	260.00	220.00
Antenna gain (dBi)	41.60	39.30
TX line loss (dB)	0.20	0.20
Frequency (MHz)	6200.00	
Polarization	Vertical	
Path length (mi)	24.11	
Free space loss (dB)	140.09	
Atmospheric absorption loss (dB)	0.34	
Net path loss (dB)	59.93	59.93
Radio model	CG2X_6G_128Q	CG2X_6G_128Q
TX power (watts)	1.26	1.26
TX power (dBm)	31.00	31.00
EIRP (dBm)	72.40	70.10
Emission designator	30M0D7W	30M0D7W
RX threshold criteria	BER 10-6	BER 10-6
RX threshold level (dBm)	-69.00	-69.00
Maximum receive signal (dBm)	-25.00	-25.00
RX signal (dBm)	-28.93	-28.93
Thermal fade margin (dB)	40.07	40.07
Climatic factor	1.00	
Terrain roughness (ft)	68.90	
C factor	0.66	
Fade occurrence factor (Po)	1.43E-01	
Average annual temperature (°F)	77.00	
Worst month - multipath (%)	99.99859	99.99859
(sec)	37.00	37.00
Annual - multipath (%)	99.99947	99.99947
(sec)	166.49	166.49
(% - sec)	99.99894 - 332.99	
Rain region	ITU Region M	
0.01% rain rate (mm/hr)	63.00	
Flat fade margin - rain (dB)	40.07	
Rain rate (mm/hr)	1692.73	
Rain attenuation (dB)	40.07	
Annual rain (%-sec)	100.00000 - 0.00	
Annual multipath + rain (%-sec)	99.99894 - 332.99	

Wed, May 24 2023
 Chalk Mountain-Dublin 2.pl4
 Reliability Method - Vigants - Barnett
 Rain - ITU-R P530-7

Worksheet: SkyLink CG2X – 6 GHz, 128QAM, 8 foot antenna

	Chalk Mountain	Dublin 2
Elevation (ft)	1296.83	1471.01
Latitude	32 10 29.62 N	31 59 19.63 N
Longitude	097 53 07.72 W	098 14 00.47 W
True azimuth (°)	237.96	57.77
Vertical angle (°)	-0.07	-0.19
Antenna model	HX8-6W	HX8-6W
Antenna height (ft)	260.00	220.00
Antenna gain (dBi)	41.60	41.60
TX line loss (dB)	0.20	0.20
Frequency (MHz)	6200.00	
Polarization	Vertical	
Path length (mi)	24.11	
Free space loss (dB)	140.09	
Atmospheric absorption loss (dB)	0.34	
Net path loss (dB)	57.63	57.63
Radio model	CG2X_6G_128Q	CG2X_6G_128Q
TX power (watts)	1.26	1.26
TX power (dBm)	31.00	31.00
EIRP (dBm)	72.40	72.40
Emission designator	30M0D7W	30M0D7W
RX threshold criteria	BER 10-6	BER 10-6
RX threshold level (dBm)	-69.00	-69.00
Maximum receive signal (dBm)	-25.00	-25.00
RX signal (dBm)	-26.63	-26.63
Thermal fade margin (dB)	42.37	42.37
Climatic factor	1.00	
Terrain roughness (ft)	68.90	
C factor	0.66	
Fade occurrence factor (Po)	1.43E-01	
Average annual temperature (°F)	77.00	
Worst month - multipath (%)	99.99917	99.99917
(sec)	21.79	21.79
Annual - multipath (%)	99.99969	99.99969
(sec)	98.04	98.04
(% - sec)	99.99938 - 196.08	
Rain region	ITU Region M	
0.01% rain rate (mm/hr)	63.00	
Flat fade margin - rain (dB)	42.37	
Rain rate (mm/hr)	1874.22	
Rain attenuation (dB)	42.37	
Annual rain (%-sec)	100.00000 - 0.00	
Annual multipath + rain (%-sec)	99.99938 - 196.08	

Wed, May 24 2023
 Chalk Mountain-Dublin 2.pl4
 Reliability Method - Vigants - Barnett
 Rain - ITU-R P530-7

Path 4: CTI to Northwest

Path Length: 15.52 miles

TX Frequency: 6 GHz HP – Hot Standby - 64 QAM – 138 Mbps

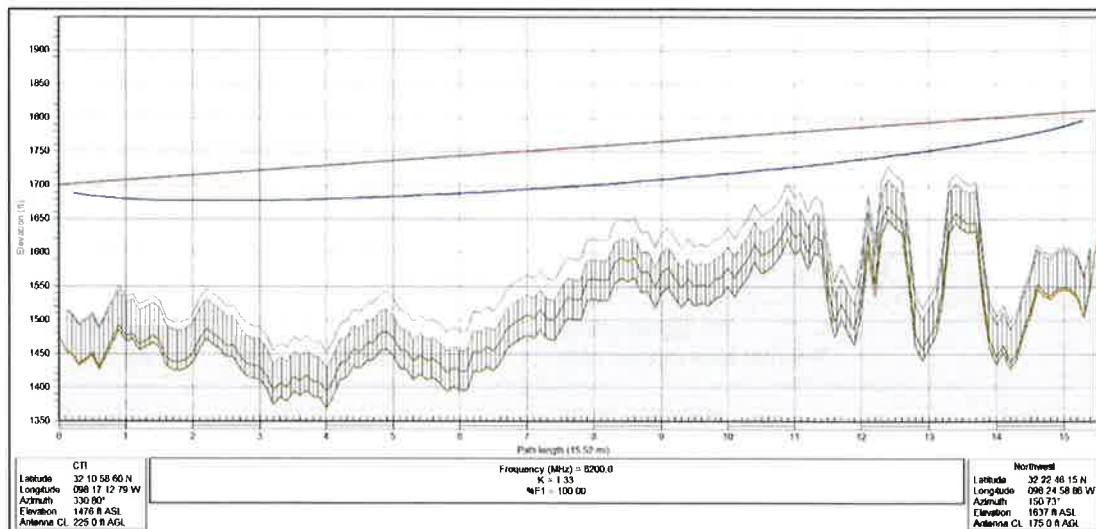
Antenna Size: 6 foot

Antenna Height

- CTI: 225 feet
- Northwest: 175 feet

Fade Margin: 40.72 dB

Annual Path Availability: > 99.999%



Worksheet: SkyLink CG2X – 6 GHz, 64QAM, HSB, 6 foot antenna

	CTI	Northwest
Elevation (ft)	1475.86	1637.07
Latitude	32 10 58.60 N	32 22 46.15 N
Longitude	098 17 12.79 W	098 24 58.86 W
True azimuth (°)	330.80	150.73
Vertical angle (°)	-6.58e-03	-0.16
Antenna model	VHLP6-6W	VHLP6-6W
Antenna height (ft)	225.00	175.00
Antenna gain (dBi)	39.30	39.30
TX line loss (dB)	2.20	2.20
Frequency (MHz)	6200.00	
Polarization	Vertical	
Path length (mi)	15.52	
Free space loss (dB)	136.27	
Atmospheric absorption loss (dB)	0.22	
Net path loss (dB)	62.28	62.28
Radio model	CG2X_6G_64Q	CG2X_6G_64Q
TX power (watts)	1.26	1.26
TX power (dBm)	31.00	31.00
EIRP (dBm)	68.10	68.10
Emission designator	30M0D7W	30M0D7W
RX threshold criteria	BER 10-6	BER 10-6
RX threshold level (dBm)	-72.00	-72.00
Maximum receive signal (dBm)	-25.00	-25.00
RX signal (dBm)	-31.28	-31.28
Thermal fade margin (dB)	40.72	40.72
Climatic factor	1.00	
Terrain roughness (ft)	52.52	
C factor	0.94	
Fade occurrence factor (Po)	5.43E-02	
Average annual temperature (°F)	77.00	
Worst month - multipath (%)	99.99954	99.99954
(sec)	12.11	12.11
Annual - multipath (%)	99.99983	99.99983
(sec)	54.47	54.47
(% - sec)	99.99965 - 108.95	
Rain region	ITU Region M	
0.01% rain rate (mm/hr)	63.00	
Flat fade margin - rain (dB)	40.72	
Rain rate (mm/hr)	2081.91	
Rain attenuation (dB)	40.72	
Annual rain (%-sec)	100.00000 - 0.00	
Annual multipath + rain (%-sec)	99.99965 - 108.95	

Wed, May 24 2023
 CTI-Northwest.pl4
 Reliability Method - Vigants - Barnett
 Rain - ITU-R P530-7

Path 5: Morgan Mill to HCS3 Diamond

Path Length: 14.31 miles

TX Frequency: 6 GHz HP – Hot Standby - 64 QAM – 138 Mbps

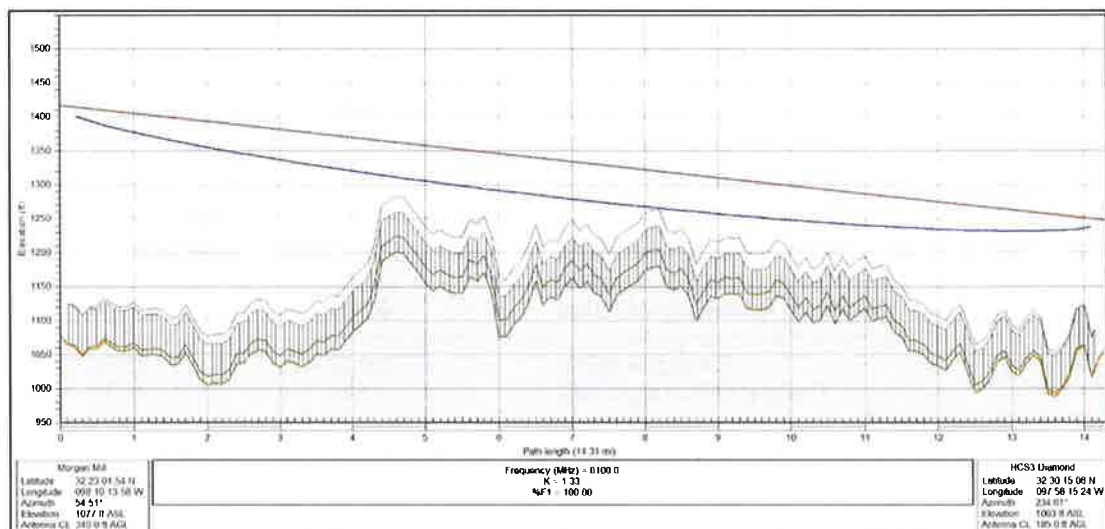
Antenna Size: 6 foot

Antenna Height

- Morgan Mill: 340 feet
- HCS3 Diamond: 185 feet

Fade Margin: 41.58 dB

Annual Path Availability: > 99.999%



Worksheet: SkyLink CG2X – 6 GHz, 64QAM, HSB, 6 foot antenna

	Morgan Mill	HCS3 Diamond
Elevation (ft)	1077.34	1062.84
Latitude	32 23 01.54 N	32 30 15.06 N
Longitude	098 10 13.58 W	097 58 15.24 W
True azimuth (°)	54.51	234.61
Vertical angle (°)	-0.21	0.05
Antenna model	VHLP6-6W	VHLP6-6W
Antenna height (ft)	340.00	185.00
Antenna gain (dBi)	39.30	39.30
TX line loss (dB)	2.20	2.20
Frequency (MHz)	6100.00	
Polarization	Vertical	
Path length (mi)	14.31	
Free space loss (dB)	135.42	
Atmospheric absorption loss (dB)	0.20	
Net path loss (dB)	61.42	61.42
Radio model	CG2X_6G_64Q	CG2X_6G_64Q
TX power (watts)	1.26	1.26
TX power (dBm)	31.00	31.00
EIRP (dBm)	68.10	68.10
Emission designator	30M0D7W	30M0D7W
RX threshold criteria	BER 10-6	BER 10-6
RX threshold level (dBm)	-72.00	-72.00
Maximum receive signal (dBm)	-25.00	-25.00
RX signal (dBm)	-30.42	-30.42
Thermal fade margin (dB)	41.58	41.58
Climatic factor	1.00	
Terrain roughness (ft)	52.84	
C factor	0.93	
Fade occurrence factor (Po)	4.16E-02	
Average annual temperature (°F)	77.00	
Worst month - multipath (%)	99.99971	99.99971
(sec)	7.59	7.59
Annual - multipath (%)	99.99989	99.99989
(sec)	34.17	34.17
(% - sec)	99.99978 - 68.34	
Rain region	ITU Region M	
0.01% rain rate (mm/hr)	63.00	
Flat fade margin - rain (dB)	41.58	
Rain rate (mm/hr)	2432.95	
Rain attenuation (dB)	41.58	
Annual rain (%-sec)	100.00000 - 0.00	
Annual multipath + rain (%-sec)	99.99978 - 68.34	

Mon, May 15 2023
 Morgan Mill-HCS3 Dimond.pl4
 Reliability Method - Vigants - Barnett
 Rain - ITU-R P530-7

RAPTR II v8.2.129

Thursday, May 16, 2023 08:41:53

Project: Granbury Regional Radio Network

Figure: Erath County Coverage Only - Mobile Talk Out

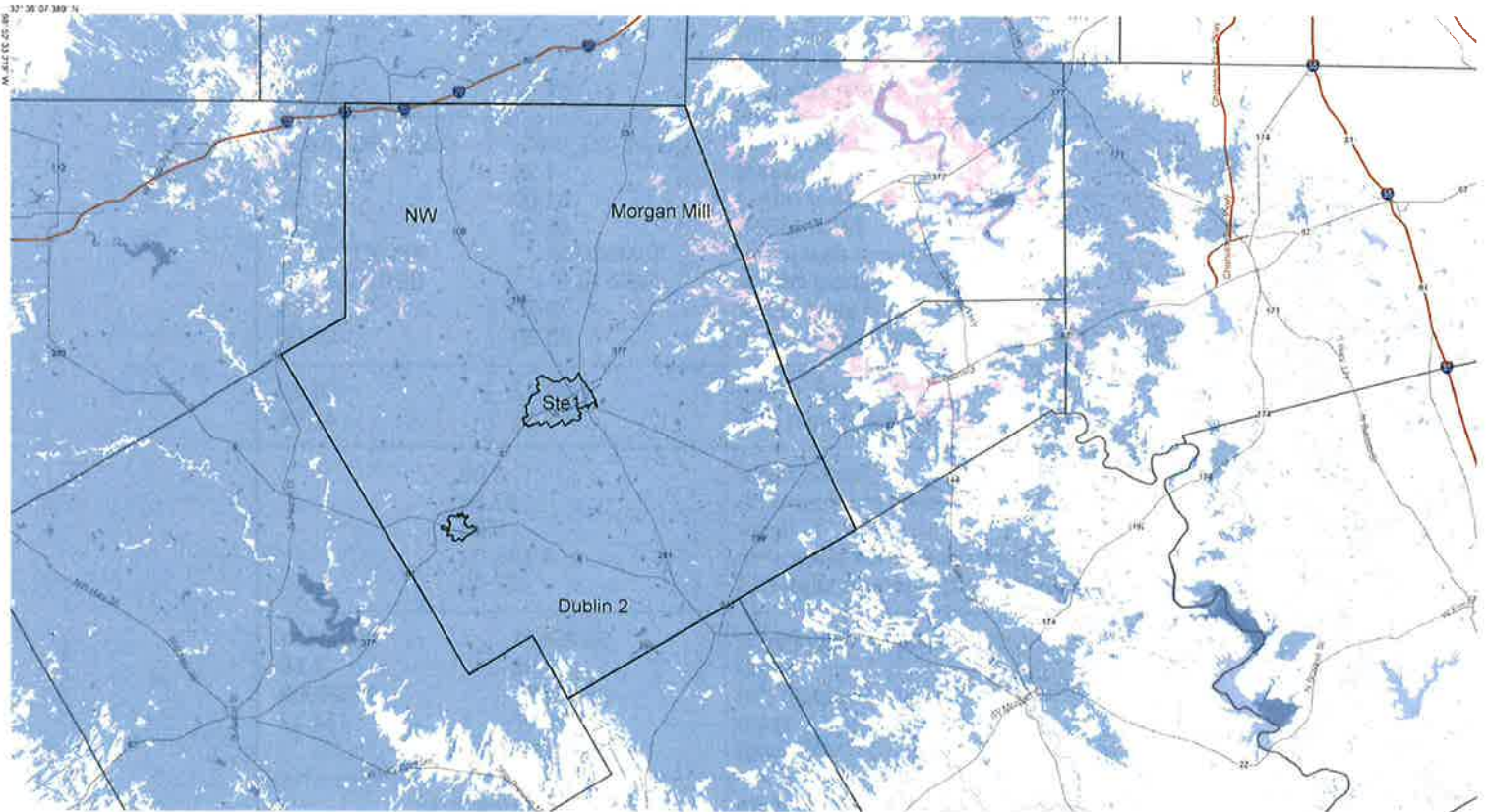
Project Number: 9A0JZ

Engineer: Jessica Sarnon

Map Scale: 1:395,913

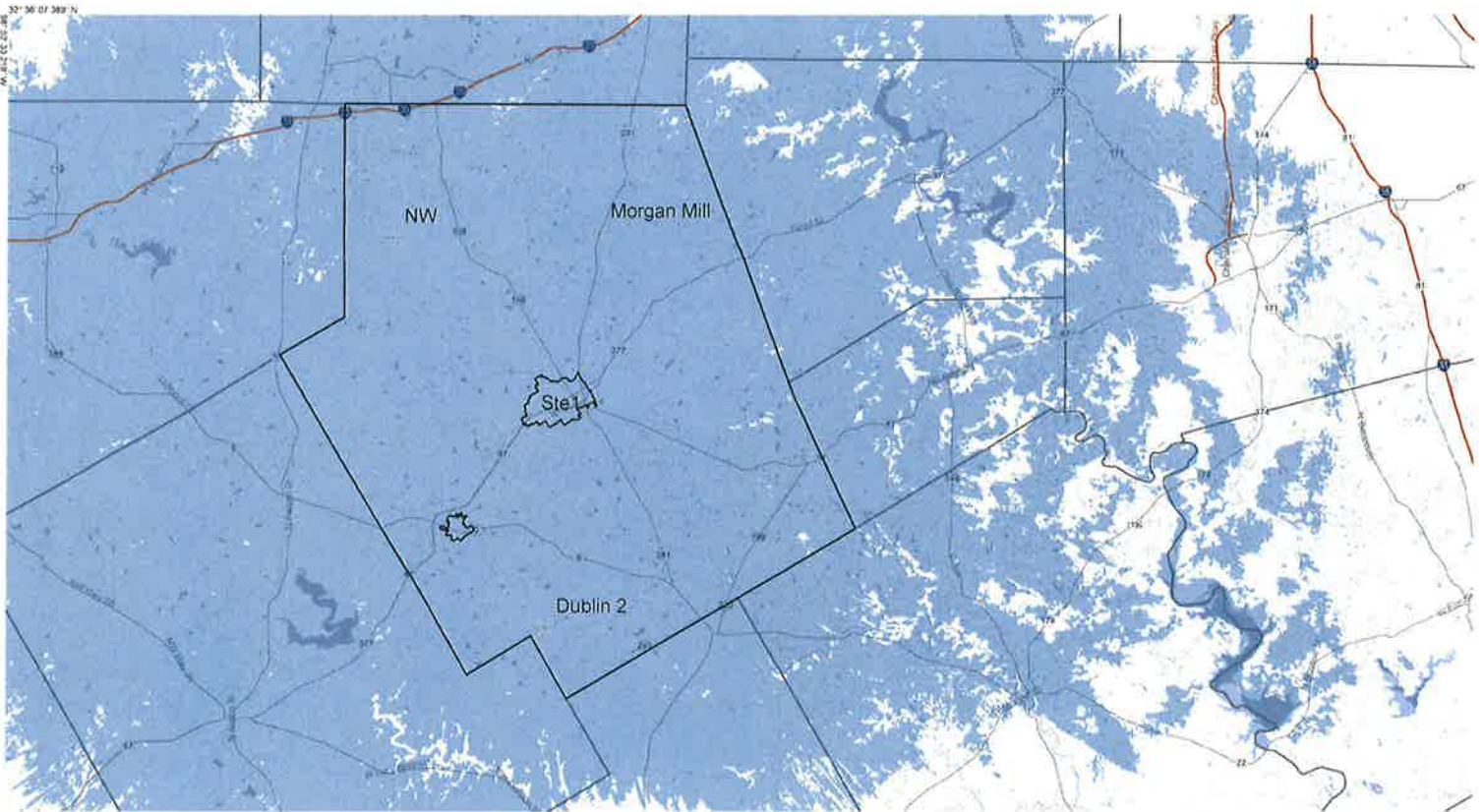
Note: Map depicts coverage across the defined service area. Statistical variability does not allow for guarantees of coverage in specific locations, but does represent graphically area percent coverage.

September 26, 2023
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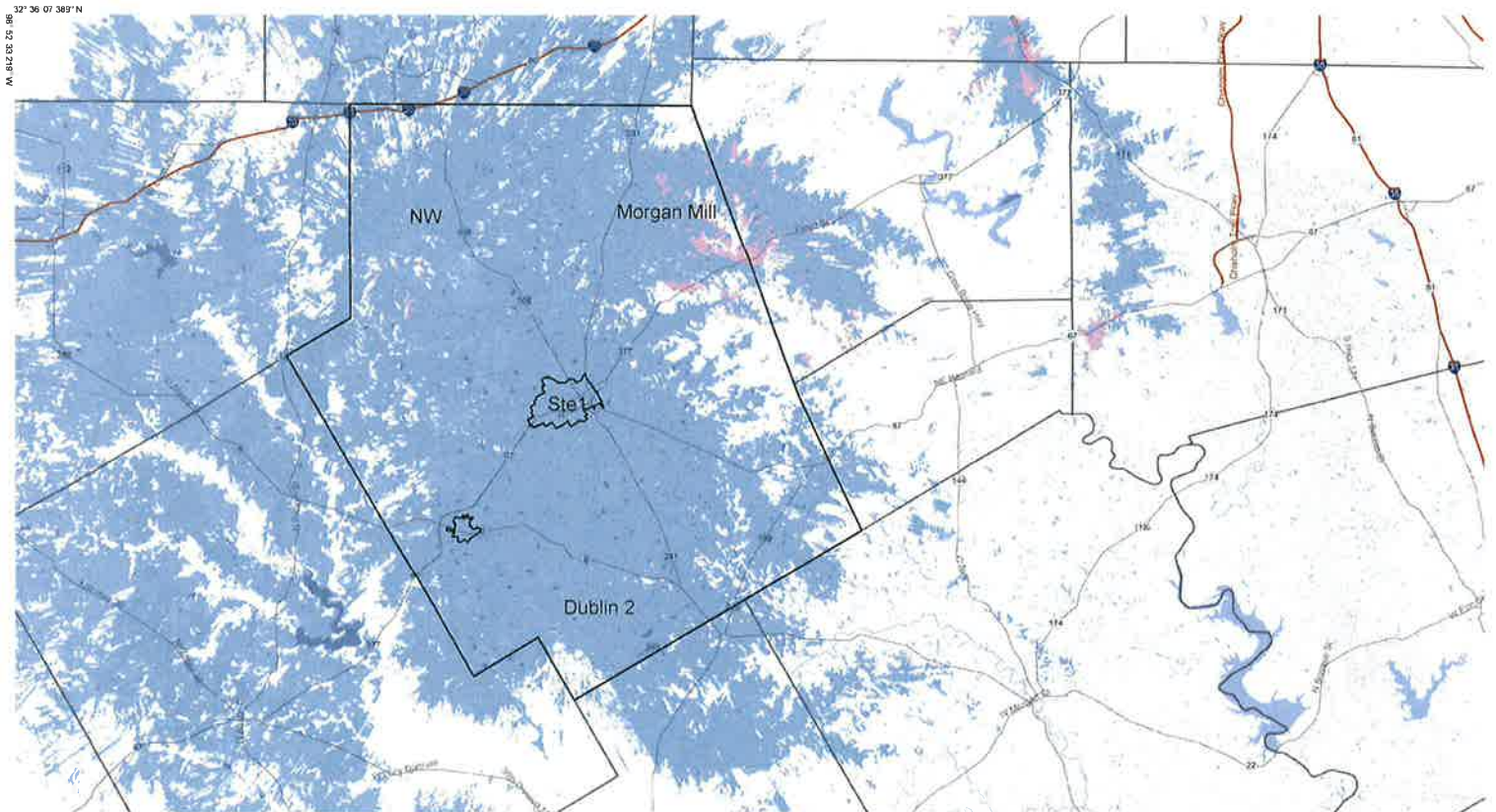
RAPTR II v8.2.129
Thursday, May 18, 2023 09:04:09
Project: Granbury Regional Radio Network
Figure: Erath County Coverage Only - Mobile Talk Back
Project Number: 94012
Engineer: Jessica Barron
Map Scale: 1:395,913
Note: Map depicts coverage across the defined service area. Statistical variability does not allow for guarantee of coverage in specific locations, but does represent graphically area percent coverage.

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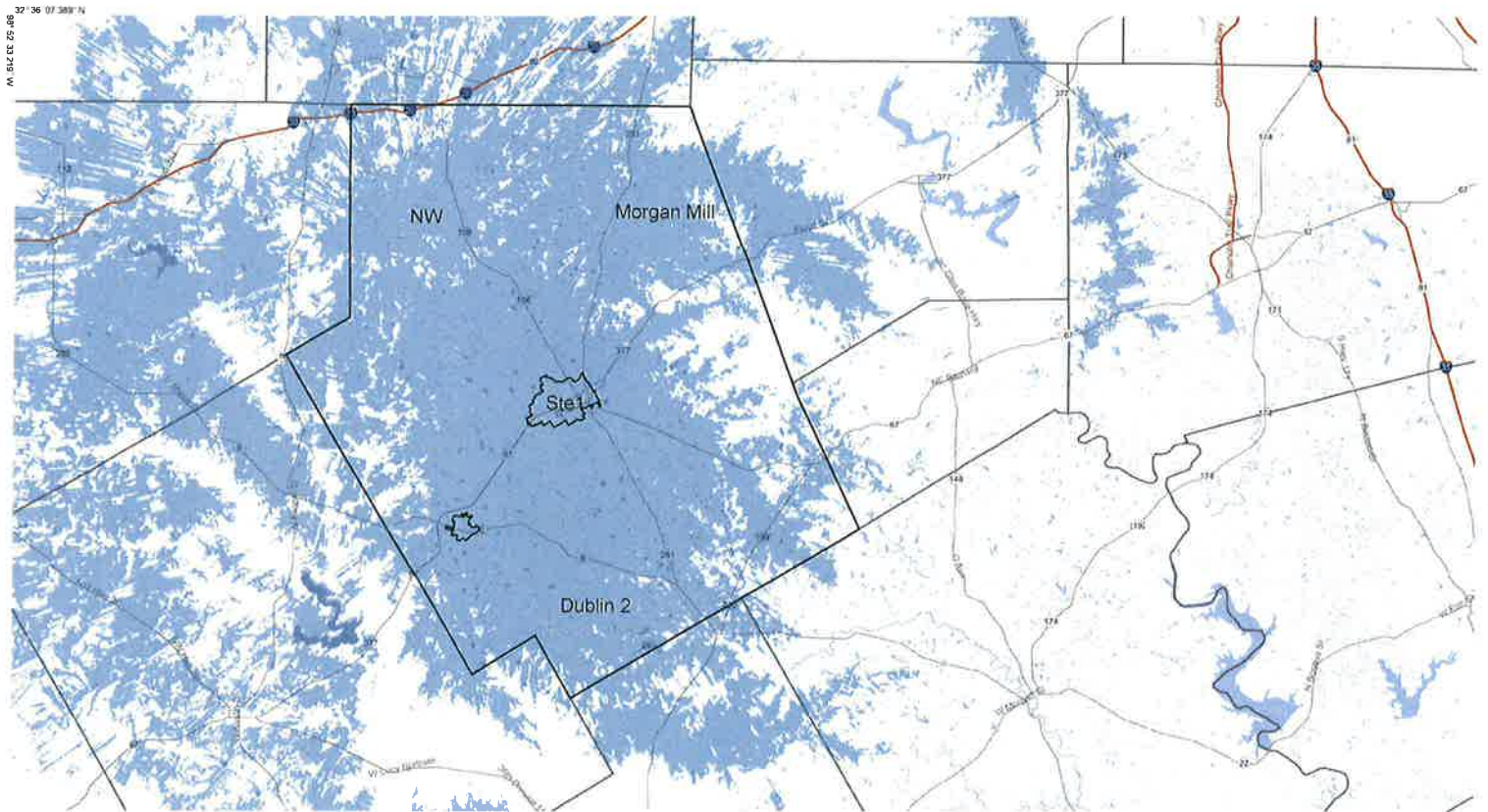
RAPTR II v8.2.129
Thursday, May 18, 2023 09:19:12
Project: Granbury Regional Radio Network
Figure: Erath County Coverage Only - Portable Outdoor Talk Out
Project Number: 9A0JZ
Engineer: Jessica Barron
Map Scale: 1:395,913
Note: Map depicts coverage across the defined service area. Statistical variability does not allow for guarantee of coverage in specific locations, but does represent probability area percent coverage.

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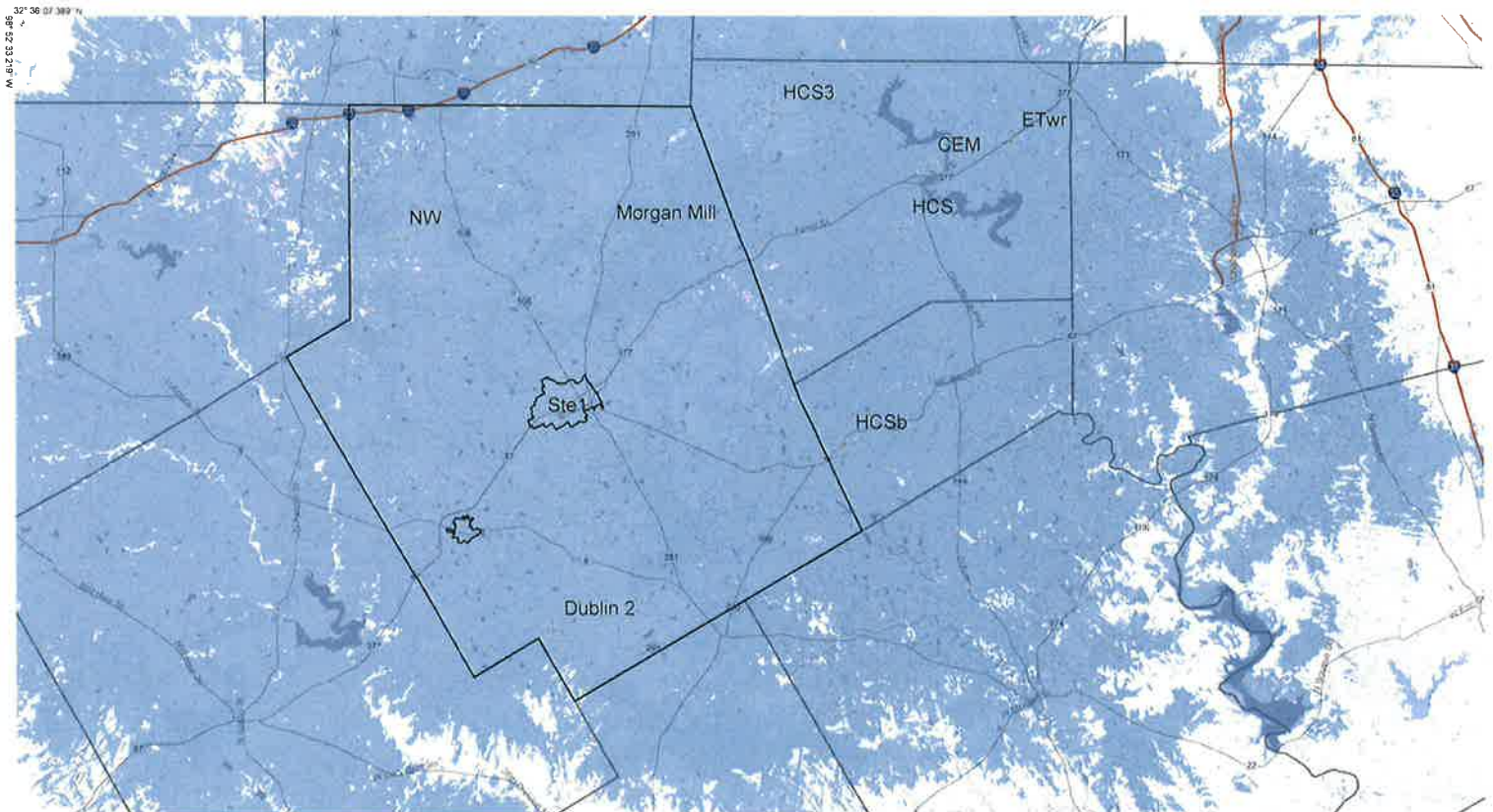
RAPTR II v8.2.129
Thursday, May 18, 2023 09:32:36
Project: Granbury Regional Radio Network
Figure: Erath County Coverage Only - Portable Outdoor Talk Back
Project Number: 9A0JZ
Engineer: Jessica Barron
Map Scale: 1:355,913
Note: Map depicts coverage across the defined service area. Statistical variability does not allow for guarantee of coverage in specific locations, but does represent graphically area percent coverage.

September 26, 2023
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and Competition Sensitive



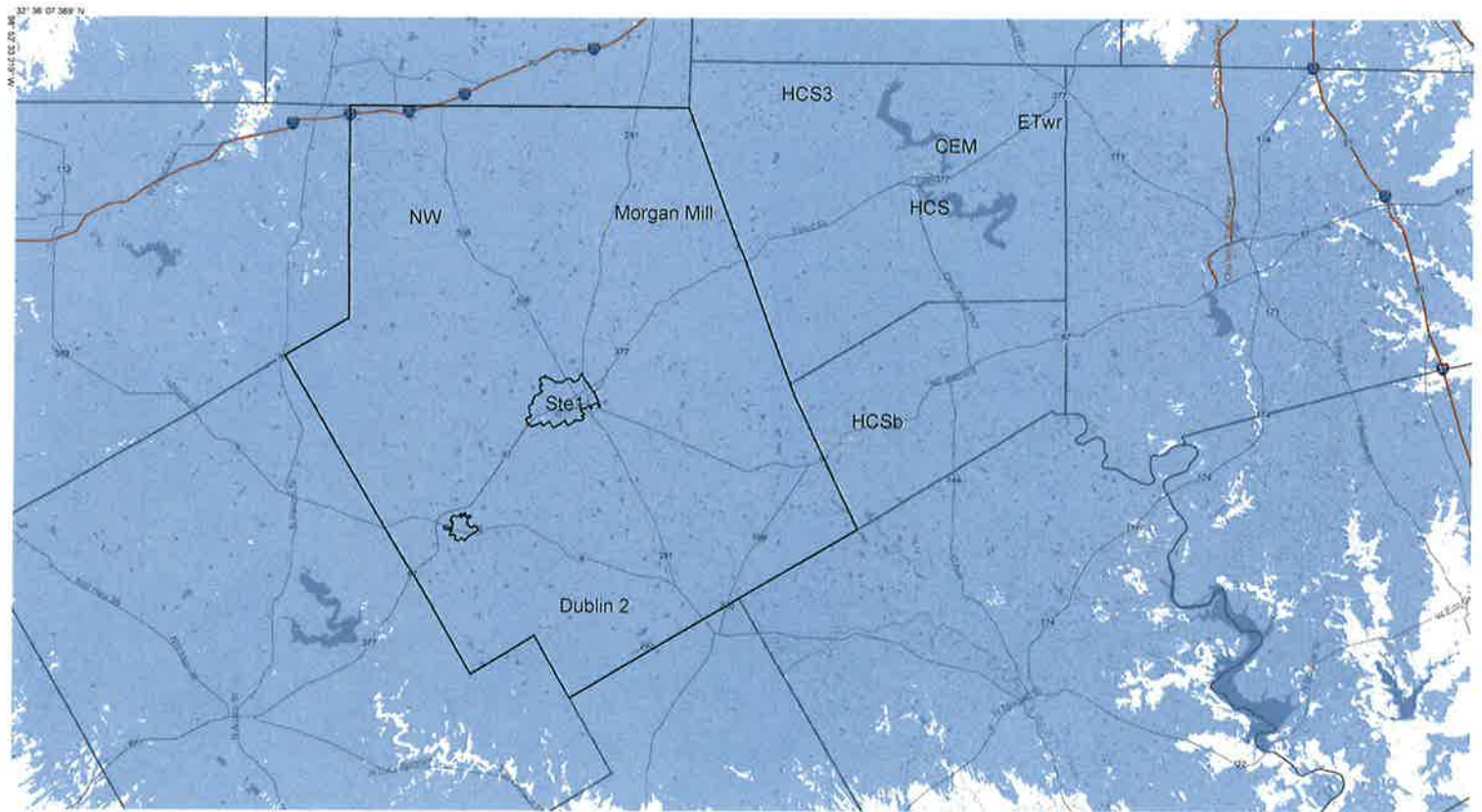
RAPTR II v8.2.128
Thursday, May 18, 2023 09:39:39
Project: Granbury Regional Radio Network
Figure: Erath County and GRRN Coverage - Mobile Talk Out
Project Number: 940JZ
Engineer: Jessica Barron
Map Scale: 1:395,913
Note: Map depicts coverage across the defined service area. Statistical variability does not allow for guarantees of coverage in specific locations, but does represent graphically what percent coverage

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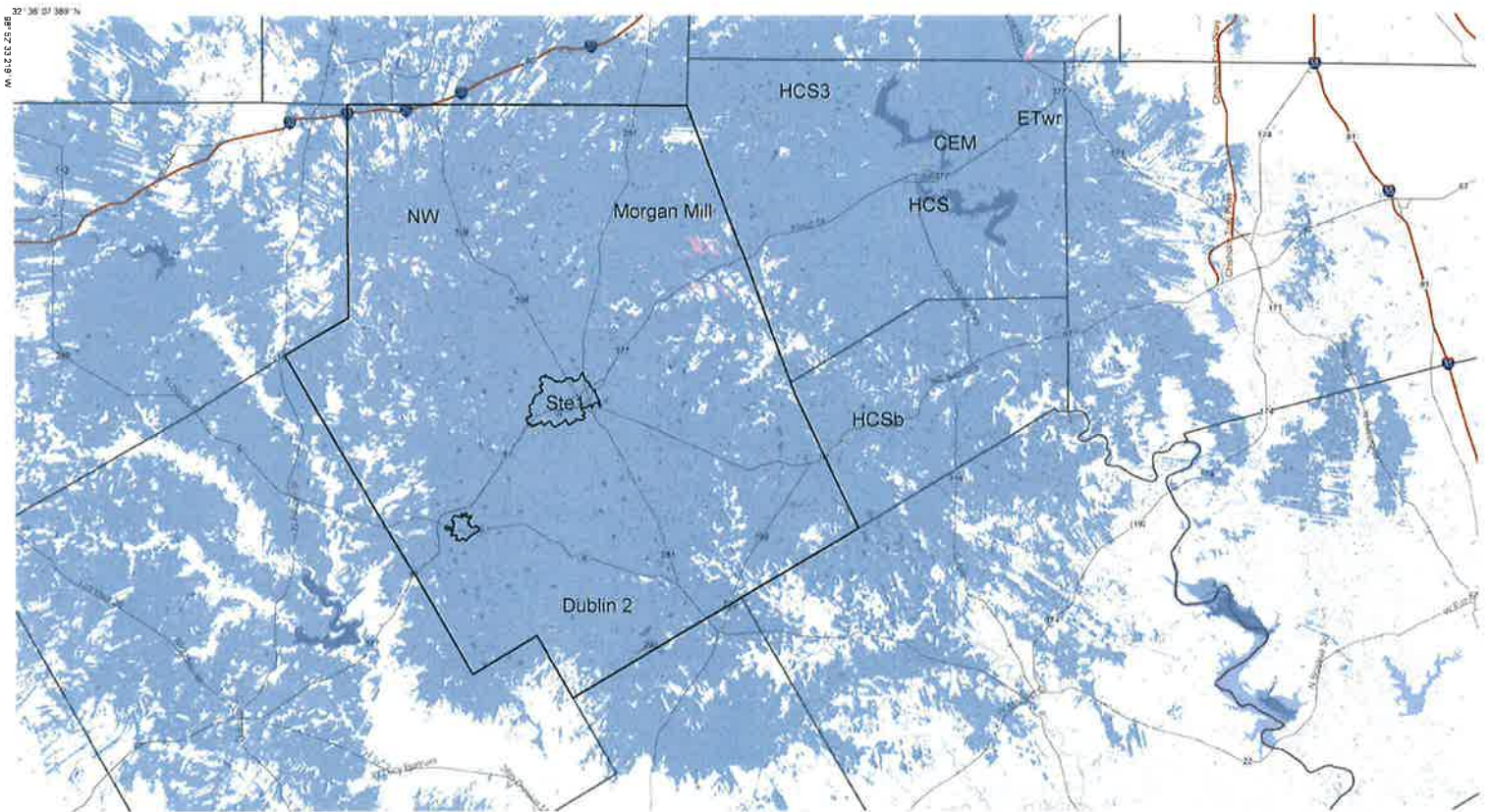
RAPTR II v8.2.129
Thursday, May 18, 2023 09:45:47
Project: Granbury Regional Radio Network
Figure: Erath County and GRRN Coverage - Mobile Talk Back
Project Number: 9A0JZ
Engineer: Jessica Barron
Map Scale: 1:395,915
Note: May depict coverage across the defined service area. Structural variability does not allow for guarantee of coverage in specific locations, but does represent graphically area percent coverage.

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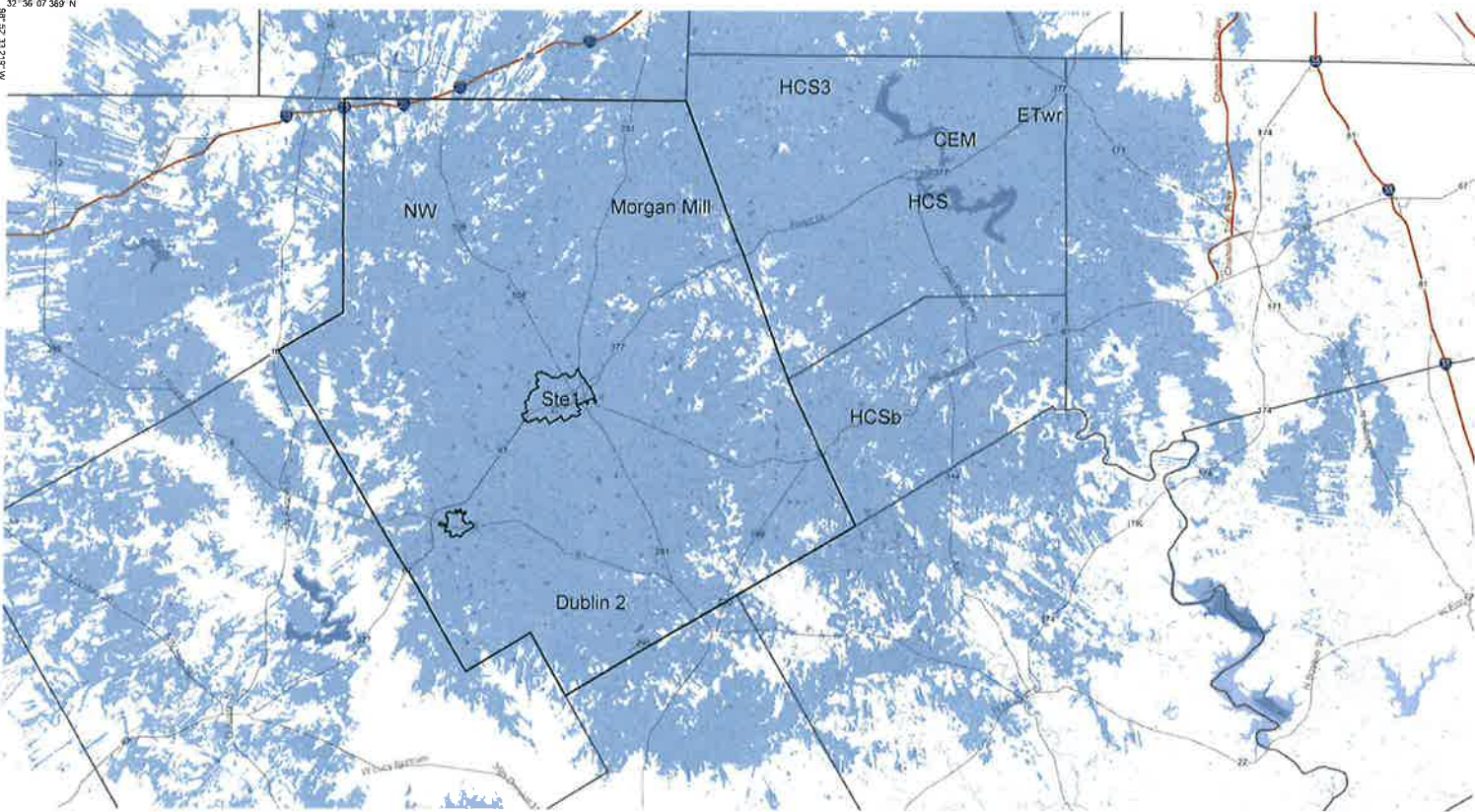
RAPTR II v8.2.128
Thursday, May 18, 2023 09:57:42
Project: Granbury Regional Radio Network
Figure: Erath County and GRRN Coverage - Portable Outdoor Talk Out
Project Number: 9A0JZ
Engineer: Jessica Barron
Map Scale: 1:395,913
Note: Area depicts coverage across the defined service area. Statistical variability does not allow for guarantee of coverage in specific locations, but does represent graphically where percent coverage

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RAPTR II v8.2.129
Thursday, May 18, 2023 10:15:32
Project: Granbury Regional Radio Network
Figure: Erath County and GRRN Coverage - Portable Outdoor Talk Back
Project Number: 8A0J2
Engineer: Jessica Barron
Map Scale: 1:305,913
Note: Map depicts coverage across the defined service area. Statistical variability does not allow for guarantee of coverage in specific locations, but does represent geographic area percent coverage.

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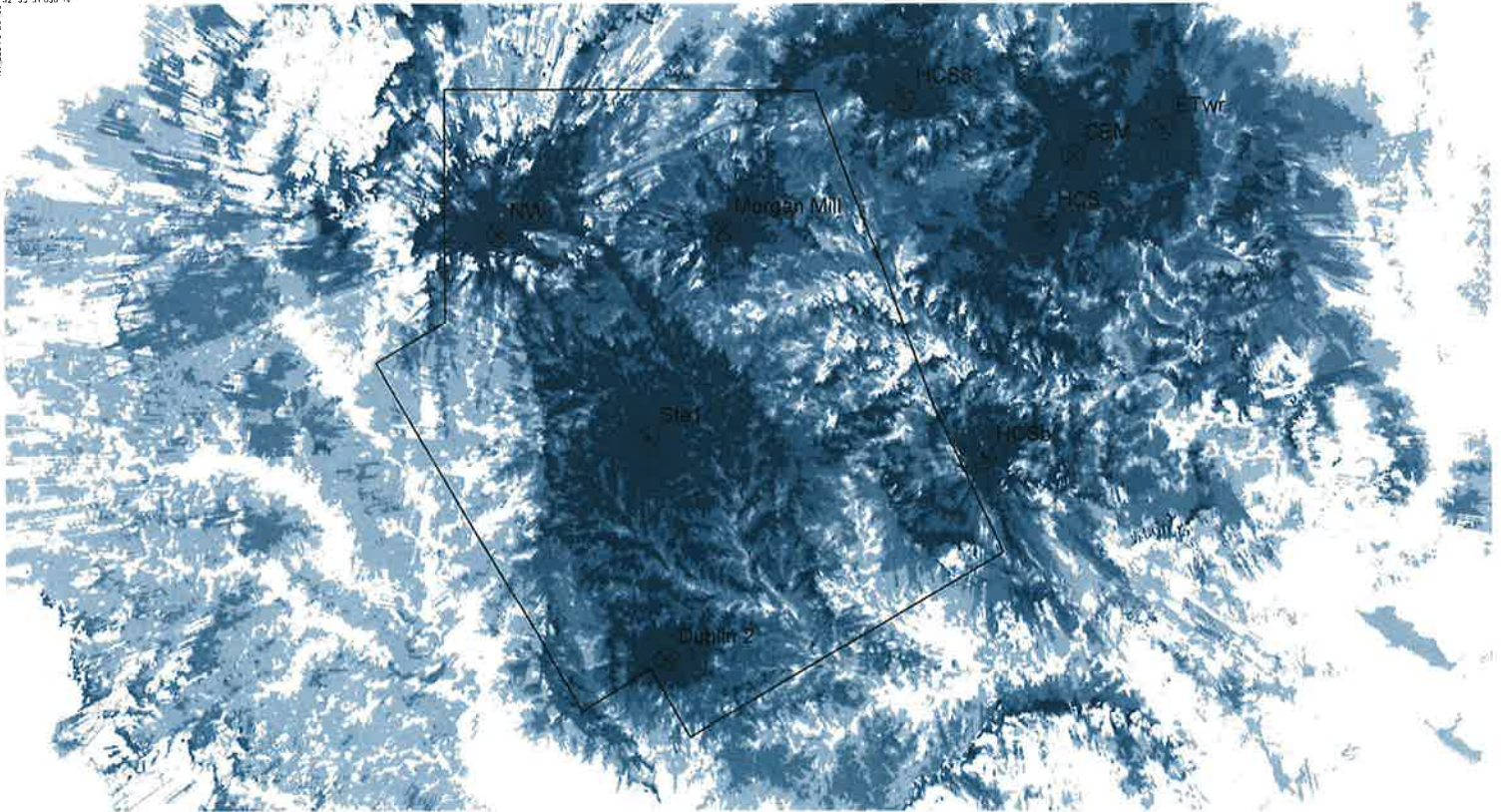


RAPTR II v9.1.134
Tuesday, July 11, 2023 11:24:30
Project: Granbury Regional Radio Network
Figure: Erath County, TX and GRRN Coverage - Portable Heat Map
Project Number: 8A0JZ
Engineer: Jessica Barron
Map Scale: 1:368,547
Note: Map depicts coverage across the defined service area. Signal availability does not allow for guarantees of coverage in specific locations, but does represent graphically a percentage coverage.

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32° 35' 31.036" N
96° 54' 05.15" W



IMPLEMENTATION

A Proven Methodology

L3Harris excels in the multifaceted implementation of mission critical radio communications systems to fulfill the specific needs of our customers and support their vital public safety operations as shown in the successful implementation of more than 150 P25 systems to date.

L3Harris aims toward addressing unexpected challenges that Erath County may face when joining the Granbury Regional Radio Network (hereafter referred to as Granbury). In order to fulfill this proposed implementation plan, the following assumptions conditions apply:

- > Granbury must have approved and agreed upon execution of the technical scope which L3Harris has provided to Granbury. Erath County accepts the proposed design as an addition to Granbury as-is.
 - The implementation team will kick-off the program by conducting an informal meeting with the County to review Granbury's as-contracted design.
 - Should Granbury modify their recommended architecture, Erath County contract – including specifically the proposed design and implementation plan – shall be modified by mutually agreed change order or amendment which may require an adjustment to pricing and schedule.
- > An Interlocal Agreement must be in place:
 - The City of Granbury, Texas, and Erath County, Texas, must have entered into an Interlocal Agreement allowing L3Harris to access and upgrade the Granbury P25 System for the purposes of Erath County's shared usage. If Erath County does not enter into an agreement with The City of Granbury for shared usage of the Granbury P25 System, then this contract will terminate and shall be considered null and void.
- > The successful implementation of Erath County project will be entirely contingent upon Granbury's program, scopes, and schedules as proposed and as contracted.
- > Any changes to the Granbury program could have an effect on the scope, schedule and/or cost of implementing the Erath County program, possibly resulting in modification of Erath County's implementation plan either as proposed or as contracted for. Erath County will then authorize L3Harris to issue a change order in accordance with the change order process documented in the proposal or resulting contract.
- > The system designed for Erath County inherits the feature characteristics and limitations of the Granbury system. Certain functionality may be unavailable to Erath County if the functionality is not in the scope of the Granbury system.
 - Should Erath County wish to add a feature to the Granbury core that is not purchased by Granbury itself, Erath County should contact Granbury for associated approval and cooperation. This may result in a modification to this contract by change order or amendment and may require an adjustment to pricing and schedule.

Upon contract signing, L3Harris will contact Erath County to ensure that an Interlocal Agreement with Granbury has been executed. Once that agreement is in place, the L3Harris proposal and

implementation teams will go through a 'contract hand-off' process. The proposal team coordinates with the assigned L3Harris implementation project manager and systems engineer to review the contractual obligations, key milestones, and other important issues. The process concludes with a hand-off of all necessary documentation to the L3Harris implementation team.

This document details the scope of work required for the project, through the following implementation phases:

- > Design
- > Production
- > Installation/Optimization
- > Acceptance Testing
- > Cutover
- > Final Acceptance

1	2	3	4	5	6
DESIGN	PRODUCTION	INSTALLATION/ OPTIMIZATION	ACCEPTANCE TESTING	CUTOVER	FINAL ACCEPTANCE
					

Design

KICK-OFF MEETING AND PRELIMINARY DESIGN REVIEW

The project manager initiates project implementation with a project kick-off meeting, followed by a preliminary design review. The L3Harris Team, and Erath County (the County), will mutually agree on the timing of these meetings. The objectives of the meeting include:

- > Introduction of all project participants
- > Review the roles of the project participants
- > Review the overall project scope, objectives, and deliverables
- > Review the current site status
- > Review customer owned site documentation
- > Review status of customer site acquisition efforts
- > Review the current frequency plan
- > Review the preliminary project schedule
- > Schedule site surveys with Erath County, and/or site owner designated representatives
- > Schedule vehicle survey

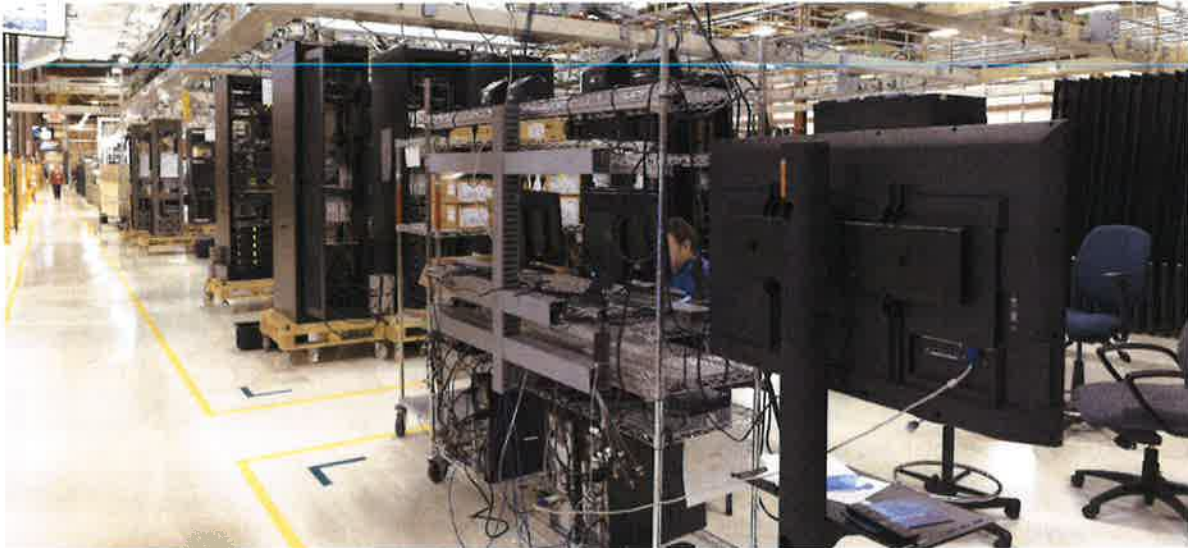
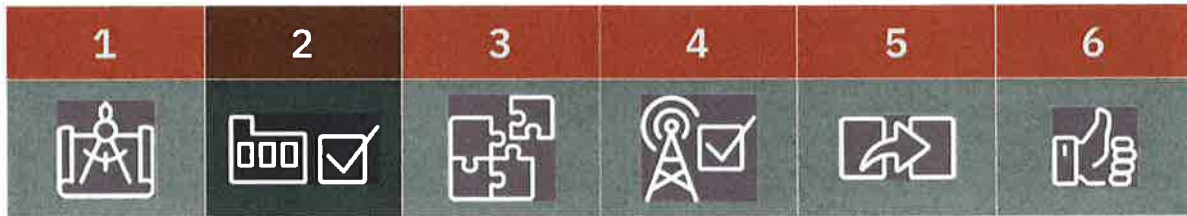
DETAILED DESIGN REVIEW (DDR)

The L3Harris Team uses the information obtained during the kick-off meeting, preliminary design review, and site surveys, along with regulatory and engineering documentation, to deliver the final system design at the DDR. The design drawings and documentation are presented during the DDR with Erath County.

Figure 1. Detailed Design Review Responsibility Matrix

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
KICK-OFF MEETING, SITE SURVEYS, AND DESIGN ACTIVITIES				
Finalize and execute Interlocal Agreement with Granbury – Following contract signing, L3Harris will contact the County to ensure that an Interlocal Agreement with Granbury has been executed. Once that agreement is in place, L3Harris will move forward with the following tasks:		X	2	Contract Signing
Provide location in appropriate conference room or training facility		X	6	Contract Signing
Assemble project team and complete handoff from proposal team	X			
Assemble customer team for kick-off meeting		X	2	Contract Signing
Provide a team and propose a schedule for site surveys	X			
Arrange access to sites and confirm site survey schedule		X	2	Contract Signing
Provide site-knowledgeable personnel (customer and site owner reps, as appropriate) to accompany the project team on site surveys		X	2	Contract Signing
Conduct site survey(s) and provide recommendations	X			
Provide site plans and applicable electrical and layout plans		X	2	Contract Signing
Provide current tower and foundation drawings, along with a current mapping of installed antennas and cabling sufficient to complete a structural analysis as determined by the structural analysis firm		X	2	Contract Signing
Perform structural analysis on existing towers, and provide results at DDR	X			
If tower(s) fails load analysis, strengthen, or replace tower (L3Harris can provide quotes to strengthen (if possible) or replace the tower)		X	30	Contract Signing
Conduct grounding inspection and provide recommendations	X			
Prepare one set of FCC license applications for Erath County's submission	X			
Submit FCC license applications and pay requisite fees	X		9	Contract Signing

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
File for FCC licensed frequencies that meet contour limits and fulfill the frequency plan in accordance with the project schedule		X	10	Contract Signing
Acquire property for any new customer-owned greenfield sites		X	9	Contract Signing
Arrange for site lease for any non-customer-owned sites		X	2	Contract Signing
DETAILED DESIGN REVIEW (DDR)				
Provide location to conduct DDR		X		
Assemble team to participate in DDR		X		
Travel to Erath County, TX, and present DDR material	X			
Approve the design following DDR meeting (within 5 business days)		X		
DETAILED DESIGN REVIEW DELIVERABLES				
System block diagrams	X			
List of deliverable equipment for each site	X			
Network connection plan and backhaul requirements	X			
Tower antenna placement drawings	X			
Antenna system drawings	X			
Coverage prediction maps	X			
Frequency plans	X			
Combiner plans	X			
Site plot drawings	X			
Shelter floor plan drawings	X			
Rack elevation drawings	X			
AC power and BTU requirements	X			
Tower antenna placement plan	X			
Preliminary cutover plan	X			
ATP	X			
Project schedule	X			
Acquire FCC licensed frequencies that meet contour limits and fulfill the frequency plan, in accordance with the project schedule		X		
DETAILED DESIGN REVIEW				
Present design	X			
Approve the design following DDR meeting (within 5 business days)		X	1	DDR Meeting



Production

SYSTEM INTEGRATION AND TEST – *FACTORY STAGING*

Immediately following the County's approval of the design, the L3Harris Team procures material and schedules system integration and test using its' material requirements planning (MRP) system. Our Customer Integration Center (CIC) assembles the RF equipment, integrates it with the key supplier components, and then tests each rack of equipment.

After assembly and test, each RF site rack will be configured; this entails loading customer-specific parameters and personalities into each piece of equipment, as applicable. The staging technicians make all network connections for each site's equipment including the RF site, dispatch, interoperability gateway, and other applicable subsystems. Ethernet and/or fiber cable connections are made to simulate backhaul networks and ensure the equipment connects to the network switches. The staging team programs radios to operate on a test user database. Next, system levels are verified and tested to confirm that system is ready for the internal factory acceptance test (IFAT). Once the staging team completes a dry run IFAT, the system is transitioned to the systems engineer for additional testing and verification.

Running the IFAT demonstrates the radio system functionality. The IFAT uses the functional acceptance test plan (FATP) tests appropriate in a factory staging environment. The FATP defines each test, with

instructions on how to set up and run the test, and compares the actual results to the expected results. The test team, consisting of the L3Harris systems engineer and the Erath County representatives, scores and initials each test.

Figure 2. System Integration and Test - Staging Responsibility Matrix

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Insert equipment delivery dates into the material planning system	X			
Place orders with the L3Harris' CIC and key suppliers	X			
Manufacture all infrastructure equipment	X			
Stage equipment (assemble, configure, and test) in L3Harris' CIC	X			

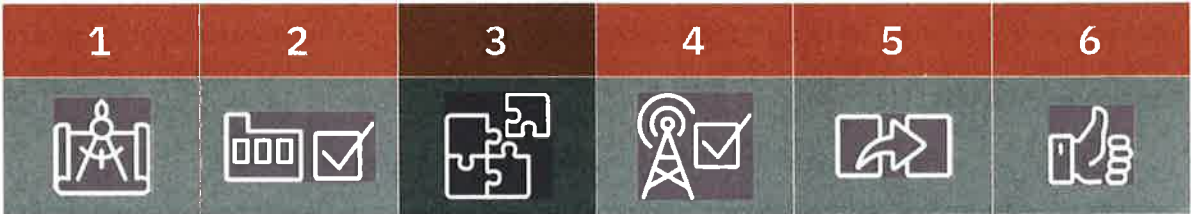
SHIPPING, WAREHOUSING, AND INVENTORY

After a successful internal factory acceptance test (IFAT), all system equipment is packaged using established procedures depending on the mode of transportation. The L3Harris Team engages appropriate freight carrier services to deliver the system to the address designated in the sales order. The system equipment will be warehoused, inventoried, and arranged by installation site at Erath County-provided location.

Subscriber equipment may ship with the system or separately as determined by the L3Harris Team.

Figure 3. Shipping & Inventory Responsibility Matrix

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Provide temporary storage near Erath County's location		X	9	Contract Signing
Package equipment and ship to storage area	X			
Inventory equipment	X			
Validate L3Harris equipment inventory		X	2	Equipment Ships
Sort equipment in preparation for site delivery and installation	X			



Installation/Optimization

L3HARRIS SUPPORTED SITE DEVELOPMENT

After DDR approval, the L3Harris Team places orders for site development materials and services. We coordinate shipments with the suppliers based on the project schedule to ensure parts and materials are available as needed at each site. Typically, the site development work occurs in parallel to radio system equipment manufacturing and staging. We then perform site development in accordance with L3Harris’ best practices and industry standards.

Figure 4. Site Development Overview. Balancing cost with long-term sustainability.

SITE NAME	TOWER	SHELTER	GENERATOR	UPS
Morgan Mill	New (To be built by North Central Texas Council of Governments)	New (Proposed as an option)	New (Proposed as an option)	New
Northwest	Existing	New (Proposed as an option)	Existing	New
Dublin 2	Existing	New (Proposed as an option)	New (Proposed as an option)	New
Prather Tower	Existing	Existing	Existing	Existing

ANTENNA SYSTEMS

In addition to the UPS material/install services, L3Harris’ site development work also includes antenna installation services at the site. A key aspect of the infrastructure equipment work is installation of the new P25 antenna systems. Installation of new antenna systems may occur on a newly constructed tower, existing towers in use by the customer as part of their legacy radio system, or on existing towers that are not part of the legacy radio system.

In the case of newly constructed customer-owned towers, antenna system installation is very straight forward per the system design. For towers that are part of the customer’s legacy system, new antenna system installations must consider the location of the existing customer antennas, and the timing of their removal. Antenna system installation on existing towers that are not part of the customer’s current system are not impacted by the presence of legacy system antennas. However, Erath County must coordinate the proposed location of the antenna systems on the tower with the tower owner when they obtain a site lease.

Our experienced tower crews place antennas on side arm mounts and support the RF cables with transmission line hangers secured to the tower cable ladder. The cables have ground kits that will be installed at the top, at the bottom as the cable leaves the tower, and at the end of the ice bridge before the cable entry port. Where applicable, grounding kits will be installed in the middle every 75 ft., so that there is no more than a 75-foot gap between grounds.

The tower crew runs coaxial cables down the tower cable ladder, and onto the ice bridge terminating just inside the cable entry port.

After installation, we sweep the receive and transmit transmission lines separately, and one sweep from the transmission line to the transmit antenna(s) as a system to confirm that the line and antenna(s) were properly connected, with an Anritsu Site Master, or equivalent cable-testing device, on the appropriate frequency band(s) to ensure proper performance.

We then record the baseline test data and provide it to Erath County. A copy will remain on-site for future reference.

NEW SHELTERS AT MORGAN MILL, NORTHWEST, & DUBLIN 2 – PROPOSED AS AN OPTION

Those sites that require new shelters include plans for the shelter, and how it will be positioned in the compound. Site plot drawings will show the position of the tower, shelter, generator, fuel tanks and site perimeter fencing.

We then obtain the site construction permit and construct the shelter foundation per the approved plans from the DDR process. We will deliver the shelter, off-load, and place it in the compound. We will then connect commercial power as well as generator standby power to the shelter. We will also install a new cable ice bridge to support the RF cables. The access road to the site must be accessible for large trucks, cranes, etc. to carry in and offload equipment.

In the event that an issue should arise in one, or all, of the following included but not limited to: obtaining the site construction permit, connecting the commercial power, generator, or ice bridge. Actions will need to be taken to mitigate impact to the schedule by the party responsible for the activity in the Responsibility Matrix through the change order process.

ERATH COUNTY SUPPORTED SITE DEVELOPMENT

Other than the aforementioned scope, L3Harris assumes that Erath County will be responsible for other site civils preparations and developments, which may include the following, but not limited to, adequate power (primary), grounding, network connectivity, equipment space, shelter construction etc. at the RF site and dispatch location for the new P25 infrastructure. The County will also be responsible for the decommissioning, removal, and disposal of legacy equipment from existing sites unless otherwise identified in the proposed radio system.

EXISTING TOWERS

For those sites that have existing towers, L3Harris Team will perform a structural analysis to verify that the towers have the capability to support the loads of the existing antennas and cables, as well as the

loads for any new antennas and cables. The L3Harris Team reviews each tower configuration, recommends the best location to mount the new antennas, and presents this data at the DDR.

In the event that the tower does not pass the structural analysis, action must be taken by the customer in the form of one or more of the following: remediate the tower to meet structural requirements, request a new site location from L3Harris, or build a new tower. L3Harris will be available on a contract basis to help resolve the issue through the change order process.

EXISTING SHELTERS

Sites that have existing shelters have been physically inspected and floor space calculations performed to verify that there is adequate space to install new equipment racks. We will also review the existing electrical power, HVAC, and standby power systems, and will discuss necessary upgrades at the DDR.

In the event that the shelter does not provide; adequate space, weather resistance, cannot carry the weight load of the equipment therein, HVAC, or standby power the customer will need to remediate the shelter. In the event that existing electrical power is insufficient in the ability to handle the new draw, the customer will need to take action. L3Harris will be available on a contract basis to help resolve the issue through the change order process.



GROUNDING AND LIGHTNING PROTECTION

At all new sites, and existing sites identified in this implementation plan, we will measure the site grounding system resistance using the three-point “fall of potential” testing procedure (where possible). This procedure requires the following:

- > Powering down the entire site and any co-located sites (including any co-located equipment at the site)
- > Disconnecting the AC power utility side neutral by an electrician
- > Conducting - where there is enough open space - the test equivalent to five to ten times the diagonal of the fenced compound

At existing sites, it is generally not practical or even possible to perform an accurate three-point “fall of potential” test. After contract award, L3Harris will perform a ground system inspection to determine the suitability of existing ground systems. L3Harris will identify and make recommendations for any ground system improvements or deficiencies identified during the ground system inspection. L3Harris can provide a quotation to perform any recommended ground system improvements or Erath County may elect to handle the issues directly.

If a three-point “fall of potential” test is not possible, L3Harris can perform “clamp-on” ground resistance test if there is only one AC power utility feed to the site. In this case, the site and any co-located sites can be powered down or put on backup power; then the AC power utility side incoming neutral can be accessed).

For each new external grounding system installed or existing ground system inspected, we will develop and provide Erath County a design that meets the L3Harris Site Grounding and Lightning Protection AE/LZT 123 4618/1 guidelines.

Figure 5. General Responsibility Matrix

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Coordinate with federal, state, and local government agencies, as required		X	9	Contract Signing
Provide access to all buildings and sites, including temporary ID badges for L3Harris project team		X	2	Contract Signing
Provide parking permits for L3Harris project team for any restricted parking areas		X	1	Contract Signing
Provide adequate road access for delivery vehicles		X	9	Contract Signing
Arrange for temporary parking to off-load equipment at all buildings and sites		X	9	Contract Signing
Clean up site and remove all L3Harris’ installation debris	X			
Remove any hazardous material found on site		X	9	Contract Signing
Ensure that no utility transformers additions or upgrades will be required to provide the adequate AC power needed for each site		X	9	Contract Signing
Comply with FCC OET65 Signage requirements (https://www.fcc.gov/general/oet-bulletins-line)		X	7	Contract Signing
Develop sites and install materials in accordance with industry and L3Harris standards	X			

Figure 6. Morgan Mill – Existing Customer-Owned Sites Responsibility Matrix

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
CUSTOMER-OWNED SITE TASKS				
Obtain any necessary zoning approval for site changes		X	15	Contract Signing
Perform physical path surveys for each microwave path (microwave path studies are not final until a physical survey is made)	X			
Provide existing site plans		X	3	Contract Signing
Conduct grounding inspection and provide recommendations	X			
Conduct site survey(s) and provide recommendations	X			
NEW TOWER (TO BE BUILT BY TO BE BUILT BY NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS)				
Identify specific tower attachment points to mount new antennas per the system design	X			
Confirm availability of tower attachment points for L3Harris antennas		X	5	Contract Signing
Provide space on existing tower to mount new system antennas at L3Harris specified locations		X	5	Contract Signing
Ensure adequate space is available on cable ice bridge, and tower cable ladders, to support new cable runs		X	5	Contract Signing
Install new antenna(s) using appropriate side arms and mounting hardware	X			
Install antenna coax, connectors, and jumpers, using cable clamps to properly secure cable to tower, and add grounding kits at the top, bottom, and on ice bridge	X			
Install new tower top amplifiers	X			
Install antenna lightning protection devices on each transmission line LMR run after it enters shelter via cable entry port; ground device to main ground bus bar	X			
Install new microwave dish(es) on pipe mounts with anti-sway kits	X			
Install new microwave waveguide or coaxial feed lines, secure to cable ladder(s), and add grounding kits at the top, bottom, and on ice bridge	X			
Tag and identify each new antenna line	X			
Sweep test each new antenna line in accordance with L3Harris' "Transmission Line Analysis (Antenna Sweep) Procedure"	X			
NEW SHELTER (PROPOSED AS AN OPTION)				

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Stake out the desired location for new shelter	X			
Have an architectural firm develop site compound plot drawings of compound showing tower, new shelter, generator, and fuel tank locations	X			
Obtain any required zoning approvals		X	2	DDR Meeting
Prepare and submit construction permits for new shelter	X			
Arrange for and pay for electric power/service at each site getting a new shelter or improved electrical service. Terminate AC power within 50 ft. of new shelter. Provide utility transformers, if necessary, to provide the required AC power.		X	2	DDR Meeting
Prepare and submit electrical permits	X			
Level land, construct silt fences, and remove weeds and brush	X			
Construct full-slab shelter foundation	X			
Transport, off-load, and set new shelter	X			
Trench in 200A single phase 240 V AC electrical service to new shelter	X			
Construct exterior ground system for new shelter and tie into existing tower, generator, fuel tank, and fence corner posts ground	X			
Prepare and submit electrical permits for UPS system on behalf of the County, if required	X			
Provide electrical circuits from distribution breaker panel to UPS' unit, conduit, and wire outlets above new racks		X		
Provide and install new UPS with bypass switch	X			
Provide floor space at the network center for new system equipment		X	1	Equipment Ships
Provide demarcation blocks for connection to existing legacy radios to be used in interoperability system		X	1	Equipment Ships
NEW GENERATOR (PROPOSED AS AN OPTION)				
Stake out the desired location for new generator and LP tank pad	X			
Have an architectural firm develop site compound plot drawings of compound showing tower, shelter, new generator, and LP tank locations	X			
Obtain all required zoning permits and approvals		X	2	DDR Meeting
Prepare and submit construction permits for new generator	X			
Prepare and submit electrical permits	X			

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Level land, construct silt fences, and remove weeds and brush	X			
Construct/pour generator and fuel tank pads	X			
Transport, off-load, and set new generator on pad	X			
Trench in generator electrical service and control circuits to shelter-mounted ATS	X			
Transport, off-load, and set new LP-fuel tank on pad	X			
Trench in fuel lines between tank and generator	X			
Ground generator and fuel tank to tower/shelter ground system	X			
Fill generator fuel tank (first fill)	X			
Provide factory generator technician for first-start service	X			

Figure 7. Prather Tower– Existing Collocation Site Responsibility Matrix

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
COLLOCATED SITE TASKS				
Arrange for access to third party collocated site		X	1	Contract Signing
Negotiate and obtain lease (or modify existing lease) for third party co-location site, ensuring the site lease includes required space on the tower, cable ice bridge, and tower cable ladders to support new cable runs, space-in compound for new shelter, generator, and fuel tank		X	2	DDR Meeting
Ensure co-location agreements address site compound space requirements to include confirmation that no subsurface obstructions preclude running conduits for power or leased circuits, as well as running lines between Erath County's shelters, generators, and fuel tanks		X	2	DDR Meeting
Arrange for third-party site owner to perform tower analysis	X			
Perform physical path surveys for each microwave path (microwave path studies are not final until a physical survey is made)	X			
Provide existing site plans		X	2	Contract Signing
Conduct grounding inspection and provide recommendations	X			
Conduct site survey(s) and provide recommendations	X			
EXISTING TOWER				
Identify specific tower attachment points to mount new antennas per the system design	X			

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Confirm availability of tower attachment points for L3Harris antennas		X	2	Contract Signing
Provide space on existing tower to mount new system antennas at L3Harris-specified locations (defined in site lease)		X	2	DDR Meeting
Ensure adequate space is available on cable ice bridge, and tower cable ladders, to support new cable runs		X	2	DDR Meeting
Install new antenna(s) using appropriate 6 ft. side arms and mounting hardware	X			
Install antenna coax, connectors, and jumpers, using cable clamps to properly secure cable to tower, and add grounding kits at the top, bottom, and on ice bridge	X			
Install a new tower top amplifier	X			
Install antenna lightning protection devices on each transmission line LMR run after it enters shelter via cable entry port; ground device to main ground bus bar	X			
Install new microwave dish(es) on pipe mounts with anti-sway kits	X			
Install new microwave waveguide or coaxial feed lines, secure to cable ladder(s), and add grounding kits at the top, bottom, and on ice bridge	X			
Tag and identify each new antenna line	X			
Sweep test each new antenna line in accordance with L3Harris' "Transmission Line Analysis (Antenna Sweep) Procedure"	X			
EXISTING SHELTER				
Provide floor space in existing RF shelters for new equipment racks used in the new design		X	2	Contract Signing
Ensure shelter/equipment room utility AC electrical power, single-point ground system HVAC, and backup generator power meets L3Harris' standards		X	2	Equipment Ships
Provide cable entry ports for new cable runs		X		
Upgrade existing interior ground system that meets L3Harris' grounding standards	X			
Responsible for the cost to remediate all grounding at shelter, tower, compound, and facilities to meet L3Harris' grounding standards (upon request, L3Harris can provide quote to remediate grounding conditions)		X		

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Provide cable ladder and overhead electrical connections for new equipment row		X		
Prepare and submit electrical permits for UPS system on behalf of the County, if required (for Northwest site only)	X			
Provide electrical circuits from distribution breaker panel to UPS' unit, conduit, and wire outlets above new racks (for Northwest site only)		X		
Provide and install new UPS with bypass switches (for Northwest site only)	X			
Provide floor space at the dispatch center and network center for new system equipment		X	1	Equipment Ships
Provide demarcation blocks for connection to existing legacy radios to be used in interoperability system		X	1	Equipment Ships

Figure 8. Northwest – Existing Collocation Site Responsibility Matrix

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
COLLOCATED SITE TASKS				
Arrange for access to third party collocated site		X	1	Contract Signing
Negotiate and obtain lease (or modify existing lease) for third party co-location site, ensuring the site lease includes required space on the tower, cable ice bridge, and tower cable ladders to support new cable runs, space-in compound for new shelter, generator, and fuel tank		X	2	DDR Meeting
Ensure co-location agreements address site compound space requirements to include confirmation that no subsurface obstructions preclude running conduits for power or leased circuits, as well as running lines between Erath County's shelters, generators, and fuel tanks		X	2	DDR Meeting
Arrange for third-party site owner to perform tower analysis	X			
Perform physical path surveys for each microwave path (microwave path studies are not final until a physical survey is made)	X			
Provide existing site plans		X	2	Contract Signing
Conduct grounding inspection and provide recommendations	X			
Conduct site survey(s) and provide recommendations	X			
EXISTING TOWER				
Identify specific tower attachment points to mount new antennas per the system design	X			

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Confirm availability of tower attachment points for L3Harris antennas		X	2	Contract Signing
Provide space on existing tower to mount new system antennas at L3Harris-specified locations (defined in site lease)		X	2	DDR Meeting
Ensure adequate space is available on cable ice bridge, and tower cable ladders, to support new cable runs		X	2	DDR Meeting
Install new antenna(s) using appropriate 6 ft. side arms and mounting hardware	X			
Install antenna coax, connectors, and jumpers, using cable clamps to properly secure cable to tower, and add grounding kits at the top, bottom, and on ice bridge	X			
Install a new tower top amplifier	X			
Install antenna lightning protection devices on each transmission line LMR run after it enters shelter via cable entry port; ground device to main ground bus bar	X			
Install new microwave dish(es) on pipe mounts with anti-sway kits	X			
Install new microwave waveguide or coaxial feed lines, secure to cable ladder(s), and add grounding kits at the top, bottom, and on ice bridge	X			
Tag and identify each new antenna line	X			
Sweep test each new antenna line in accordance with L3Harris' "Transmission Line Analysis (Antenna Sweep) Procedure"	X			
NEW SHELTER (PROPOSED AS AN OPTION)				
Stake out the desired location for new shelter	X			
Have an architectural firm develop site compound plot drawings of compound showing tower, new shelter, generator, and fuel tank locations	X			
Obtain any required zoning approvals		X	2	DDR Meeting
Prepare and submit construction permits for new shelter	X			
Arrange for and pay for electric power/service at each site getting a new shelter or improved electrical service. Terminate AC power within 50 ft. of new shelter. Provide utility transformers, if necessary, to provide the required AC power.		X	2	DDR Meeting
Prepare and submit electrical permits	X			
Level land, construct silt fences, and remove weeds and brush	X			

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Construct full-slab shelter foundation	X			
Transport, off-load, and set new shelter	X			
Trench in 200A single phase 240 V AC electrical service to new shelter	X			
Construct exterior ground system for new shelter and tie into existing tower, generator, fuel tank, and fence corner posts ground	X			
Prepare and submit electrical permits for UPS system on behalf of the County, if required	X			
Provide electrical circuits from distribution breaker panel to UPS' unit, conduit, and wire outlets above new racks		X		
Provide and install new UPS with bypass switch	X			
Provide floor space at the network center for new system equipment		X	1	Equipment Ships
Provide demarcation blocks for connection to existing legacy radios to be used in interoperability system		X	1	Equipment Ships

Figure 9. Dublin 2 – Existing Collocation Site Responsibility Matrix

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
COLLOCATED SITE TASKS				
Arrange for access to third party collocated site		X	1	Contract Signing
Negotiate and obtain lease (or modify existing lease) for third party co-location site, ensuring the site lease includes required space on the tower, cable ice bridge, and tower cable ladders to support new cable runs, space-in compound for new shelter, generator, and fuel tank		X	2	DDR Meeting
Ensure co-location agreements address site compound space requirements to include confirmation that no subsurface obstructions preclude running conduits for power or leased circuits, as well as running lines between Erath County's shelters, generators, and fuel tanks		X	2	DDR Meeting
Arrange for third-party site owner to perform tower analysis	X			
Perform physical path surveys for each microwave path (microwave path studies are not final until a physical survey is made)	X			
Provide existing site plans		X	2	Contract Signing
Conduct grounding inspection and provide recommendations	X			

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Conduct site survey(s) and provide recommendations	X			
EXISTING TOWER				
Identify specific tower attachment points to mount new antennas per the system design	X			
Confirm availability of tower attachment points for L3Harris antennas		X	2	Contract Signing
Provide space on existing tower to mount new system antennas at L3Harris-specified locations (defined in site lease)		X	2	DDR Meeting
Ensure adequate space is available on cable ice bridge, and tower cable ladders, to support new cable runs		X	2	DDR Meeting
Install new antenna(s) using appropriate 6 ft. side arms and mounting hardware	X			
Install antenna coax, connectors, and jumpers, using cable clamps to properly secure cable to tower, and add grounding kits at the top, bottom, and on ice bridge	X			
Install a new tower top amplifier	X			
Install antenna lightning protection devices on each transmission line LMR run after it enters shelter via cable entry port; ground device to main ground bus bar	X			
Install new microwave dish(es) on pipe mounts with anti-sway kits	X			
Install new microwave waveguide or coaxial feed lines, secure to cable ladder(s), and add grounding kits at the top, bottom, and on ice bridge	X			
Tag and identify each new antenna line	X			
Sweep test each new antenna line in accordance with L3Harris' "Transmission Line Analysis (Antenna Sweep) Procedure"	X			
NEW SHELTER (PROPOSED AS AN OPTION)				
Stake out the desired location for new shelter	X			
Have an architectural firm develop site compound plot drawings of compound showing tower, new shelter, generator, and fuel tank locations	X			
Obtain any required zoning approvals		X	2	DDR Meeting
Prepare and submit construction permits for new shelter	X			
Arrange for and pay for electric power/service at each site getting a new shelter or improved electrical service. Terminate		X	2	DDR Meeting



TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
AC power within 50 ft. of new shelter. Provide utility transformers, if necessary, to provide the required AC power.				
Prepare and submit electrical permits	X			
Level land, construct silt fences, and remove weeds and brush	X			
Construct full-slab shelter foundation	X			
Transport, off-load, and set new shelter	X			
Trench in 200A single phase 240 V AC electrical service to new shelter	X			
Construct exterior ground system for new shelter and tie into existing tower, generator, fuel tank, and fence corner posts ground	X			
Prepare and submit electrical permits for UPS system on behalf of the County, if required	X			
Provide electrical circuits from distribution breaker panel to UPS' unit, conduit, and wire outlets above new racks		X		
Provide and install new UPS with bypass switch	X			
Provide floor space at the network center for new system equipment		X	1	Equipment Ships
Provide demarcation blocks for connection to existing legacy radios to be used in interoperability system		X	1	Equipment Ships
NEW GENERATOR (PROPOSED AS AN OPTION)				
Stake out the desired location for new generator and LP tank pad	X			
Have an architectural firm develop site compound plot drawings of compound showing tower, shelter, new generator, and LP tank locations	X			
Obtain all required zoning permits and approvals		X	2	DDR Meeting
Prepare and submit construction permits for new generator	X			
Prepare and submit electrical permits	X			
Level land, construct silt fences, and remove weeds and brush	X			
Construct/pour generator and fuel tank pads	X			
Transport, off-load, and set new generator on pad	X			
Trench in generator electrical service and control circuits to shelter-mounted ATS	X			
Transport, off-load, and set new LP-fuel tank on pad	X			
Trench in fuel lines between tank and generator	X			

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Ground generator and fuel tank to tower/shelter ground system	X			
Fill generator fuel tank (first fill)	X			
Provide factory generator technician for first-start service	X			

INFRASTRUCTURE INSTALLATION

The L3Harris Team develops the installation plan during the detailed design phases of the project and presents it to Erath County for review and approval. The installation plan includes floor plan drawings, equipment rack-up drawings, antenna location details, grounding plans, and installation procedures based on site surveys conducted by the team or designated subcontractors. The installation plan helps drive the activities of the project team, minimizing installation conflicts, and ensures that system implementation proceeds efficiently. The project team takes great care to ensure there is minimal disruption in service when installing the new 700 MHz P25 system in existing equipment locations.

Site equipment installations follow industry standards, including L3Harris Grounding and Lightning Protection. We review the installation work after it is complete to ensure we followed these standards.

Figure 10. System Infrastructure Installation Responsibility Matrix

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Deliver equipment to each site	X			
Install equipment, connect to existing ground system, and apply power	X			
Connect all RF cables	X			
Interface to network, verify network connectivity	X			
Set all P25 system levels and parameters	X			
Connect all P25 system alarms	X			
Upgrades to the City-provided logging recorder system and its supporting tools		X		

INFRASTRUCTURE EQUIPMENT

Upon completion of the tower work, installation crews install the base-stations, and associated equipment. The MASTR V P25 trunked base station, microwave, and associated equipment typically mounts in 86-inch standard aluminum EIA 19-inch open-frame racks or EIA 19-inch enclosed cabinets. The RF connections extend to the coaxial cables using appropriately sized jumper cables.

L3Harris assumes that Erath County-provided shelters will accommodate the height of these racks and allow them to position the desired 36 inches of free aisle space (in front and in the rear). Racks and cabinets are anchored to the floor using at least four anchor points.

Once the infrastructure racks are secured, we ground and connect them to power, and technicians verify proper levels and settings, preparing the site for the acceptance test.

L3Harris will work with Erath County personnel and/or their representatives to prepare for their participation in acceptance testing. After the test is complete, the installation team records the alignment and test data and provides copies to Erath County. Copies of the individual site alignment and test data will be available at the sites.

Installation crews also install and commission the network routers & switches, dispatch consoles, and other infrastructure equipment, per the approved design package.

Upgrades to the County-provided logging recorder system and its supporting tools are outside the scope of this proposal. Please note that it is the County's responsibility to verify the targeted logging recorder is compatible and has been tested against VIDA SR10A.7 core; L3Harris is not responsible for any logging recorder upgrades if required.

OPTIMIZATION

Upon installation of infrastructure equipment, the system engineer(s) works with the on-site technicians to optimize the equipment in preparation for acceptance testing.

Simulcast – Per Simulcast cell, includes verify launch timing, verify timing drive test, making iterative adjustments, repeat timing drive test, if needed, and verify configuration, test voter, test network latency, verify network switches, and dispatch console operation.

L3Harris will conduct a preliminary acceptance test to determine that the systems are fully optimized and ready for the acceptance test with Erath County.

Figure 11. System Optimization Responsibility Matrix

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Prepare all installed sites for site inspections	X			
Verify microwave/backhaul system is functional and meets reliability specifications	X			
Provide frequencies to use for optimization and testing (if frequencies are currently in use in existing system)		X	1	Coverage Test Plan Approved
Verify P25 system levels and parameters are set	X			
Verify P25 system alarm and system monitoring system are operational	X			
Verify system database is installed and operating correctly	X			
Verify proper dispatch operation	X			
Verify proper P25 functional operation	X			
Verify proper network switching operation	X			

USER EQUIPMENT

Prior to system cutover the installation crews can begin programming and installation of the user equipment. This project includes the following equipment:

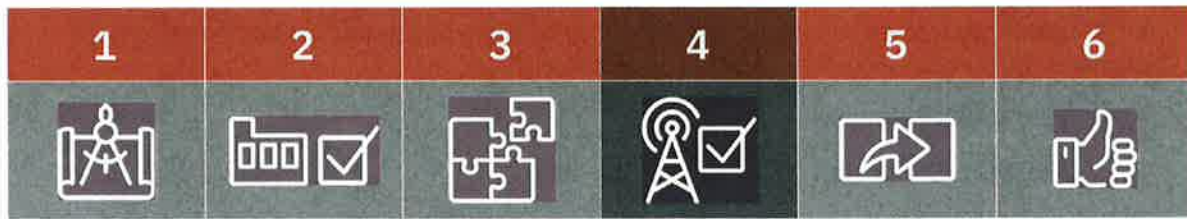
- > (216) XL-200P Portables
- > (138) XL-200M Mobiles

Mobile radio installations will be performed in accordance with the guidelines outlined in each radio models installation manual.

Should the user equipment model numbers or mobile radio unit vehicle types change from the items listed above, a change order will be required.

Figure 12. User Equipment Matrix

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Program and distribute L3Harris portable units with accessories	X			
Provide a central facility for mobile vehicle programming, workbench space for portable radio programming, and storage for radios		X		At time of install
Provide a continuous supply of vehicles to meet the project schedule timeline or		X		At time of install
Provide cost and schedule relief for crew demobilization and remobilization for non-continuous supply of vehicles or for installations requested outside of the schedule		X		At time of install
Program and install L3Harris mobile units	X			
Provide pre and post installation vehicle assessments, presenting installation documentation for customer acceptance for each vehicle	X			
Provide a representative to review installation documentation and provide acceptance for each vehicle		X		At time of install



Acceptance Testing

We will perform systems acceptance testing per the agreed upon acceptance test plan (ATP). The L3Harris Team notifies Erath County when installation and optimization are complete, and the system is ready for acceptance testing.

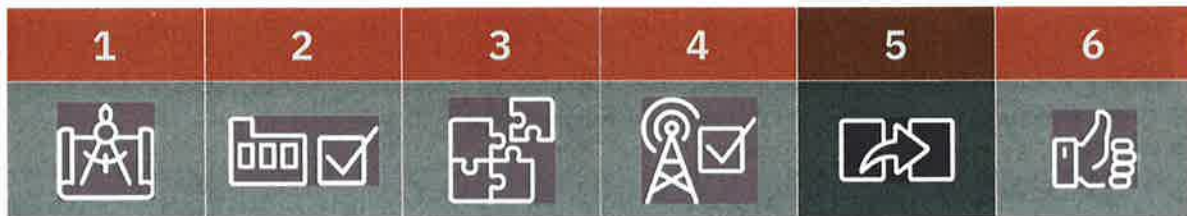
The system engineer provides documentation defining each of the test areas. The ATP procedures contain a short description, test methodology, and a record form for logging results and acceptance signatures for each test. A punch list is used to document any issues found, so the team can quickly resolve them. Follow-up documents will show the correction of open items. Upon satisfactory completion of each testing phase, the project manager will present the system acceptance documentation to Erath County's project manager(s). With Erath County's approval, the L3Harris team will proceed with cutover.

L3Harris will submit initial system acceptance documentation for Erath County to sign, marking the successful conclusion of acceptance testing, and readiness for system cutover.

Figure 13. Acceptance Testing Responsibility Matrix

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Provide appropriate team members to participate in acceptance tests		X		
Inspect each site (RF, dispatch), noting discrepancies on a punch list	X			
Submit site inspection results	X			
Approve site inspection results		X	1	Inspection Checklist Completion
Perform functional ATP on radio system, dispatch consoles, network monitoring, and user radios	X			
Submit functional ATP results	X			
Sign approval of functional ATP results (within 5 business days)		X	1	ATP Completion
Provide team members to participate in coverage tests		X		
Provide test vehicles and drivers for acceptance testing	X			
Provide new test radios for automatic coverage tests as defined in the CATP		X	1	CATP Signing

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Perform automated coverage test of P25 system per system contract	X			
Provide new test radios for voice quality test as defined in the CATP		X	1	CATP Signing
Perform voice quality test of P25 system per system contract	X			
Provide new test radios for building coverage test as defined in the CATP		X	1	CATP Signing
Perform building coverage test of P25 system per system contract	X			
Submit coverage ATP results	X			
Sign approval of coverage ATP results		X	1	CATP Signing
Submit letter of system acceptance	X			
Sign letter of system acceptance		X	1	CATP Signing
Approve cutover plan		X	5	CATP Signing
Notify users of system cutover date		X	1	Approval of Cutover Plan
Proceed with system cutover according to cutover plan	X			



Cutover Approach

L3Harris and Erath County will work together to prepare the cutover plan prior to user integration.

L3Harris is certain that Erath County and L3Harris share the same overarching goals in the process – that there are no missed calls, and that each agency maintains adequate departmental communications during the cutover process.

Other than the bulleted items below, the cutover plan may also include topics such as the timing of the cutover, systematic fleet-by-fleet or agency-by-agency users' cutover, initial trial window or live system test window for the first batch of migrated users, milestones during cutover process, and finally, a fallback plan in case of any uncertainty. The entire cutover plan will be broken into multiple phases to ensure the smooth transition to new system.

The cutover plan will address:

- > **Timing and Use of New and Existing RF Frequencies** – The migration of existing frequencies must be carefully planned and balanced against traffic loading to minimize the impact to end users.
- > **System User Migration** – A transition plan will be jointly developed to schedule the public safety users obtaining new radios and migrating the frequencies from the legacy system to the new system.
- > **User Unit Personalities** – L3Harris will assist the Erath County's project manager to develop a series of user profiles for the radio system users. These profiles will determine the user defined parameters for each agency and radio. Project worksheets will be filled out and approved, then forwarded to Erath County for creation of individual personality files.
- > **Dispatch Support During Cutover** – Since there may be a period when dispatchers may need to coordinate users on both systems, an interim solution will be created where the new dispatcher positions can talk to field units on both the existing system and the new system during the transition phase.
- > **Dispatch Center Cutover** – Operation of the new consoles will be verified before cutover is to begin. L3Harris will work closely with the Erath County's project manager to coordinate the dispatch center cutover with the Erath County cutover.
- > **Dispatcher and Radio User Training** - Radio users will need to be trained on the new subscriber radios' operation. Our training team will help Erath County develop quick-reference materials and produce seminar-oriented train-the-trainer materials to facilitate this.

The cutover plan will establish the methodology on how to share the channels with the old system and the new system as the users are migrated onto it. Careful coordination of frequency use for the old and new system must be followed. Plans and schedules for turning off channels on the existing system will be established so that the channels can be rotated into service and made operational on the new system for some period to permit setup, optimization, and testing.

Because the new system would have already undergone extensive testing, the probability that the new system would need to be taken down for repairs during cutover will be very low. However, provisions and plans for reverting to the old legacy system will be established in the event it becomes necessary. These plans will be worked out with Erath County and put into action only with proper consent of the Erath County's project director.

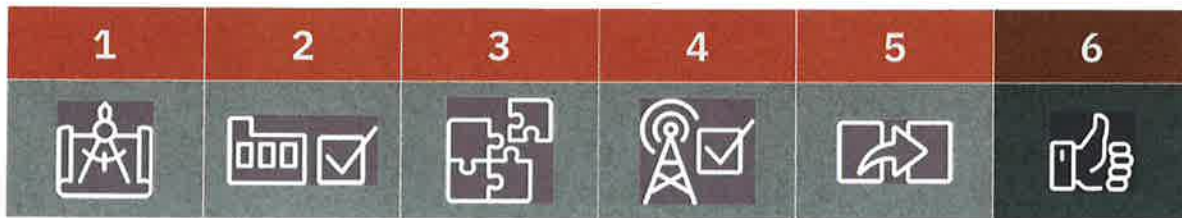
Reaching a final cutover plan is typically the result of several customer reviews that include the Erath County's representatives, and department heads.

After completion of cutover planning, the L3Harris Team and Erath County agree on a day and time for cutover to begin. The L3Harris Team will be present with Erath County to provide any last-minute answers to users as they go live on the new system.

Figure 14. Cutover Responsibility Matrix

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Identify system administrators		X	9	Contract Signing
Provide administrator training	X			
Attend system administrator training		X		In accordance with approved Training location(s) and schedule
Provide workshops for talkgroup planning	X			
Attend workshop for talkgroup planning		X		In accordance with approved Training location(s) and schedule
Provide training on system database creation	X			
Develop user training plan and schedule with L3Harris (collaborative effort)	X	X	4	DDR Meeting
Develop dispatcher training plan and schedule with L3Harris (collaborative effort)	X	X	4	DDR Meeting

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Develop user programming profiles with L3Harris (collaborative effort)	X	X	4	DDR Meeting
Develop console programming profiles with L3Harris (collaborative effort)	X	X	4	DDR Meeting
Develop and enter system database		X	4	DDR Meeting
Define which interoperability channels are desired during cutover		X	8	Approval of Cutover Plan
Provide radio user training	X			
Attend radio user training		X		In accordance with approved Training location(s) and schedule
Provide dispatcher training	X			
Attend dispatcher training		X		In accordance with approved Training location(s) and schedule



Final Acceptance

FINAL ACCEPTANCE

Upon the successful completion of acceptance tests, cutover, and submission of the final drawing package, the project manager submits the final system acceptance letter for Erath County to sign. With the final acceptance, the project manager arranges a meeting with the field service team to review maintenance support during the warranty period. The L3Harris Team provides the contact information and procedures used to obtain service during the warranty period.

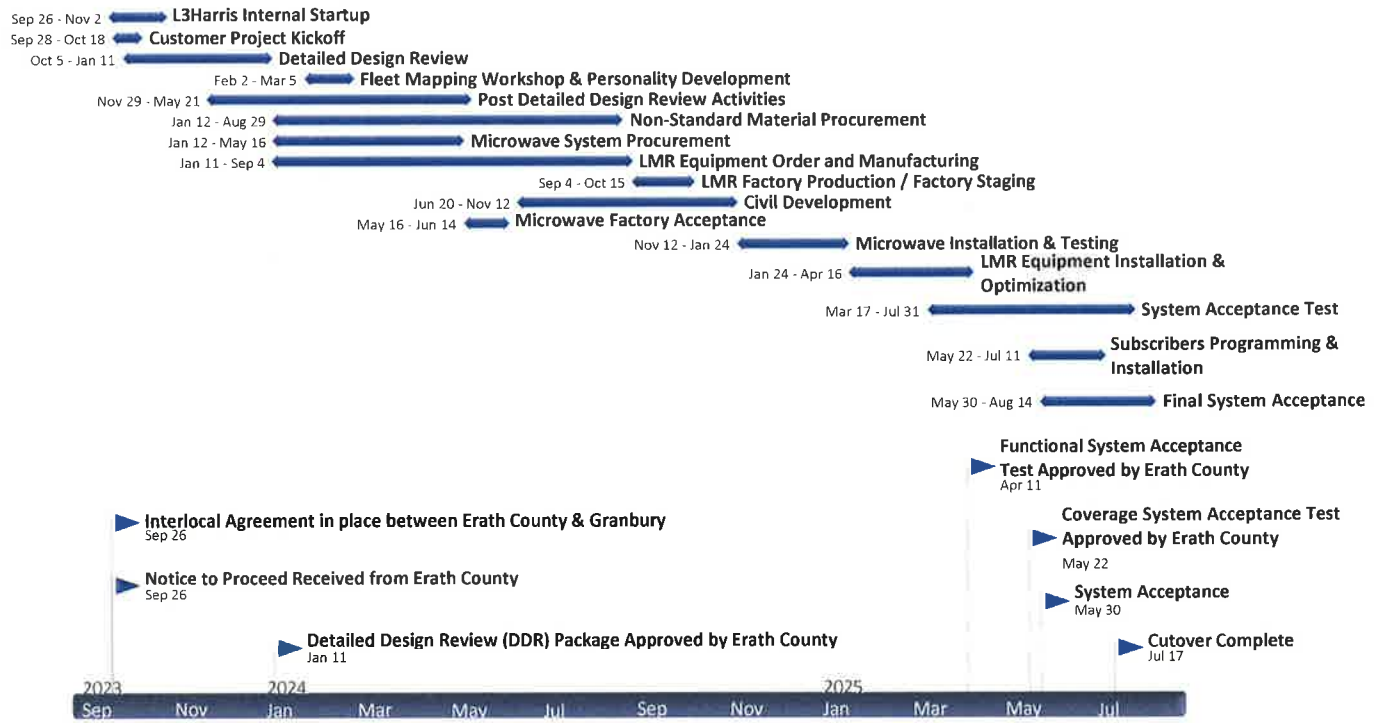
Figure 15. Final Acceptance Responsibility Matrix

TASKS	L3H	COUNTY	DUE IN (WEEKS)	AFTER
Removal of decommissioned legacy network, console, or site infrastructure equipment		X		
Submit final drawing package	X			
Submit letter of final system acceptance	X			
Provide warranty and contact information	X			
Meet with L3Harris to review warranty contact procedures		X	1	Doc Package is received
Meet with L3Harris to outline system support and services requirements		X	1	ATP
Accept final drawing package (within 5 business days)		X		
Sign letter of final system acceptance (within 5 business days)		X		

PRELIMINARY PROJECT SCHEDULE

A detailed project schedule will be prepared during the design phase and presented as part of the Detailed Design Review (DDR). L3Harris is committed to working with Erath County throughout the project to identify potential schedule efficiencies in order to reduce the overall project duration.

Figure 1. Preliminary Project Schedule



OVERVIEW

It is extremely important to deliver a reliable and robust mission critical Land Mobile Radio communications system as well as proper system hardware and software maintenance throughout the implementation, migration, warranty, and optional post warranty maintenance periods. L3Harris is uniquely qualified to provide these services given our experienced staff of certified master technicians and our network of local Authorized Service Centers.

We are the low-risk provider of highly reliable critical communications radio systems, providing the lowest total cost of ownership. For example, our site and network hardware incorporate commercially available components and subsystems, allowing for ease of on-site maintenance through rapid component swap out and high availability of replacement products.

The needs of each customer's post-installation services vary; therefore, we can tailor Erath County, TX's maintenance plan to meet your specific requirements and budget. Service choices range from self-maintenance with minimal manufacturer support, to supplemental maintenance services, to outsourcing all radio systems operations management and maintenance responsibilities.

Erath County, TX can rest assured that we will ensure optimal system performance throughout the system's warranty and maintenance periods, thereby meeting the needs of the user community, minimizing lifecycle costs and protecting Erath County, TX's investment.

STANDARD WARRANTY

Warranty Support

L3Harris warrants that hardware and installation services furnished by L3Harris will be free from defect in material and workmanship. During the warranty period, if any component of the hardware or portion of the installation services fails, L3Harris will examine the failure and remedy by:

1. Repairing any defective component of the hardware
2. Furnishing any necessary repaired or replacement parts
3. Correcting the faulty installation at no additional cost to Erath County

WARRANTY COVERAGE	INFRASTRUCTURE	SUBSCRIBER RADIOS
COVERAGE PERIOD	1 YEAR	2 YEARS
Commences	Upon Acceptance Date	Upon Acceptance Date

L3Harris will perform, at its discretion, all warranty labor at an L3Harris location. Where L3Harris has determined it is not feasible to ship fixed equipment for repair, we will repair on premise. Standard warranty response times are standard business days, 8:00 a.m. to 5:00 p.m. Eastern. For additional levels of support, premium services are available.

THIRD-PARTY WARRANTIES

Third-party warranties cover third-party original equipment manufacturer (OEM) equipment and services as described in the System Purchase Agreement. Throughout the entire warranty and contracted maintenance periods, L3Harris will act on behalf of Erath County to coordinate and settle warranty issues with third-party equipment and software companies. As part of the final acceptance, any remainder of warranty from a third-party vendor transfers to Erath County. If any third-party manufacturer warranty period is greater than one-year, we will recognize that OEM warranty for the specified equipment.

DEPOT REPAIR AND RETURN

The Depot Repair and Return service covers the cost to fix covered equipment at L3Harris or other third-party manufacturer's factories. This service is part of our standard warranty and is a premium service during the maintenance periods. The L3Harris Depot Repair and Return facility is ISO 9001:2015, UL, and Factory Mutual certified. Master technicians using state-of-the-art test equipment verify that all repairs meet or exceed prescribed specifications.



WARRANTY RETURNS

The following procedure describes the returns process for equipment under warranty:

1. L3Harris creates a support case number, verifies product part numbers, serial numbers, and reasons for return, and then forwards the approved request for processing.
2. L3Harris reviews the request and provides a return merchandise authorization number (RMA) to Erath County, along with instructions for return of the equipment.
3. The customer ships the equipment back to L3Harris Depot Repair and Return.
4. L3Harris repairs or replaces any equipment free of charge unless there is evidence of abuse or damage beyond the terms of the service.
5. L3Harris ships the repaired or replacement unit back to Erath County.
6. L3Harris closes the RMA and updates the tracking database.

Requests for repairs out of warranty will require a purchase order unless a service agreement exists. Any repairs out of warranty are subject to a flat-rate, per-unit fee, regardless of fault found with the equipment. If the item for repair does not have a flat-rate fee listed, a time, and material charge apply. The turn-around time for equipment repair or replacement is typically ten business days.

DEMAND SERVICES

Demand Services are available when an unexpected event or situation occurs outside the scope of work and requires repairs from L3Harris, its agents, or partners. For Demand Services, Erath County will receive an invoice on a time and materials basis. Examples may include the following:

- > Installation, updating, upgrading, maintaining, or removing software, hardware, or non-L3Harris infrastructure after initial installation

- > Repair of equipment damaged by vandalism, abuse, neglect, or noncompliance to L3Harris recommended practices, to the extent that neither L3Harris nor any of its agents caused such equipment damage
- > Damages due to acts of God or other uncontrollable events
- > Any other repair or service not outlined in the Scope of Work

PREMIUM WARRANTY

The needs of each customer's post-installation services vary; therefore, we have tailored Erath County's premium warranty services to meet your specific requirements and budget.

- > Corrective maintenance on L3Harris infrastructure
- > Preventive maintenance on L3Harris infrastructure
- > Priority technical assistance center (PTAC) support
- > Software Managed Services (SMS)
- > SMS infrastructure installation
- > Security Update Management Services+ (SUMS+)
- > SUMS+ infrastructure installation

POST-WARRANTY MAINTENANCE

Infrastructure Managed Services

The complexity of Critical Communications systems continues to increase beyond providing voice and data capabilities. The need for continuous system monitoring to defend against cybersecurity threats, configure interoperability with neighboring agencies and integrate with LTE technologies all require expert skills to maintain your system's optimal performance. L3Harris offers infrastructure managed services to help keep your system running smoothly. We have customized a plan to meet your unique requirements.

MANAGED SERVICES AT-A-GLANCE	INCLUDED
Premium Technical Support (PTS)	✓
Security Update Management Services (SUMS+)	✓
Software Managed Services (SMS)	✓
SMS Installation	✓
Standard Repair Services	✓
Annual Preventive System Maintenance	✓
SUMS+ Installation	✓
Planned Network Upgrades	✓
On-Site Corrective Maintenance	✓
Premium Technical Support, License Renewals	✓
On Demand Services	Available Option

Feature Descriptions

PREMIUM TECHNICAL SUPPORT

Continuous operation of a system providing critical communications leads customers to recognize the importance of having 24-hour-a-day, seven-day-per-week assistance. When the system malfunctions at 2 a.m., the personnel responsible for restoring operation are reassured when they have technical expertise available to assist. Premium Technical Support (PTS) provides this assurance. PTS services from L3Harris offers comprehensive support 24/7, 365 days a year. PTS subscribers have toll-free phone access to L3Harris' Technical Assistance Center (TAC) that recognizes your call as a priority. Support Engineers will endeavor to provide a response within two hours if a technician is not readily

available to answer the call. For emergency system off-air calls, we guarantee a one-hour response time.

PTS is always available to support customers with answers to technical and user support questions about your operations, programming, software, maintenance and troubleshooting issues. Users also have self-service access to the L3Harris Tech-Link website that offers a wealth of technical information, technical bulletins and manuals with search engine support. Calls to TAC are logged and assigned a tracking number for more efficient handling of your specific situation and are resolutions are added to our knowledge base to quickly resolve any future issues efficiently.

PTS services provides key benefits like:

- > Toll-free telephone access to TAC for year-round support
- > 24/7/365 Level 1 and Level 2 helpdesk support
- > 24/7/365 Level 3 and Level 4 technical support on L3Harris products
- > L3Harris management of 3rd party Level 4 technical support and account maintenance
- > Priority technical assistance on systems and terminal equipment
- > One-hour guaranteed callback window for emergency off-air calls and guaranteed two-hour callback window for non-emergency calls
- > All-access subscription to the online L3Harris Tech-Link website, a complete library of technical resources and product information
- > TAC coordination with on-site service personnel when necessary.
- > License and maintenance renewals of third-party software and hardware used in the L3Harris system infrastructure.

SOFTWARE MANAGED SERVICE (SMS)

As an integral component of the L3Harris Service Managed offering, the Software Managed Service (SMS) provides new releases of system software tailored to each customer's system. These releases contain improvements and enhancements for current generation system software, as well as occasional new product capability and the ability to enable licensed features. Keeping the infrastructure software up to date is vital to maintaining the value of the initial purchases so future capabilities such as Mission Critical PTT (MCPTT) can be deployed to the system's users. Under SMS, customers will receive:

- > Periodic software releases for system and programming software components
- > Software release notes and features summary with each release
- > A System configuration audit is performed with initial subscription
- > Current release as supported by the customer hardware at enrollment
- > Software installation support from the PTS service
- > Software replacement services if media becomes corrupt or damaged
- > Enhancements for existing features

- > New features built upon earlier generations of software capability to enable new licensed features

SMS INSTALLATION

L3Harris technicians will manage the installation of Software Managed Service updates for improved performance on a bi-annual basis. As part of this service, L3Harris will:

- > Ensure that your equipment continues to function at peak performance by installing the Software Managed Service updates
- > Provide an installation schedule and approximate equipment outage times (if any)
- > Provide a summary report of actions

SECURITY UPDATE MANAGEMENT SERVICE+ (SUMS+)

With software and the threats against that software constantly evolving, organizations need an effective way to assess, deploy, and manage a constant flow of patches for the operating systems and applications used in the L3Harris system. The Service Managed support addresses this need with our Security Update Management Services+ (SUMS+) offering. SUMS+ provides periodic security updates to participating customers plus a dedicated delivery server platform that includes:

- > Automatic management of patches for multiple operating systems and applications across thousands of endpoints on the system network.
- > Reduction of security and compliance risks by slashing installation times from weeks to days or hours
- > Greater visibility into patch compliance with flexible, real-time status monitoring and reporting
- > Up-to-date visibility and control from a single management console
- > Each security update delivery includes Software Release Notes. These technical documents detail:
 - > Installation instructions
 - > Software and hardware compatibility information, where applicable
 - > Product Vulnerability Alert (PVA) resolution or mitigation information

SUMS+ releases are thoroughly tested with L3Harris System Releases to ensure the third-party software patches are compatible with the Core applications.

STANDARD REPAIR SERVICES

The L3Harris Factory Repair and Return Depot provides repair services for all L3Harris-branded system components such as infrastructure, dispatch, and site equipment. This cost-effective flat-rate repair program is tailored for the Service Managed program to allow customers to budget for their repair costs. Pricing applies to equipment that is defective through normal wear and usage. If covered L3Harris

equipment fails through normal usage and wear, this service will repair the equipment at no additional cost. Labor to remove the defective equipment from the system, replace it with a spare, or re-install it after the equipment is returned from the L3Harris Depot facility is excluded.

ANNUAL PREVENTIVE SYSTEM MAINTENANCE

Preventive maintenance includes scheduled tests, checks, and alignment on customer's equipment to ensure the equipment meets specifications. As part of this service, L3Harris will:

- > Use calibrated test equipment for a consistent baseline
- > Verify all System Core software revision levels are installed and operating properly.
- > Verify System anti-virus software is installed and operating properly.
- > Perform preventive maintenance during hours that will have the least amount of impact on users and the system
- > Share the preventive work hours schedule in advance of the maintenance window and shows the approximate outage times (if applicable)
- > Summarize completed work in a written report

ON-SITE CORRECTIVE MAINTENANCE

On-Site Corrective Maintenance provides labor to troubleshoot, repair and if necessary, remove and replace defective infrastructure equipment as agreed upon between the customer and L3Harris. Harris personnel will remotely troubleshoot the reported issue and dispatch a technician to the customer's location to perform the corrective maintenance. If required, the technician will replace the defective equipment using spares purchased separately by the customer and arrange for the original item to be sent to a certified Harris repair facility. The corrective maintenance will be documented in a report and the customer will be informed of the status of all repairs in progress. On-Site Corrective Maintenance is performed 8x5 Monday – Friday but can be extended to 24x7x365 if a Rapid Response Service Level Agreement is purchased.

SUMS+ INSTALLATION

The L3Harris Service Managed package provides for trained L3Harris personnel to be brought on-site to expertly install and validate the third-party software patches have been properly completed. As part of this service, L3Harris will:

- > Ensure that your equipment continues to function at peak performance by installing the SUMS+ updates
- > Provide an installation schedule and approximate equipment outage times (if any)
- > Provide a summary report of actions upon request

PLANNED NETWORK UPGRADES

Planned Network Upgrades provide new system hardware to maintain compatibility with L3Harris System Release software under the Software Managed Services program. Planned Network Upgrades

includes updates to Core servers as well as the routers, switches, and IT components at both the Core and RF sites.

The L3Harris Planned Network Upgrade program provides a service that extends the useful life of your communications infrastructure to maximize the value of your investment. The program is tailored to your system, and to the network hardware installed when you start your program, to create an economical means for future updates. The program creates an update strategy for key infrastructure platforms and manages the operational lifecycle of the system components to ensure your system is operating on current network hardware and software. This program will refresh your network hardware when required to support the current System Release of software. This approach maximizes support levels going forward and minimizes the number of network hardware updates during your system lifecycle. Planned Network Upgrades allows you to add additional applications such as Location Services, Incident Command Services and converged LMR/LTE communications.

THIRD-PARTY LICENSE RENEWALS

L3Harris will manage Third-Party Infrastructure hardware and software subscription services and licenses to ensure Erath County, TX can receive Operating System Patches, Level 3 Third Line Support, along with Level 4 Product and Vendor Support for Third-Party Infrastructure Hardware included in their system infrastructure. The L3Harris VIDA system makes use of third-party operating system software, application software and server and networking hardware, integrated with L3Harris LMR software applications. Subject to the limitations of Third-Party Support Agreements, or as indicated under the General Terms and Conditions of the Contract Agreement, this includes the purchase of Third-Party software subscription renewals and the purchase of new Third-Party software licenses when necessary to provide the Services. Additionally, this includes the purchase of support renewals for server and networking equipment used in the Designated System.

Please note that L3Harris uses many different third-party suppliers and they do not all maintain the same support cycle or structure. This may result in some software licenses or hardware support being updated on different schedules. This service also includes vendor support for hardware like Dell Servers and Cisco networking equipment. Maintaining this third-party license renewal support is required to legally install L3Harris SUMS and SMS updates to the system.

SUMMARY OF SERVICES

L3Harris commits to the success of Erath County, TX's new communications system and looks forward to a long-term partnership. Our local, regional, and factory support provides an added layer of support and allows you the flexibility to contract for the services desired to augment their existing resources. Our approach provides optimal system performance to meet your needs and protects Erath County, TX's investment, while minimizing total cost of ownership.



L3HARRIS

TEST PLAN FOR **SYSTEM ACCEPTANCE**

Customer:
Erath County, TX

Prepared by:
Peter C. Abraham

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TEST PLAN

INTRODUCTION

L3Harris designed this System Test Plan to validate the installation and functionality of our P25 Phase 2 Trunking system at the SR10A.7 release. It defines the plan for conducting tests and analyzing test results, to confirm that the system satisfies design objectives.

The Test Team shall perform these tests in the order they appear in the plan and test procedures, or as required by the L3Harris systems engineer. The team will record test results in the appropriate test procedure referenced by this document. The prescribed test procedures have been developed and rigorously vetted by L3Harris engineering to provide extensive functional verification of the system features under test.

ROLES AND RESPONSIBILITIES

A Test Team consisting of at least one L3Harris system engineer and one Erath County, TX representative to act as a witness to the testing is required to execute the test plan. It may be necessary for a secondary team, consisting of an additional L3Harris employee and an Erath County, TX witness, to be present at another location to test certain features, such as multisite calls or for the secondary team to initiate site alarms so that the primary team can observe them from a system management terminal (SMT).

An L3Harris employee will execute the test steps outlined in the test procedure using the required equipment and with optional assistance from Erath County representatives. Additional personnel may attend as desired, or as required, to provide access or escort others to certain locations, such as RF shelters or other restricted access areas. Erath County, TX shall provide access for the entire team to its facilities, including, RF site shelters, and dispatch locations. For secure facilities, appropriate access permissions must be granted prior to the testing events.

ACCEPTANCE TESTING CLARIFICATION

Final acceptance testing can occur in two separate phases. The first phase of testing begins with functional testing performed in the L3Harris staging facility immediately after initial factory configuration is complete. During this first phase, Erath County representatives may be on-site to witness the testing. The second phase occurs after final installation at customer facilities.

Staging tests, as detailed in the identified test procedures, verify equipment functionality that we can reasonably perform in a factory environment. We will perform all identified functional testing in the field after final install and commissioning of the system.

Factory staging tests will be virtually conducted via a remote video conferencing session. The virtual testing allows for a greater number of participants than typically allowed for during an on-site visit.

Once acceptance testing begins, we will lock system configurations, hardware platforms, and software versions, except to correct software defects affecting system performance. Prior to conducting the factory tests, we perform a system audit to verify installation of the appropriate software system release version on each platform.

ELECTRICAL SPECIFICATIONS

If requested, L3Harris will provide raw test data and site alignment measurements from the factory Automated Manufacturing Test Station (AMTS) for the L3Harris provided transceiver equipment.

BASELINE CONFIGURATION

L3Harris systems include a baseline configuration with a predefined test agency and group structure to support the defined test procedures. L3Harris system engineering will determine the hardware and software revisions during program planning and check the system conforms to that baseline prior to the start of testing.

A complete set of as-built system schematics will be available during testing and includes:

- > System block diagrams
- > Network schematics
- > Connection diagrams
- > Wiring and cabling schematics
- > Rack up drawings
- > Alarm punch down drawings
- > Grounding and power schematics

TESTING PREREQUISITES

Following installation and commissioning of the applicable hardware and software, L3Harris will verify the system readiness for test. If the testing includes RF sites, L3Harris will complete site alignment and optimization by setting site configurations, aligning stations, and optimizing system timing parameters. As part of the standard installation practices, we measure equipment settings and record levels. L3Harris will provide these site measurements as part of the final documentation package. These parameters include:

- > Transmit frequency and deviation
- > Output and reflected power
- > Receiver sensitivity
- > Receiver multicoupler gain (if applicable)
- > Receiver preamplifier gain (if applicable)
- > Time domain reflectometry of transmission line
- > Combiner loss (if applicable)

Prior to conducting installation testing, L3Harris performs a system audit to verify installation of the appropriate system release version of software on each platform.

Finally, prior to conducting the testing procedures detailed in this document, L3Harris and Erath County, TX representatives will agree upon the dates and times of the test.

SYSTEMS AND SITES TO BE TESTED

L3Harris will test the P25 Phase 2 Trunking system installed at each of Erath County, TX's locations. Functional testing is expected to take up to two to three days per site but may be completed sooner.

Final system acceptance testing will take place at each of the RF site locations. A site will be chosen to initiate the testing, and all test procedures appropriate to the site will be executed and recorded. Once a site has completed the test cycle, the team will move on to the next site. This approach will be repeated until all sites have been tested.

Equipment is located at various locations across the facilities and is identified as the following:

SITE LOCATION	SYSTEM	SYSTEM/EQUIPMENT DESCRIPTION
Erath County Sheriff's Office	Dispatch Center	Dispatch Center
Northwest	Erath North Simulcast Cell	Radio Site
Morgan Mill	Erath North Simulcast Cell	Radio Site
Prather Tower	Erath South Simulcast Cell	Radio Site (existing multisite converted to simulcast)
Dublin2	Erath North Simulcast Cell	Radio Site

PASS/FAIL CRITERIA

Criteria for Pass / Fail is determined by execution of the test procedures in the Acceptance Test Plan. If a feature test is successfully executed, that feature is deemed to be compliant and results in a PASS. If a failure occurs, the failed test may be repeated to address missed steps or configuration requirements overlooked during execution.

If a certain piece of equipment is deemed to be malfunctioning and duplicate spare equipment is available to replace it, the test may be executed using the spare equipment. If the feature test is successfully executed on the spare equipment, the feature will be deemed compliant and result in a PASS. At such time as the original piece of equipment is repaired or replaced and is able to function as designed, the original equipment will be returned to service and tested to ensure functionality.

If a feature is found to be non-compliant, L3Harris will address the non-compliance and retest. Until a successful retest, the feature is deemed to be non-compliant and results in a FAIL.

If it is necessary to defer a test for any reason, it may be marked as Not Yet Evaluated (NYE). The test may be executed, with appropriate witnessing, at any time afterward to change the result to a PASS.

TROUBLE REPORTING

Any issues found during testing will first be recorded on the comment page at the end of the feature set, and then they will be reported directly to the L3Harris program manager to be logged in the project issues log for corrective action.

Failures must be appropriately addressed. For hardware failures occurring during test events, failed hardware will be removed from the system being tested and turned over to L3Harris' quality organization for repair or replacement.

Test Procedures

FEATURES TO BE TESTED

The following list of acceptance procedures will be used to validate system performance:

- > Network Switching Center
- > Subscriber Units

TOOLS / TEST EQUIPMENT

Unless otherwise specified, L3Harris will supply all special tools necessary to test the product.

Equipment list TBD during program planning.

EQUIPMENT MODEL NUMBER	DESCRIPTION	SERIAL NUMBER
TBD	TBD	TBD

RADIO MODEL NUMBER	DESCRIPTION	SERIAL NUMBER
TBD	TBD	TBD

Safety

L3Harris will take reasonable safety precautions to ensure personnel against harm while operating within and traversing the installations.

General safety guidelines for portable radios:

- > Do not hold onto the antenna when the radio is powered on.
- > To ensure you do not exceed FCC RF exposure compliance requirements, always keep the antenna at least 0.43 inches (1.1 cm) away from the body and 0.98 inches (2.5 cm) from the face when transmitting.
- > Do not use the portable radio with a damaged or missing antenna. A minor burn may result if skin comes into contact with a damaged antenna. Replace a damaged antenna immediately. Operating a portable radio with the antenna missing could cause personal injury, damage the radio, and may violate FCC regulations.
- > Use only manufacturer-approved antennas. Use of unauthorized antennas, modifications, or attachments could cause damage to the radio unit and may violate FCC regulations.
- > RF energy from portable radios may affect some electronic equipment. Most modern electronic equipment in cars, hospitals, homes, etc., is shielded from RF energy. However, in areas in which you are instructed to turn off two-way radio equipment, always observe the rules. If in doubt, turn it off!

L3Harris engineering will identify environmental detriments prior to testing, if deemed applicable. L3Harris will make adjustments to the extent required to address any such deficiencies deemed to present a danger to either system performance or personnel safety; examples include excessive temperature variations, contaminants, hazardous materials, or obstructions to LMR equipment.

TEST PROCEDURES

SYSTEM FEATURE SET

P25 TDMA Phase 2 Functionality (Single-site / Simulcast Single Site)

Purpose: Demonstrate P25 TDMA Phase 2 implementation provides the additional traffic channel capacity and features of P25 TDMA Phase 2 while allowing backwards compatibility with FDMA Phase 1 radios and talkgroups.

Expected Results: Verify that a P25 FDMA call will work on a TDMA system.

Setup: In the following tests, Radios 1 and 2 will be set up as FDMA only. Radios 3 and 4 will be set up as TDMA and FDMA capable, depending upon TG.

FDMA refers to Phase 1 and TDMA refers to Phase 2.

Log into RNM, Realtime Tab, start RSM Site Activity or VNIC site calls to monitor system channel assignment and call type during active calls.

DESCRIPTION	RADIO LID	TG DESCRIPTION	TG ID	SYSTEM
Radio 1	9980001	TG 64051 P25	64051	Phase 1
Radio 2	9980002	TG 64051 P25	64051	Phase 1
Radio 3	9980003	TG 64051 P25	64051	Phase 2
Radio 4	9980004	TG 64051 P25	64051	Phase 2

TDMA SITE CALL

Purpose: Demonstrates that a TDMA call will work on a TDMA system.

Expected Results: Verify that a P25 TDMA call will work on a TDMA system.

Setup: Turn off Radios 1 and 2.

Execution:

1. PTT Radio 3 and talk. The transmit (TX) indicators should turn on at Radio 3.
 - > Verify that the call is assigned as an TDMA by viewing the real time viewer site activity on the RNM.
 - > Verify Radio 4 can hear Radio 3.

TEST RESULTS

Tester:

Date:

Result:

☐

Pass

☐

Fail

TRANSMISSION TRUNKING

Purpose: Test will demonstrate that the system is working as a transmission trunking system.

Expected Results: Verify the control channel will assign a working channel to the radio and that the radio and site will work as a trunking set by dropping radio transmission upon PTT release.

Setup: Radios 1, 2, and 3 should be the only radios on the system.

Use RNM real time viewers to monitor system channel assignment.

DESCRIPTION	RADIO LID	TG DESCRIPTION	TG ID	SITE
Radio 1	9980001	TG 64001 P25	64001	1
Radio 2	9980002	TG 64001 P25	64001	1
Radio 3	9980003	TG 64001 P25	64001	1

Execution:

1. Log into RNM, Realtime Tab, start RSM Site Activity, to monitor system channel assignment. Observe all channels on Site 1.
2. PTT Radio 1 and talk.
 - > The transmit (TX) indicators should turn on at Radio 1.
 - > Verify the number of the channel assigned.
 - > Un-PTT Radio 1.
3. PTT Radio 2 and talk.
 - > The transmit (TX) indicators should turn on at Radio 2.
 - > Verify the next channel is assigned.
 - > Un-PTT Radio 2.
4. PTT Radio 3 and talk.
 - > The transmit (TX) indicators should turn on at Radio 3.
 - > Verify the next channel is assigned.
 - > Un-PTT Radio 3.
 - > Verify the channel immediately drops, or as configured by station hang timers.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

P25 Simulcast Bypass Operation

Program the Two47 modules (both Control Points and Transmit Sites) to the Final Configuration. Refer to the installation manual for the guide to setting TX Traffic Controllers / CP Traffic Controllers personality parameters.

Verify the BYPASS plan has been reviewed and approved by customer representative. This procedure makes assumptions on bypass sites before implementation and test of the System. After WMS/Panther signal strength data collection, final decision will be made on the actual bypass "ON" and "OFF" sites.

Prepare a minimum of two terminal radios programmed to operate on the active BYPASS site and the main simulcast system.

SITE OFF - FINAL CONFIGURATION

Purpose: Confirm sites configured to be in the "OFF" condition during BYPASS are in the expected BYPASS mode.

Expected Results: The "OFF" site traffic controllers have no control channel.

Setup: Sites intended to be "OFF" in event of BYPASS must have all channels set to disabled (unchecked in Device Manager, TC personality).

Execution:

1. At one of the sites designated as an "off" site, create a condition to force BYPASS by disconnecting the router to MPLS connection. All other sites will have the HPAs disabled locally.
 - > Verify transmit site is in BYPASS mode.
 - > The Traffic Controller module display indicates "TC" instead of "TR". Note: TC= Working Traffic Channel, standalone mode, TR=Working Channel, simulcast mode, and Control Channel, simulcast mode is indicated by the transmit LED indicator.
2. Observe the repeater (station) Traffic Controller modules.
 - > Verify there is no active control channel.
 - > Verify no stations are keyed or producing RF power.
3. Restore the site to normal by returning the site to simulcast mode by reconnecting the router to MPLS connection.
 - > Verify transmit site is in normal simulcast mode. The Traffic Controller modules will indicate "TR(n)", where n is the channel number.
4. Repeat Steps 1-3 for the remaining "OFF" bypass sites in the simulcast system under test.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

SITE ON (TRUNKING) - FINAL CONFIGURATION

Purpose: Confirm sites configured to be in the "ON" condition during BYPASS are in the expected BYPASS mode.

Expected Results: The "ON" site traffic controllers have a control channel.

Setup: Site is configured to be ON during BYPASS.

Execution:

1. Create a condition to force BYPASS by disconnecting the router to MPLS connection.
 - > Verify transmit site is in BYPASS mode. BYPS LED on Baseband module and the Traffic Controller module display indicates either "TC" or "CC" instead of "TR".
 - > Observe the stations/repeater Traffic Controller modules. Verify there is an active control channel on one of the Traffic Controller modules. The remaining repeater/stations Traffic Controller modules will indicate "TC".
 - > Verify the station appearing as control channel is keyed, producing RF power and modulated with control channel data.
 - > Verify a terminal radio set to the system programmed for the site in BYPASS with the correct site ID recognizes the site's control channel data.
2. Key the terminal radio on a group call.
 - > Verify a working channel assignment is made within the channel group allowed in the personality.
 - > Verify the call is heard on a second terminal radio set to the active BYPASS system.
3. Restore the site to simulcast mode by reconnecting the router to MPLS connection.
 - > Verify transmit site is in normal simulcast mode. Traffic Controller modules indicate "TR(n)".
4. Repeat Steps 1-3 for remaining "ON" bypass sites in the simulcast system under test.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

CONTROL POINT TRUNKING RESET CONTROL

Purpose: A properly set up Simulcast BYPASS system will disable CP Traffic Controller modules associated with active channels at a TX site operating in BYPASS. This keeps the remaining sites operating in Simulcast mode from being assigned to channels expected to be active at the site in BYPASS. Sites programmed to be OFF in BYPASS will not require any Traffic Controller modules to be held OFF.

Expected Results: This test will verify that the Control Point Traffic Controller modules will be held OFF corresponding to the active channels at a site, due to the TX site being in BYPASS.

Setup: N/A

Execution:

1. Force a TX site that will become active into BYPASS by disconnecting the router to MPLS connection.
 - > Verify TX site is in BYPASS mode.
 - > Verify transmit site is in BYPASS mode. Traffic Controller module display indicates either "TC" or "CC" instead of "TR".
 - > Verify the CP Traffic Controller modules on the channels intended to be OFF are held OFF.
2. Observe the RNM screen for the simulcast system.
 - > Verify the channels intended to be OFF at the Control Point are reported as OFF (RED).
3. Restore the site to simulcast mode by reconnecting the router to MPLS connection.
 - > Verify the TX site Traffic Controller modules revert to normal Simulcast.
 - > Verify the CP Traffic Controller modules associated with the site in BYPASS are returned to normal.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

BYPASS – SITE MINIMUM CHANNELS

Purpose: Confirm a site enters bypass when active channels fall below site minimum channels setting.

Expected Results: The site enters bypass mode.

Setup: Sites are configured with cluster minimum channels set to 6 and site minimum channels to 7.

Bypass Plan: TR Site 1 Ch 3,4,5; TR Site 2 Ch 6,7,8; TR Site 3 Ch 9,10,11 TR Sites 4 and 5 dark.

Note: Settings and bypass plan can be customer final settings; execution will have to adjust to accommodate those settings.

Execution:

1. At TR Site 1 disable Channels 8 - 11 using the TX disable switch on the PA (only Channels 1-7 are still functioning).
 - > Verify system and site still functioning in simulcast; the disabled Channels 8-11 are in alarm state at the control point site.
 - > At TR Site 1 the Traffic Controller modules displays still indicates "TR" not "TC" or "CC". Note: TC= Working Traffic Channel, standalone mode, TR=Working Channel, simulcast mode, and Control Channel, simulcast mode is indicated by the transmit LED indicator.
2. At the same site, disable Channel 7 using the TX disable switch on the PA.
 - > Verify system is still functioning in simulcast. Control Point ch 3,4, and 5 in alarm state.
 - > Verify TR Site 1 is in bypass. The Traffic Controller module display indicates "TC" instead of "TR". All channels status indicates alarm. Note: TC= Working Traffic Channel, standalone mode, TR=Working Channel, simulcast mode, and Control Channel, simulcast mode is indicated by the transmit LED indicator always on.
3. At the same site restore all channels back to service (enable the PA using the TX disable switch on the PA).
 - > Verify transmit Site 1 is in normal simulcast mode. The Traffic Controller modules will indicate "TR(n)", where n is the channel number.
 - > Verify all channels are in service at the control point.

TEST RESULTS			
Tester:			
Date:			
Result:	☐	Pass	☐ Fail

BYPASS – CLUSTER MINIMUM CHANNELS – TR SITE FAILURES

Purpose: Confirm all sites enter bypass when available channels fall below the cluster minimum channels setting. Depending upon the system size, bypass plan, and which channels have been failed a subset of sites may subsequently come out of bypass and operate as a cluster before any channels are restored to service.

Expected Results: All site in the system enter bypass mode.

Setup: Sites are configured with cluster minimum channels set to 6 and site minimum channels set to 7 (these settings are normally lower; they are set high to simplify testing).

Execution:

1. At TR Site 1 disable Channels 9, 10 and 11 using the TX disable switch on the PA (8 channels are still functioning).
 - > Verify system and site still functioning in simulcast.
 - > The Traffic Controller module displays still indicates “TR” not “TC” or “CC”. Note: TC= Working Traffic Channel, standalone mode, TR=Working Channel, simulcast mode, and Control Channel, simulcast mode is indicated by the transmit LED indicator.
2. At TR Site 3 disable Channels 6, 7 and 8 using the TX disable switch on the PA (5 channels are still functioning).
 - > Verify All sites have entered bypass (the TCs display “TC” and “CC”, not “TR” and every channel status indicates failed at every site.
3. Enable the PAs at the sites using the TX disable switches.
 - > Verify the system recovers to simulcast mode with all transmit sites in normal simulcast mode. The Traffic Controller modules will indicate “TR(n)”, where n is the channel number.

TEST RESULTS			
Tester:			
Date:			
Result:	☐	Pass	☐ Fail

SITE ON (TRUNKING) - ENHANCED BYPASS FINAL CONFIGURATION

Purpose: Confirm sites configured to be in the "ON" condition during BYPASS are in the expected BYPASS mode and can connect to VNIC.

Expected Results: The "ON" site traffic controllers have a control channel and calls between terminal radios and dispatch can be made.

Setup: N/A

Execution:

1. Create a condition to force BYPASS that does not disrupt network connectivity by logging into both GPS receivers and configuring their notifications to set the major alarm threshold to minimum satellites 12 and duration below threshold 5 seconds. This will cause the GPS receivers to set a major alarm after 5 seconds.
2. Configure Notifications from Spectracom GPS Receivers
 - > Navigate to: Management > Notifications



3. In the **Events** window pane, click the **GPS** tab.
4. Set the Major Alarm Threshold as follows:
 - > Minimum Satellites: 12
 - > Duration Below Threshold: 5
5. Click: Submit

The screenshot shows a software interface with a table of events and two threshold configuration sections.

Event	Minor Alarm	Shall Trip	Event	Event A
Too Few GPS Sat, Minor Alarm	☐	☒		☐
Too Few GPS Sat, Minor, Cleared	☐	☒		☐
Too Few GPS Sat, Major Alarm	☐	☒		☐
Too Few GPS Sat, Major, Cleared	☐	☒		☐
GPS Antenna Problem	☐	☒		☐
GPS Antenna OK	☐	☒		☐
GPS Receiver Fault			☐	
GPS Receiver Fault Cleared			☐	

Minor Alarm Threshold

Minimum Satellites: Duration Below Threshold (s):

Major Alarm Threshold

Minimum Satellites: Duration Below Threshold (s):

6. Verify transmit site is in BYPASS mode. The Traffic Controller module display indicates either "TC" or "CC" instead of "TR".
 - > Observe the stations/repeater Traffic Controller modules. Verify there is an active control channel on one of the Traffic Controller modules. The remaining repeater/stations Traffic Controller modules will indicate "TC".
 - > Verify the station appearing as control channel is keyed, producing RF power and modulated with control channel data.
 - > Verify a terminal radio set to the system programmed for the site in BYPASS with the correct site ID recognizes the site's control channel data.
7. Key the terminal radio on a group call.
 - > Verify a working channel assignment is made within the channel group allowed in the personality.
8. Restore the site to simulcast mode by restoring the GPS major alarm notification threshold to minimum satellites = 1 and duration = 345600 for both GPS receivers.
 - > Verify transmit site is in normal simulcast mode. Traffic Controller modules indicate "TR(n)".

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

P25 Simulcast Control Point Movement

DCP FORCED CONTROL POINT MOVEMENT

Purpose: This test will demonstrate the DCP system can move the control point in response to user command.

Expected Results: This test will verify that the Control Point can be moved from the active site to an alternate Control Point Site. After the control point is switched to the alternate Control Point the system should operate normally.

Setup: The DCP system is operating with an active control point and at least two sites are enabled to be the control point.

Execution:

1. Log into the RNM.
2. In Network view identify the site which is the active control point.
3. Right click on the control point site icon and select "Change Control Point to Best Site Available".
4. Verify system is still functioning (i.e. voice calls can be made – between radios and a radio and console and optionally data calls can be made (e.g. radios can be 'pinged').
5. Verify that the RNM indicates a different site as control point and the previous control point is now a TX site. (Note – a CP only site displays "zzzz" when it is not the active control point.)
6. On the RNM right click on the previous control point site and select "Change to be the Control Point".
7. Verify system is still functioning (i.e. calls can be made – between radios and a radio and console and optionally data calls can be made (e.g. radios can be 'pinged').
8. Verify that the RNM indicates the control point has moved to the site selected in Step 6 and the previous control point is now a TX site. (Note – a CP only site displays "zzzz" when it is not the active control point.)

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

DCP CONTROL POINT MOVEMENT IN RESPONSE TO FAULTS AT THE ACTIVE CONTROL POINT

Purpose: This test will demonstrate that the Control Point will move in response to failures at the active Control Point.

Expected Results: This test will verify that the DCP system will move the active Control Point to an alternate control point site when the active control point experiences failures. After the Control Point moves the old control point should drop into bypass and the rest of the system should operate normally as a Simulcast cluster.

Setup: The DCP system is operating with an active control point and is properly configured with at least two sites enabled to be the control point.

Execution:

1. Verify system is functioning (i.e. calls can be made – between radios and a radio and console and optionally data calls can be made (e.g. radios can be ‘pinged’).
2. At the control point site disconnect the 1pps cable from GPS B.
3. Verify the system is still functioning (i.e. calls can be made – between radios and a radio and console and optionally data calls can be made (e.g. radios can be ‘pinged’) and control point has not moved. The traffic controllers at the control point display ‘CC xx’ and ‘TC xx’ when idle; at a satellite site the traffic controllers display ‘TR xx’ where xx is the channel number.
4. At the control point site disconnect the 1pps cable from GPS A.
5. Verify that the control point moved to next ranked site and the old control point is now in bypass. The traffic controllers at the control point display ‘CC xx’ and ‘TC xx’ when idle. Any channels that are configured to be active at the old control point site when it is in bypass will have all their status LED red. In bypass all the traffic controllers display ‘CC xx’ and ‘TC xx’ when idle and the status LED will be red.
6. Verify the RNM indicates the new control point and shows the old control point site is now in bypass.
7. Verify the simulcast system is still functioning (i.e. calls can be made – between radios and a radio and console and optionally data calls can be made (e.g. radios can be ‘pinged’).
8. If the old control point has channels active in bypass, verify radios switched to this bypass site acquire the control channel and can communicate.
9. Restore the connections to the GPS receivers at the site in bypass (the old control point site).
10. Verify that the site exits bypass and joins the simulcast cluster.

TEST RESULTS

Tester:	
Date:	
Result:	☐ Pass ☐ Fail

System Test Notes / Issues

System Functional Test Acceptance

This Functional Test Acceptance Procedure has been fully and successfully completed with all action items resolved.

Erath County, TX Representative

L3Harris Technologies Representative

Signature

Signature

Printed Name and Title

Printed Name and Title

Date

Date

SYMPHONY CONSOLE FEATURE SET

FEATURE SET TESTING ASSUMPTIONS

Console feature tests will use the customer's existing Symphony consoles.

Failed console equipment will be replaced by the customer and the call test will be repeated.

Perishable equipment failures or used equipment failures will not count toward a failed feature test.

TRANSMITTING WITH A MICROPHONE

Purpose: Demonstrate Symphony operator can initiate communication with a radio using Symphony select functions and foot pedal.

Expected Results: Confirms Symphony communication with radio

Setup: Radio set to same TG as console

Execution:

1. Press INSTANT TX function (right mouse button) on module with test group.
 - > Verify call is heard on radio.
 - > Verify a ripple effect on 'TX' indicator is displayed.
 - > Verify a channel access tone is heard.
 - > Release the Instant TX key.
2. Click the 'Select' button on the module to make the TG the selected talkgroup.
 - > Verify module for TG is highlighted, indicating it is selected talkgroup.
3. Make a call on TG by pressing PTT foot pedal.
 - > Verify a channel access tone is heard.
 - > Verify halo around the 'TX' indicator is displayed.
 - > Verify call is heard on radio.
 - > Verify audio is heard at radio on talkgroup.
 - > Release foot pedal to end call.
4. Make a call on TG by pressing headset button.
 - > Verify a channel access tone is heard.
 - > Verify halo around 'TX' indicator is displayed.
 - > Verify call is heard on radio.
 - > Verify audio is heard at radio on talkgroup.
 - > Release headset button to end call.
5. Make a call on TG by selecting it with a mouse.
 - > Verify a channel access tone is heard.
 - > Verify halo around 'TX' indicator is displayed.
 - > Verify call is heard on radio.
 - > Verify audio is heard at radio on talkgroup.
 - > Release mouse button to end call.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

RECEIVING CALLS (UNIT ID DISPLAY, TALKGROUP ID DISPLAY, ALIASING)

Purpose: Confirm Symphony operator can receive communications from a radio, using both TG A and individual calling.

Expected Results: Communications are initiated and received on appropriate speaker (select or unselect) and radio's ID is displayed.

Setup: Symphony has talkgroups A, B, and C configured with TG B selected.

Talkgroup Call

Execution:

1. Key radio and verify
 - > That call is heard at unselect speaker.
 - > Calling radio ID is displayed on module for TG.
 - > A green light ID displayed indicating an incoming call on module TG A.
2. Switch radios talkgroup to TG B and key radio.
 - > Verify call is heard at select speaker.
 - > Verify calling radio ID is displayed on TG B module.
 - > Verify a green light ID displayed indicating an incoming call on module for TG B.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

Individual Call (Unit – Unit)

Execution:

1. Right click on 'Harris' box on top left-hand side of screen.
2. Select 'Open Directory' this will open a pop-up window for 'Directory'.
3. Select 'Users' tab.
4. Select 'Radio A' under "ALIAS" column.
5. Press 'Radio A' button right side to screen to place an individual call to 'Radio A'.
 - > Verify ripple effect on 'TX' indicator is displayed.
 - > Verify a ringing tone will be heard at console and radio.
 - > Verify radio displays 'INDV' and consoles 'ID'.
6. Respond to console by PTting radio.
 - > Verify call is heard on Symphony and calling radio's ID and call indicator are displayed.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

EMERGENCY CALL AND EMERGENCY ALARM

Purpose: Confirms Symphony indicates an emergency declared by a radio and can reset and clear emergency.

Expected Results: Symphony indicates and can clear emergency.

Setup: Test requires a test radio capable of generating and clearing an emergency (i.e. supervisor radio).

DESCRIPTION	TG DESCRIPTION
Radio A	TG A

Execution:

- Using test radio, declare an emergency on TG A.
 - > Verify TG A module turns red,
 - > Verify ID/name of test radio is displayed
 - > Verify emergency alert tone is heard on Symphony.
- Select triangle with a '!' to access emergency menu.
 - > Verify acknowledge 'Ack' button is red and check box is red.
- Using radio, transmit on talkgroup
 - > Verify call is received by Symphony.
- With Symphony, transmit on group with emergency.
 - > Verify test radio receives call and is still in emergency mode.
- Acknowledge emergency by selecting 'Ack' button
 - > Verify button changes from 'Ack' to clear.
 - > Verify radio and Symphony are still in emergency mode.
- Clear the emergency by selecting 'Clear X' button
 - > Verify Symphony clears emergency.
 - > Verify radio clears emergency.
- Transmit on radio.
 - > Verify emergency is cleared and normal group calls have resumed.
- Select TG A group selected on Symphony, declare an emergency on test group by pressing 'Emer Declare'.
 - > Verify Symphony and radio have same indications as Steps 2 to 4.
- Acknowledge by hitting 'Ack' in Step 5.
- Clear emergency with Symphony.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

SYSTEM WIDE CALL

Purpose: Confirm Symphony can initiate system wide calls.

Expected Results: Symphony can initiate system wide all call.

Setup: Program console modules with 'TG64000 P25' talkgroup

DESCRIPTION	TG DESCRIPTION
Radio A	TDMA Group A
Radio B	TDMA Group B
Radio C	FDMA Group A
Radio D	FDMA Group B

Execution:

1. Press INSTANT TX on 'TG64000' module.
 - > Verify channel access tone is heard,
 - > Verify ripple effect on 'TX' indicator is displayed
 - > Verify call is heard at all radios
 - > Release Instant TX key.
2. Press INSTANT TX on TDMA Group A module.
 - > Verify channel access tone is heard,
 - > Verify ripple effect is displayed
 - > Verify call is heard at Radio A.
 - > Verify Radios B, C, and D do not hear audio.
 - > Release Instant TX key.

TEST RESULTS			
Tester:			
Date:			
Result:	☐	Pass	☐ Fail

ALERT TONES

Purpose: Confirm Symphony can initiate alert tones which can be heard at radio.

Expected Results: Tones can be initiated and heard.

Setup: Symphony programmed with TG A.

DESCRIPTION	TG DESCRIPTION
Radio A	TG A

Execution:

1. Make TG A P25 selected talkgroup.
2. Select tones tab on talkgroup module.
3. Select one of three ALERT TONE keys by selecting drop-down list next to orange button.
4. Radio A will receive tone.
5. Test all three alert tones to ensure all alert tones can be heard on radio.
 - > Verify ALERT TONE is received by Radio A and is also heard on Symphony.
6. When ALERT TONE key is released.
 - > Verify tone on Radio A drops.

TEST RESULTS			
Tester:			
Date:			
Result:	☐ Pass	☐ Fail	

CONSOLE PRE-EMPT

Purpose: Confirm Symphony can pre-empt an ongoing call between radios.

Expected Results: Call started by the radio will be interrupted by the console.

Setup: Symphony programmed with TG: TG64001 P25

DESCRIPTION	TG DESCRIPTION
Radio A	TG A
Radio B	TG A

Execution:

1. Key Radio A on TG A and hold call up. Verify that audio is heard at Radio B and Symphony.
2. Key Symphony on TG A and hold, while continuing to hold call up on Radio A
 - > Verify console pre-empts.
 - > Verify transmit indicator is displayed along with pre-empted caller LID and CALL indicator.
 - > Verify second radio begins to hear Symphony audio and not first radio call.
 - > Verify pre-empted radio audio is still heard on pre-empting console.
3. Un-key first radio.
 - > Verify pre-empted caller LID and CALL indicators are removed, and pre-empted radio audio is no longer heard on pre-empting Symphony.
4. Un-key Symphony.

TEST RESULTS

Tester:			
Date:			
Result:	☐	Pass	☐ Fail

SIMULSELECT

Purpose: Confirms operation of Symphony simulselect feature, which allows multiple talkgroups to be selected for communication simultaneously.

Expected Results: Symphony can select multiple talkgroups and communication is allowed.

Setup: Symphony programmed with TGs A, B, C, and D.

DESCRIPTION	TG DESCRIPTION
Radio A	TG A
Radio B	TG B
Radio C	TG C
Radio D	TG D

Execution:

1. Create simulselect group on 4 test group modules.
2. Place a call from Symphony on simulselect group.
 - > Verify call is heard at all four radios.
3. Place a call from each radio.
 - > Verify only Symphony hears calls.
 - > Verify only radios on the same talkgroup hear each other.
4. Deactivate simulselect group.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

PATCH

Purpose: Confirms Symphony patch feature creates shared communication between multiple selected talkgroups.

Expected Results: Patched talkgroups can communicate.

DESCRIPTION	TG DESCRIPTION
Radio A	TG A
Radio B	TG B
Radio C	TG C
Radio D	TG D

Execution:

1. Create patch on PATCH 1 with all four groups above.
2. Place a call from newly created patch.
 - > Verify call is heard on all radios.
3. Place a call from each radio.
 - > Verify call is heard on Symphony and each radio.
4. Deactivate patch.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

CALL HISTORY

Purpose: Confirms a history of calls processed at the Symphony.

Expected Results: History is accessible and valid.

Setup: Test compares programmed module call activity to history scroll lists. Utility page, dispatch menu will be selected. Select either "Select History" or "Unselect History".

Execution:

1. Press 'scroll up' and 'scroll down' buttons to scroll through Unselect Call History list.
 - > Compare these calls with known activity.
2. Press 'scroll up' and 'scroll down' buttons to scroll through Selected Call History list.
 - > Compare these calls with known activity.
3. Press 'Esc' button to exit history scroll mode.
4. To monitor call history on a single group, use 'module history' button on 'module modify' menu.
5. Use 'scroll up' and 'scroll down' buttons to scroll through calls for picked module.
 - > Compare these calls with known activity.

TEST RESULTS			
Tester:			
Date:			
Result:	☐	Pass	☐ Fail

GROUP EMERGENCY AND UNIT ALERT WITH SYMPHONY

Purpose: Confirm Symphony receives a group emergency and an emergency unit alert declared by a radio. Confirm console can acknowledge and clear emergency alarm (unit alert) and acknowledge and clear group emergency.

Expected Results: Symphony Console can indicate emergency alarm (unit alert) and group emergency. Symphony can also clear unit alert & cancel group emergency.

Setup: Radios A & B have "Emergency Alarm" enabled in personalities.

DESCRIPTION	TG DESCRIPTION	TG ID
Radio A	TDMA TG A	64152
Radio B	TDMA TG B	64152

Execution:

1. Select TDMA TG A on the console. On Radio A, declare an emergency on TG B. PTT Radio A to talk to the dispatcher.
 - > Verify Radio B on site 2 receives emergency and hears emergency group call.
2. On Symphony's TG B Module:
 - > Verify TG B Module has a striped red background.
 - > Verify TG Smart Button flashes an "emergency icon", which alternates with TG icon.
 - > Verify Declarer ID is shown in Red on TG Module.
 - > Verify emergency alarm tone and radio emergency group call audio is heard on Symphony.
3. On Symphony's Sidebar Panel, go to the Emergency Panel:
 - > Verify emergency listed shows TG B, in a mini module, with a red background.
 - > Verify declarer ID is listed, with an "ACK" button and a number '1', for number of group emergencies declared, [listed below TG Mini Module].
 - > Verify below declarer ID, single unit icon and declarer ID is listed, with an "ACK" button.
4. To clear group emergency alarm tone on Symphony emergency sidebar panel, select top "ACK" button next to declarer ID.
 - > Verify group emergency alarm tone is silenced on the console.
 - > Verify group emergency is still displayed on talkgroup module and emergency sidebar panel.
 - > Verify unit alert "ACK" is still displayed below group emergency.
5. On Symphony, select and transmit on TG B.
 - > Verify Radio A and B both receive emergency call.
6. Clear group emergency on Radio A.
 - > Verify console TG module no longer indicates a group emergency.
 - > Verify the group emergency is no longer seen on Radio A and Radio B.
7. PTT on Radio A, to do a group call:
 - > Verify an emergency group call goes to the Symphony on TG B module, and to Radio B.
 - > Verify emergency is also seen in emergency sidebar panel.
 - > (This occurs, since emergency unit alert is still active on TG B.)

8. On Symphony emergency sidebar panel, clear unit alert tone by selecting second "ACK" button next to unit icon and declarer ID. Also, clear group emergency alarm tone on TG B, by selecting first "ACK" button next to declarer ID.
 - > Verify all emergency tones have been silenced.
9. On emergency sidebar panel, clear group emergency by selecting first "Clear" button next to declarer ID. Also, clear unit alert by selecting second "Clear" button next to Unit Icon and declarer ID.
 - > Verify emergency on TG B has been cleared from Symphony, Radio A, and Radio B.
10. PTT on Radio A on TG B, to do a group call.
 - > Verify a group call without an emergency is seen and heard at Symphony and Radio B.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

Symphony Console Test Notes / Issues



Symphony Console Test Acceptance

This Functional Test Acceptance Procedure has been fully and successfully completed with all action items resolved.

Erath County, TX Representative

L3Harris Technologies Representative

Signature

Signature

Printed Name and Title

Printed Name and Title

Date

Date

SUBSCRIBER UNIT FEATURE SET

TRANSMIT GRANT TONE

Purpose: Demonstrate the system channel grant tone is heard on the radio.

Expected Results: This test will show that the radio will play a grant tone when the radio is assigned a working channel.

Setup: One radio with valid ID and a valid group on selected system. Grant tone (ready-to- talk tone) enabled in radio personality as applicable for specific radio type being tested.

Execution:

1. Press PTT button on radio with valid group selected.
2. Verify grant tone is heard at radio when working channel access is granted.

Note: If the call is queued, the grant tone will be delayed until the call is assigned a working channel.

TEST RESULTS

Tester:

Date:

Result:

☐

Pass

☐

Fail

OUT OF RANGE TONE ON PTT

Purpose: Test demonstrates the radios out of range tone.

Expected Results: When the radio losses connectivity with the control channel the radio plays a tone to make the user aware that it has lost connectivity to the control channel.

Setup: One radio with a valid ID and a valid group on selected system. System scanning should be disabled in the radio personality as necessary for specific radio type being tested.

Execution:

1. With valid group selected, and radio initially logged into and monitoring the control channel on the selected system, reduce the signal strength reaching the radio by some means (ex. unscrewing and removing the portable radio antenna, or moving further from the site).
 - > Verify that the radio indicates loss of control channel on the display when the received signal strength is sufficiently reduced (i.e. out of range of system).
 - > Press PTT button on radio and verify that an out of range tone is heard at the radio.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

GROUP SCAN

Purpose: Verify when scan is enabled, calls from groups in the radio's scan list are received.

Expected Results: In this test the radio will play calls from multiple talkgroups while scan is enabled.

Setup: All radios for this test need to have scan ability.

Radio A set up with TG A and TG B P25 in the scan list, TG A P25 selected, and group scan initially disabled.

DESCRIPTION	TG DESCRIPTION
Radio A	TG A
Radio B	TG A

Execution:

1. Place a call from Radio B on TG A.
 - > Verify the call is received and audio is heard on Radio A.
2. On Radio B, change to TG B. Place a call from Radio B on talk TG B.
 - > Verify the call is not received by Radio A.
3. Enable group scan on Radio A.
4. Place another call from Radio B on TG B.
 - > Verify that the call is now received, and audio is heard on Radio A.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

PRIORITY SCAN

Purpose: Demonstrate groups assigned a higher priority in the scan list override groups of a lower priority.

Expected Results: Radio will play calls with a higher level of priority.

Setup: Set Radio A to priority scan TG A P25, and scan (at lower priority – 3 bars) TG B P25. Set Radio A to TG C. Have scan enabled on Radio A.

DESCRIPTION	TG DESCRIPTION
Radio A (SCAN)	TG A
Radio B	TG B
Radio C	TG C

Execution:

1. Have Radio A selected to TG C P25. Place a call from Radio B on TG B P25.
 - > Verify Radio A scans to TG B P25 and hears audio from Radio B. Continue transmitting from Radio B.
2. Place a call from Radio C on TG A P25. [Radio B is still transmitting on TG B P25.]
 - > Verify Radio A priority scans to TG A P25 and hears audio from Radio C.
3. Unkey all radios and turn off scan.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

TRANSMIT BUSY LOCKOUT

Purpose: Demonstrate a radio cannot key on a group, on which a group call is already active.

Expected Results: A radio will not be allowed to transmit on a talkgroup while a different radio is transmitting on the same talkgroup.

Setup: Talkgroup used for test must be set up as transmission trunked. This feature does not apply to message trunked calls.

DESCRIPTION	TG DESCRIPTION
Radio A	TG A
Radio B	TG A

Execution:

1. Place a call from Radio A on selected TG by pressing and holding the PTT button.
 - > Verify the call is received and audio is heard on Radio B.
2. While the call is in progress, press the PTT button on Radio B.
 - > Verify that Radio B does not transmit over (step on) the call in progress. (A double bump busy sound will be heard).

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

CONTINUOUS CONTROL CHANNEL UPDATE

Purpose: This test will demonstrate that a radio will join a call that is already in progress.

Expected Results: This test will verify that a radio will join a call that is already in progress.

Setup:

DESCRIPTION	TG DESCRIPTION
Radio A	TG A
Radio B	TG A

Execution:

1. Set both radios to the test group.
2. Turn Radio B OFF.
3. Key Radio A and hold. Turn ON the Radio B (and set it to the test group if necessary).
 - > Verify that the second radio joins the call in progress and hears audio from the call in progress.
4. Unkey Radio A.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

CONVERT TO CALLEE

Purpose: Demonstrate when radios are simultaneously keyed, only one radio is given talk privilege.

Expected Results: When two radios on the same TG are keyed simultaneously, only one radio will receive access to the working channel. The other radio will play the audio from the first.

Setup: Test of single site simultaneous call arbitration. Radio A and Radio B are registered on the same site and talkgroup.

DESCRIPTION	TG DESCRIPTION	SITE
Radio A	TG A	1
Radio B	TG A	1

Execution:

1. Set two radios to the same site and group.
2. Key both radios at the same time.
 - > Verify that one radio ends up transmitting and the other ends up receiving.
 - > Verify that the call audio is routed and received by one of the units although the PTT is pressed.

TEST RESULTS			
Tester:			
Date:			
Result:	☐	Pass	☐ Fail

GROUP TEST CALL

Purpose: A group test call will show that the site will allow a radio to communicate using a group call.

Expected Results: Test will demonstrate that all radios assigned to a common group will hear a call and all radios assigned to an uncommon group will not hear the call.

Setup: Make sure scan is turned OFF on the radios.

DESCRIPTION	TG DESCRIPTION
Radio A	TG A
Radio B	TG A
Radio C	TG A

Execution:

1. PTT Radio A and talk.
 - > The transmit (TX) indicators should turn on at Radio A.
 - > Audio should be heard in Radios B and C.
 - > The ID of Radio A should be seen on Radios 2 and 3.
2. Set Radio C to a different talk group. PTT on Radio A and talk.
 - > The transmit (TX) indicators should turn on at Radio A.
 - > Audio should be heard in Radio B only.
 - > The ID of Radio A should be seen at Radio B only.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

SINGLE SITE CALL QUEUE DECLARATION ALERT

Purpose: This test will demonstrate the system queuing.

Expected Results: This test will verify that the system will assign users in a queue when the system has no available channels and assign users a working channel when the system has an available channel.

Setup: This test requires four radios and two working channels. Disable channels (if necessary) until there are two working channels at the site. This test is to be run with no other users on the system.

DESCRIPTION	TG DESCRIPTION
Radio A	FDMA TGA
Radio B	FDMA TG B
Radio C	FDMA TG C
Radio D	FDMA TG C

Execution:

1. Busy up all talk paths on the system with Radio A, and 2 by pressing and holding the PTT button.
2. With all talk paths busied, momentarily press, and release the PTT button on test Radio C.
 - > Verify that a call queued tone is heard at the radio.
3. Unkey (release PTT button) Radio B.
 - > Verify that Radio C is assigned to the free talk path.
4. The grant tone is heard at the radio, without having to rekey the radio (re-pressing the PTT button).
5. Press the PTT button on Radio C within the auto key time applicable to the radio type (approx. 2 seconds) to keep the assigned channel.
 - > Verify that audio from Radio C is heard at Radio D.
6. Unkey all radios.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

RECENT USER PRIORITY

Purpose: Demonstrate system's ability to prioritize recent users in queueing situations.

Expected Results: When radios of the same priority level enter the queue, one that has been recently active will exit the queue first.

Setup: This test requires four radios and two working channels.

Disable channels (if necessary) until there are two working channels at the site. Set the radio according to the table below. This test is to be run with no other users on the system and at intervals as set in the recent caller interval (a time of greater than 10 seconds is recommended for the test, which is configurable in the traffic controller module). *This will only work if performed quickly.*

DESCRIPTION	TG DESCRIPTION
Radio A	FDMA TG A
Radio B	FDMA TG B
Radio C	FDMA TG C
Radio D	FDMA TG D

Execution:

1. PTT and release Radio A (establish a recent user entry).
2. PTT Radios C and D and hold on transmit to busy both working channels.
3. PTT and release Radio B (queue a call less recent than Radio A).
4. PTT and release Radio A (queue the recent user).
5. Unkey Radio D.
 - > Verify that Radio A un-queues and transmits.
6. Unkey all radios.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

CALL PRIORITY FOR GROUP IDS

Purpose: Demonstrate the system's ability to allow a user with a higher priority to be assigned a channel before a user with a lower priority, despite who enters the queue first.

Expected Results: This test will verify that a user who has a higher priority will be assigned a channel before users with a lower priority regardless of who entered the queue first. In this test Radio D should get the first available channel, because it has a higher priority, and Radio C will be assigned a channel next because it has a lower priority.

Setup: This test requires two working channels on the site. Disable channels (if necessary) until there are two working channels on the site. Setup the radio according to the table below. This test is to be run with no other users on the system.

DESCRIPTION	TG DESCRIPTION
Radio A	TG 64001 P25
Radio B	TG 64002 P25
Radio C	TG 64003 P25
Radio D	TG 64004 P25

Execution:

1. PTT Radios A and B and hold on transmit to busy both working channels.
2. PTT and release Radio C (medium priority entry into the queue).
3. PTT and release Radio D (high priority entry into the queue).
4. Un-key Radio D.
 - > Verify that Radio C un-queues and keys.
5. Un-key Radio B.
 - > Verify that Radio A un-queues and keys.
6. Un-key all radios.

TEST RESULTS			
Tester:			
Date:			
Result:	☐	Pass	☐ Fail

TDMA RUTHLESS PREEMPT, FOR EMERGENCY DECLARATION

Purpose: When all active channels/timeslots at a site are busy, an emergency declaration can preempt calls of a lower priority.

Expected Results: Site will attempt to drop a lower priority local TDMA call when the emergency declaration is TDMA.

Setup:

Site 1: UAS: P25 site capability: "Mixed Site"

Site 1: One control channel and one working channel only

Site personality: Emergency declaration: Handling when all channels are busy: "Drop Calls of Lower Priority"

Log into RNM real time Viewers: RSM site activity or VNIC site calls to observe Phase 1 and Phase 2 calls.

DESCRIPTION	TG DESCRIPTION	SITE
TDMA Ph2 Radio A	TDMA Low priority TG	1
TDMA Ph2 Radio B	TDMA TG	1
TDMA Ph2 Radio C	TDMA high priority TG	1
TDMA Ph2 Radio D	TDMA high priority TG	1

Execution:

1. PTT Radio A, and PTT Radio B.
 - > Verify on RNM real time viewers that two TDMA calls are active on the traffic (working) channel.
2. While the two calls are active in Step 1, declare an emergency on Radio C, and PTT Radio C to perform an emergency group call.
 - > Verify on the RNM, that the active call on Radio A is preempted, and the group emergency is now on the available channel, where the Radio A call had been preempted from.
 - > Verify Radio A no longer has an active call, checking to see that the transmit indicator is off, while still PTTing Radio A.
 - > Verify Radio D has received the emergency call and can hear the audio.
3. Release PTT on Radios A and B. Release PTT on Radio C and clear the group emergency on Radio C.

TEST RESULTS			
Tester:			
Date:			
Result:	☐	Pass	☐ Fail

P25 RADIO CHECK (SR10A.3 OR LATER)

Purpose: To verify the radio is connected to the VIDA system and is available for communications.

Expected Results: Symphony dispatcher can send a message to a radio, and the dispatcher can see the time the text message was sent to the radio.

Setup:

Radio A registered on Site 1.

Radio B not registered on Site 1.

Symphony Console has radio check license.

DESCRIPTION	TG DESCRIPTION	SITE
TDMA Ph2 Radio A	TG A	1
TDMA Ph1 Radio B	TG A	1

Execution:

- Dispatcher presses "Radio Check" button for Radio 1, on Symphony.
 - > Verify text to the left of the "Radio Check" button indicates the time the message was sent.
- Dispatcher presses "Radio Check" button for Radio 2, on the Symphony.
 - > Verify the text to the left of the "Radio Check" button indicates that the text message failed to reach Radio 2.

TEST RESULTS			
Tester:			
Date:			
Result:	☐	Pass	☐ Fail

Unencrypted / Encrypted Calls

Radios need to have encryption keys loaded prior to doing the tests in this section.

ENCRYPTED GROUP CALL TEST

Purpose: Encrypted call test will demonstrate that radios that have the encryption keys will hear encrypted calls and radios that do not have encryption keys will not hear encrypted calls.

Expected Results: Radios 1 and 2 will hear encrypted calls, and Radio E will not hear encrypted calls because it does not have encrypted keys. All the radios will hear unencrypted calls.

Setup: Radios 1 and 2 should have encryption keys and be set to encryption mode. Radio E should not have encryption keys and be set to encryption mode.

DESCRIPTION	TG DESCRIPTION
Radio A	Encrypted TG A
Radio B	Encrypted TG A
Radio C	Encrypted TG A

Execution:

1. PTT Radio A and talk.
 - > Audio should be heard on Radio B.
 - > No audio should be heard on Radio C.
2. PTT Radio E and talk.
 - > Audio should be heard on Radio A and B.
 - > Radio C should display that it does not have a key.

TEST RESULTS	
Tester:	
Date:	
Result:	☐ Pass ☐ Fail

ENCRYPTED INDIVIDUAL (PRIVATE) CALL

Purpose: The individual call test will verify that the site will allow two radios to communicate on a private call.

Expected Results: Test will demonstrate that two radios can communicate on an individual call and other radios will not hear the private conversation.

Setup: Set Radios 1, 2, and 3 to (TG64001) per test group structure. All radios should not be in encrypted mode but have encryption keys.

DESCRIPTION	TG DESCRIPTION	TG ID
Radio A	TG 64001 P25	64001
Radio B	TG 64001 P25	64001
Radio C	TG 64001 P25	64001

Execution:

1. On Radio A, select the Individual Call Function, and select pre-stored Radio B ID, or enter Radio B's ID, and PTT Radio A.
2. Verify that Radio B receives the call and displays the ID of Radio A. Verify that Radio C remains idle.
3. Release the PTT on Radio A and immediately PTT on Radio B.
4. Verify that Radio A receives the call and displays the ID of Radio B. Verify Radio C remains idle.
5. On Radio A, select the Individual Call Function, and select pre-stored Radio C ID, or enter Radio C's ID, and PTT Radio A.
6. Verify that Radio C receives the call and displays the ID of Radio A. Verify that Radio B remains idle.
7. Release the PTT on Radio A but do not immediately PTT Radio C. Verify that Radio C gives a Call Back Alert (WHC- "Who Has Called") indication. Then make the return call from Radio C back to Radio A.
8. Verify that Radio A receives the call and displays the ID of Radio C. Verify Radio B remains idle.

TEST RESULTS			
Tester:			
Date:			
Result:	☐	Pass	☐ Fail

TDMA DES

Purpose: Confirms the operation of DES encryption for TDMA voice calls.

Expected Results: Encrypted talkgroups can communicate.

Setup: Console 1 programmed with a DES encrypted TDMA trunk group and two radios programmed with the same DES trunk group and key, one radio with the group but no key and one radio with the DES group with a different key.

Execution:

1. Place a call from one of the radios with the correct key on the DES group.
 - > Confirm that the call is heard on the other radio and the console.
 - > Confirm the call is not heard on the two radios that do not have the correct key.
2. Place a call on the DES group from the console.
 - > Confirm that the call is heard on the two radios with the correct key.
 - > Confirm the call is not heard on the two radios that do not have the correct key.

TEST RESULTS			
Tester:			
Date:			
Result:	☐	Pass	☐ Fail

Subscriber Unit Test Acceptance

This Functional Test Acceptance Procedure has been fully and successfully completed with all action items resolved.

Erath County, TX Representative

L3Harris Technologies Representative

Signature

Signature

Printed Name and Title

Printed Name and Title

Date

Date

APPENDIX A – ACRONYMS AND DEFINITIONS

ACRONYM	DEFINITION
AD	Active Directory
AES	Advanced Encryption Standard
ATP	Acceptance Test Procedure
CAI	Common Air Interface (usually in reference to P25)
CME	Cisco Mobility Exchange (Telco Interconnect)
CNM	Central Network Manager, an L3Harris product
Confirmed Call	A confirmed call is a special type of call where the call is queued until all sites have resources available, or until the confirmed call timer expires (configurable, typically one or two seconds)
COTS	Commercial-off-the-Shelf
CPC	Channel Performance Criterion
DAQ	Delivered Audio Quality
DES	Digital Encryption Standard
LMR	Enterprise Land Mobile Radio
ESN	Electronic Serial Number (64 bits)
FDMA	Frequency Division Multiple Access
GID	Group ID (16 bit). This corresponds to a talkgroup. The group ID is unique within a VNIC and can be reused on other VNICs within the same WACN. Some of the older P25 documents refer to the GID as a talkgroup ID (TGID)
HA	High Availability
Individual Call	An individual call is a private call between one user and another. It can be between two radios, or between one radio and a dispatch console
KEK	Key Encryption Key
KID	16-bit encryption key ID
KMF	Key Management Facility
KMM	Key Management Message
LAN	Local Area Network
MASTR V	An L3Harris base station product
MES	Mobile End System, a subscriber radio
MME	Miniature mobility exchange, which consists of L3Harris software running on a SitePro card at the base site. The MME runs the SMDCP layer of the data protocol and is the equivalent of the P25 RFG (RF Gateway)

ACRONYM	DEFINITION
N(S)	A 3-bit sequence number for the packet data unit
NSC	Network Switching Center
NSS	Network Switching Server
NWS	Network Sentry
OTAP	Over-the-air-programming
OTAR	Over-the-air-rekeying
P25	Project 25, a suite of standards for digital radio communications, developed by the Association of Public Safety Communications Officials (APCO) under the TIA TR-8 engineering committee, and published as the TIA-102 set of documents
Priority Talkgroup	The priority talkgroup selected on the subscriber device. Usually this is the talkgroup that the radio will transmit on when the user presses PTT
ProFile	An L3Harris product used for configuring radios over the P25 radio channel
ProScan	An L3Harris software algorithm used for radio roaming
PTT	Push-to-Talk
RAR	Regional Access Router
RF	Radio Frequency
RNM	Regional Network Manager
RSM	Regional Site Manager, a server that runs the RSM, Activity Warehouse and Device Manager applications
RSSI	Received Signal Strength Indicator
RVM	Regional VIDA Manager, a server that runs the UAS and RNM applications
SAN	Storage area network
SMT	System management terminal.
SU	Subscriber unit. In the P25 world, an SU is a mobile or portable radio
SUT	System Under Test
SUMS	Security Update Management Service (an L3Harris product)
SUMSplus	Version of SUMS
TAC	Technical Assistance Center, an L3Harris service
TDMA	Time Division Multiple Access
TEK	Traffic Encryption Key
TGID	Talkgroup ID (16 bit, equivalent to GID). The P25 documents usually use GID but some of the older documents use TGID
Traffic Controller	Software entity that resides in a base station at the site and generates the P25 control channel
Two47	An L3Harris base station product

ACRONYM	DEFINITION
Tx	Transmit
UAS	Unified Administration System
UKEK	User Key Encryption Key
UPS	Uninterrupted Power Supply
VAS	VIDA Application Server
VIDA	Voice, Interoperability, Data, Access (an L3Harris system product)
VLAN	Virtual Local Area Network
VM	Virtual Machine
VNIC	Voice Network Interface Controller, the L3Harris voice switch
VPN	Virtual Private Network
VTI	VIDA Telephone Interconnect
WACN	Wide area communication network (20 bit network ID, part of SUID). This is a customer network that can include many VNICs
WAR	Wide Area Router
Zeroize	A P25 control channel command which causes the mobile radio to erase its encryption keys (but then requires manual loading to restore encryption keys)



L3HARRIS

COVERAGE ACCEPTANCE **TEST PLAN**

Customer:
Erath County, TX

Prepared by:
Jessica Barron

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About This Test

These procedures provide an accurate, statistically valid, repeatable, objective, and cost-effective method to verify all of L3Harris's coverage commitments to the County are met.

This Coverage Acceptance Test Plan ("ATP"), where applicable, conforms with the requirements set forth in the latest revision of Telecommunications Industry Association ("TIA") Telecommunications Systems Bulletin TSB-88 titled "Wireless Communications Systems - Performance in Noise and Interference-Limited Situations - Recommended Methods for Technology-Independent Modeling, Simulation, and Verification". TSB-88 defines Channel Performance Criterion ("CPC") as the specified minimum design performance level in a faded channel and provides a set of Delivered Audio Quality (DAQ) CPCs that define subjective voice quality performance applicable to both analog and digital voice systems.

L3Harris designs a balanced system such that uplink performance is comparable to downlink performance. Because of this design approach, the principal of reciprocity (as defined by TSB-88) ties the inbound predictions to the outbound test results in a mathematically predictable manner. In accordance with TSB-88, L3Harris will infer talk-in performance from the outbound test data.

SITE PERFORMANCE VALIDATION

As part of L3Harris' standard installation practices, L3Harris measures and record electrical measurements and timing parameters of equipment. L3Harris will provide these measurements to the County as part of the final documentation package. These parameters may include:

- > Base station output and reflected power
- > Base station receiver sensitivity
- > Receiver subsystem alignment parameters
- > Time domain reflectometry of transmission line
- > Combiner loss (if applicable)

Prior to conducting the testing procedures detailed in this document, L3Harris reviews each site to verify that the radio system is operating properly. The reviews verify the antenna configuration, the power into the antenna, the antenna installation, and the system channel used for test. L3Harris will provide all test equipment necessary to perform the reviews.

Definitions

SUBSCRIBER UNIT USAGE

All tests requiring subscriber (terminal) units in this document will use XL-185 or XL-200 Mobile and Portable radios. L3Harris will bench test and align all subscriber (terminal) radios prior to their use during coverage testing.

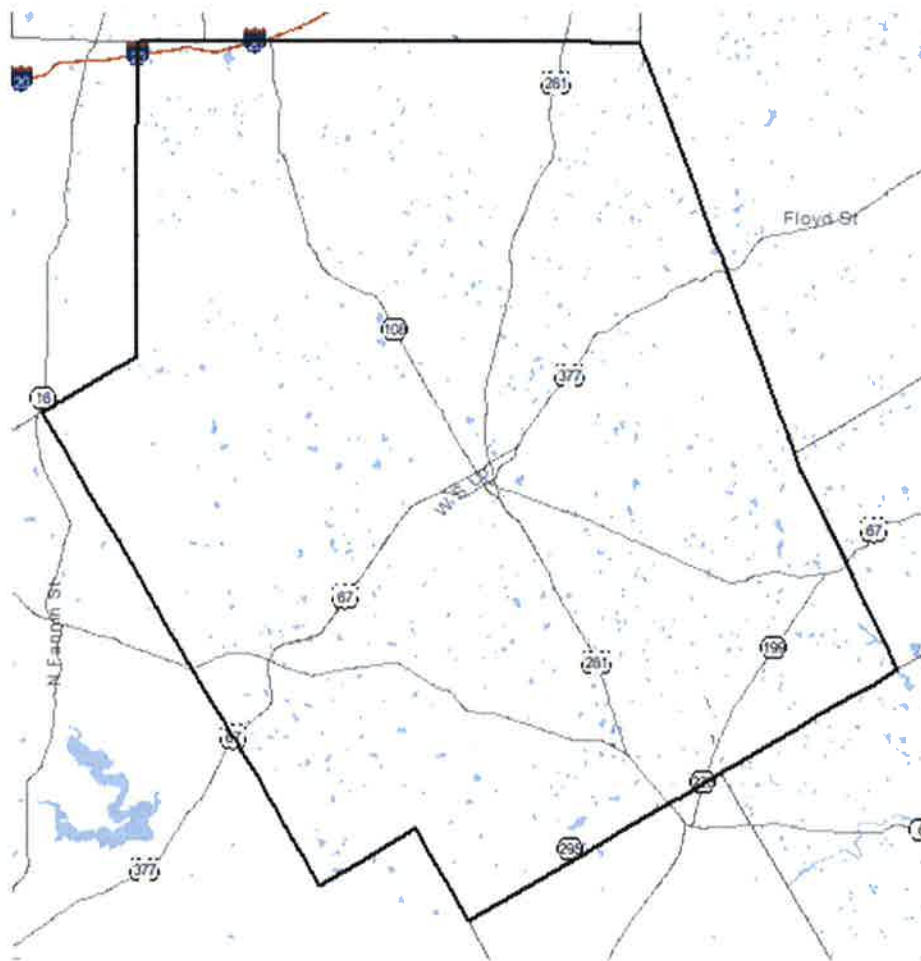
Test Vehicle Configuration

The non-stationary test equipment will mount inside one or more SUVs or vans, with external antennas mounted on the roof. The roof of the test vehicle(s) must not contain any other objects, including lightbars, roof racks, or other obstructions. All non-test radios must be off during testing. L3Harris may divide test equipment into multiple test vehicles. L3Harris will determine the number of test vehicles required and which tests, if any, can be run concurrently.

SERVICE AREA

TSB-88 defines a service area as a boundary of the geographic area of concern for a user, and states that Validated CPC Service Area Reliability is the percentage of test locations in the bounded service area that meet or exceed the specified CPC. L3Harris is using a Bounded Area design for the County as defined in TSB-88 wherein coverage predictions are made out to the boundary of the defined service area and coverage verification occurs throughout the service area out to the boundary through the performance of a Validated CPC Service Area Reliability test. The service area is shown in Figure 1.

Figure 1. Erath County Service Area



SERVICE AREA GRID STRUCTURE

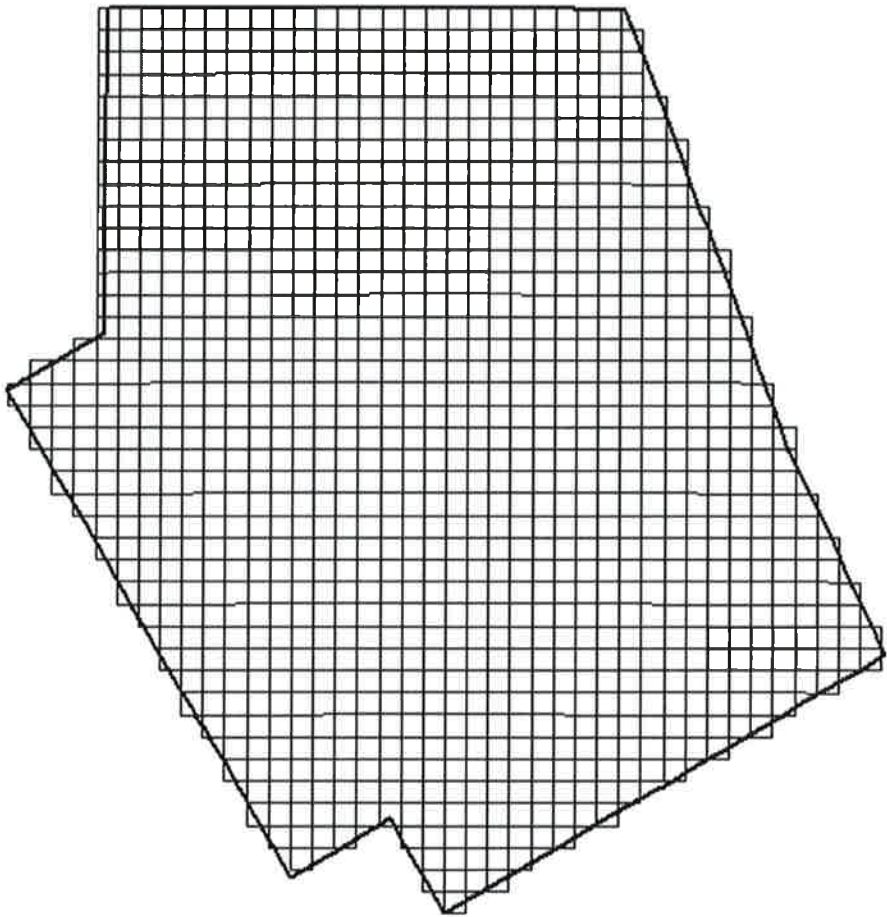
TSB-88 recommends coverage verification measurements at a statistically significant number of random test locations, uniformly distributed throughout the service area. L3Harris divides the service area by a test grid pattern using TSB-88 Estimate of Proportions analysis to determine the number and size of the test tiles. This analysis provides both statistically significant measurement results and a high confidence that the results are a true indication of the installed radio system coverage.

Figure 2 provides L3Harris' recommended tile sizes to obtain a uniform distribution of tiles throughout the service area(s).

Figure 2. Service Area, Tile Size, and Tile Count

SERVICE AREA DEFINITION	TILE SIZE (MILES)	APPROXIMATE TILE COUNT
Erath County	1 x 1	1090

Figure 3. Erath County Tile Structure



The grid pattern overlays onto street maps and the drive test team will navigate through all accessible tiles (i.e. those having roads traversable by the test vehicle) within the defined service area boundaries. Based on the US Census Bureau TIGER roads database, L3Harris estimates 1090 tiles are accessible within the service area. To include as many test tiles as possible, L3Harris assumes the following roads may be accessible:

- > Primary roads
- > Secondary roads
- > Local roads (streets)
- > Ramps
- > Service drives

The final determination on accessibility will be made by the drive test team based on the conditions they encounter. The following are examples of tiles that will be deemed inaccessible:

- > Tiles that require special permission from property owners to access (not counting cases where the Customer has obtained or provided permission)
- > Tiles that are hazardous to navigate or may result in the test vehicle becoming stuck or damaged
- > Tiles that require clearing of brush, debris, or other obstacles before the vehicle can enter
- > Tiles that do not have road access

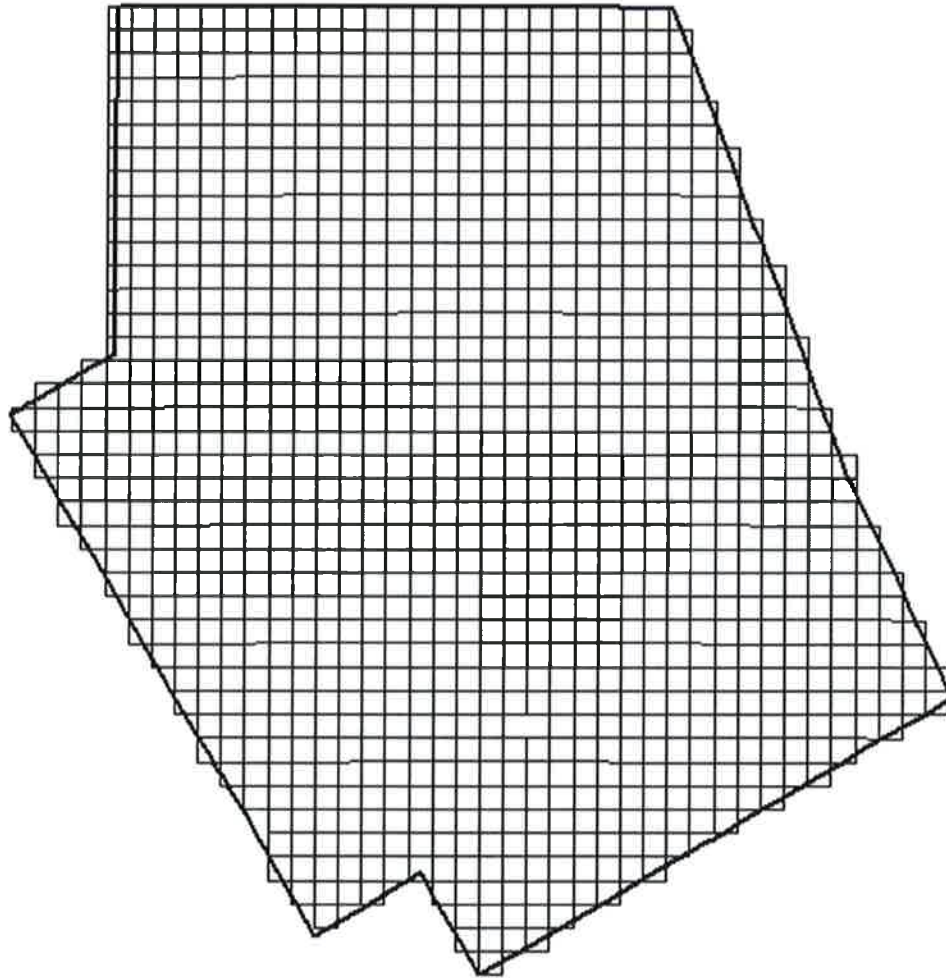
The test team should not pass through tunnels, underpasses, underground garages, or other man made obstructive areas where radio coverage is not planned or expected while testing. If they do pass through any of these areas while testing, L3Harris may disable the TYPHON test unit to prevent collection of data in these areas, or discard results collected in these areas.

Measurements will be made in all accessible tiles within the defined service area boundaries. L3Harris does not use test measurements outside of each service area boundary. Any areas or accessible tiles within the service area boundary that the County decides not to test will score as a PASS in the reliability calculations.

L3Harris will discard inaccessible tiles (i.e. those having no roads) from the reliability calculations with the acceptance criteria adjusted by treating the inaccessible tiles as exclusion zones.

The accessible tile structure is shown in Figure 4.

Figure 4. Erath County Accessible Tile Structure



DELIVERED AUDIO QUALITY

TSB-88 defines Channel Performance Criterion (CPC) as the specified minimum design performance level in a faded channel and provides a set of Delivered Audio Quality (DAQ) CPCs that define subjective voice quality performance applicable to both analog and digital voice systems. The DAQ definitions are in Figure 5.

Figure 5. Delivered Audio Quality Scale Definitions

DELIVERED AUDIO QUALITY	SUBJECTIVE PERFORMANCE DESCRIPTION
DAQ 5.0	Speech easily understood.
DAQ 4.5	Speech easily understood. Infrequent Noise/Distortion.

DELIVERED AUDIO QUALITY	SUBJECTIVE PERFORMANCE DESCRIPTION
DAQ 4.0	Speech easily understood. Occasional Noise/Distortion.
DAQ 3.4	Speech understandable with repetition only rarely required. Some Noise/Distortion.
DAQ 3.0	Speech understandable with slight effort. Occasional repetition required due to Noise/Distortion.
DAQ 2.0	Understandable with considerable effort. Frequent repetition due to Noise/Distortion.
DAQ 1.0	Unusable, speech present but unreadable.

STAKEHOLDER RESPONSIBILITIES

The County to provide:

- > Any non-automobile test vehicles required for the testing (e.g. boats for water-based coverage testing)
- > A driver / operator for any customer-provided test vehicles
- > Customer representative(s) to participate in tests as necessary
- > Access to the test areas as may be required in each test procedure

L3Harris to provide:

- > SUV/van for roads-based drive testing
- > A driver for L3Harris-provided vehicles
- > Drive test measurement equipment
- > Representatives to operate this equipment and execute the test procedures
- > Representative(s) to participate in tests as necessary
- > Final test results

Coverage Guarantees

L3Harris offers these guarantees based on the system design. Deviation from the details of the contractual design including, but not limited to, site count, tower location, antenna make and model, antenna location on the tower, changes to the antenna sub-systems, etc. will require a re-analysis of the coverage and may require a change to the coverage guarantee. The details of the design are shown in Figure 9 at the end of this document. Additionally, the guarantees are based on the coverage provided by the current GRRN system and the additional Erath sites.

These coverage guarantees only apply once installation and testing of all sites in the system has been completed.

Figure 6. Service Area Coverage Guarantees

SERVICE AREA DEFINITION AS SHOWN IN FIGURE 2	DESCRIPTION	REQUIRED PERFORMANCE CRITERIA	% VALIDATED CPC SERVICE AREA RELIABILITY ACCEPTANCE CRITERIA
Erath County	Mobile	DAQ 3.4	95%
Erath County	Portable Outdoor	DAQ 3.4	90%

Radio system coverage and performance are subject to degradation due to undefined anomalous propagation and interference beyond control of L3Harris. L3Harris cannot be responsible for degradation or disruption of Service caused by operation of other radio systems or by natural phenomena or other interference over which L3Harris has no reasonable control. In the event of a case of degradation due to interference by an outside source, with outside source encompassing everything other than L3Harris-supplied equipment, L3Harris will provide engineering support to the County at the County's expense to support efforts in resolving the interference issue with the outside party.

The project schedule may have to be adjusted to account for both the time spent reviewing and determining the source of the interference and the time spent working on potential mitigation efforts. Not all interference may be able to be mitigated and coverage guarantees may have to be adjusted based on the presence of external interference that is unable to be mitigated.

If a failure of the tests defined in this document occurs, L3Harris reserves the right to determine if failed test points/test tiles are due to undefined anomalous propagation and interference. If these are external sources of interference and are beyond the control of L3Harris, any such points/tiles will be excluded from subsequent data analysis, and the Percent Validated CPC Service Area Reliability re-calculated.

In locations where multiple coverage guarantees apply, performance need only be demonstrated at the most stringent level. For example, a test point that is demonstrated to have passing portable outdoor coverage is also considered to have passing mobile coverage.

Talk-Out Bit Error Rate (BER) Bounded Area Test

This test verifies RF coverage by measuring talk-out (base to mobile) BER throughout the bounded service areas defined in Section 1, and by calculating the percentage of measurements that are equal or better than a BER of 2.4 % required to support the specified CPC of DAQ 3.4.

SETUP

L3Harris uses its TYPHON wireless testing system to measure BER. TYPHON consists of L3Harris terminal radios, a GPS receiver to provide accurate position information for each measured data point, a computer with an internal clock that coordinates and records the test data, roof mounted antennas, and variable attenuators for use when testing portable coverage.

The TYPHON equipment mounts inside the test vehicle (SUV/van) and has an external antenna(s) mounted on the outside, centrally located on the vehicle’s roof, without other equipment installed on the roof.

When testing portable coverage, a variable attenuator installs in the test vehicle between the radio and the external antenna to simulate portable operations on the hip for both outdoor and indoor operation. For portable outdoor coverage verification, the variable attenuator is set to the appropriate level to account for portable body losses. For portable indoor coverage verification, the variable attenuator is set to account for the portable body losses plus the loss of the building category under evaluation. Variable attenuator values, where applicable, are shown in Figure 7.

Figure 7. Coverage Service Area, Body/Building Loss, and Attenuator Values

SERVICE AREA DEFINITION AS SHOWN IN FIGURE 2	DESCRIPTION	BODY LOSS (DB)	BUILDING LOSS (DB)	ATTENUATOR VALUE (DB) ¹
Erath County	Mobile	N/A	N/A	0 dB
Erath County	Portable Outdoor	8 dB	N/A	8 dB

DATA MEASUREMENTS

Each radio system base station site continuously transmits a P25 test pattern data sequence on a working channel (in a simulcast system, the same working channel is used for each simulcast site). The TYPHON equipment inside the test vehicle collects measurements of this signal every 3 seconds as it is driven along the defined test drive route. The software in the TYPHON laptop computer automatically records the BER as reported by the terminal radio for each 3-second measurement data record along the test drive route.

¹ Attenuator value accounts for portable body loss and antenna gain and will be finalized prior to acceptance testing based on actual equipment configuration.

DATA ANALYSIS AND ACCEPTANCE

As defined by Section 5 of TSB-88.3, latest revision, L3Harris post-processes all mean measurement data records collected from the drive test within the defined service area boundary, with data records recorded every 0.1-mile (typically) used in the final analysis. Measurements that have a BER equal to or less than 2.4% record as PASS; the remainder record as FAIL.

The installed radio system meets the coverage requirements if, for each bounded service area in Figure 6, the ratio of the number of PASS points to the total number of points in the service area equals or exceeds the minimum validated CPC service area reliability acceptance criteria.

RESULTS PRESENTATION

L3Harris plots the data records on a map showing the test tiles, the areas tested, and the test results. Different colors show ranges of measured BER. An included test report summarizes the test results.

Talk-Out Signal Strength Characterization Test

This test characterizes RF coverage by measuring talk-out (base to mobile) signal strength throughout the County's defined bounded service area.

SETUP

This test will use L3Harris's TYPHON wireless testing system to measure coverage performance. TYPHON uses calibrated test receivers to produce repeatable measurement results in conformance with industry standards. L3Harris maximizes the accuracy of test measurements through periodic calibration of the TYPHON system and using its integrated automated hardware and software that minimizes the likelihood of procedural errors. TYPHON can configure with up to four industrial grade measurement receivers to provide RSSI data for single or multiple sites, a GPS receiver to provide accurate position information for each measured data point, a computer with an internal clock that coordinates and records the test data, and a roof mounted antenna. TYPHON contains multiple receivers to facilitate gathering data simultaneously from several multi-sites or simulcast sites at common measurement locations.

DATA MEASUREMENTS

The TYPHON equipment mounts inside the test vehicle (a large van or SUV is recommended) with an external antenna mounted on the outside and centrally located on the vehicle's roof, without other equipment installed on the roof.

Each radio system base station site transmits either on the control channel, or an unmodulated carrier, on one selected working channel, and the equipment makes measurements of this signal at equal distance intervals throughout the entire drive route. The TYPHON equipment, operating at a minimum 1000 Hz sampling rate, operates in the "40 λ Wave Distance Average" analysis mode. With the test vehicle in motion¹ along the drive route, a local mean signal measurement is made every 40-wavelengths². By averaging a minimum of 200 data points within each 40-wavelength measurement window, the estimated mean value is within ± 1 dB of the actual value with 99% confidence.

DATA ANALYSIS

As defined by Section 5 of TSB-88.3, latest revision, L3Harris post-processes all mean measurement data records collected from the drive test within the defined service area boundary, with data records recorded every 0.1-mile (typically) used in the final analysis.

For each service area, L3Harris adjusts the minimum acceptable signal level at a portable radio to the mobile measurement reference point using the loss factors shown in Figure 8 (e.g., portable body loss, excess signal required to penetrate each random building category). A comparison is made between the

¹ Vehicle velocity must not exceed 60 miles per hour to ensure an adequate number of points over the measurement window.

² 40 wavelengths for UHF, 800 MHz and 900 MHz. 20 wavelengths for VHF 150 MHz.

mean measurement points in the service area and this adjusted minimum level, denoting the adjusted signal threshold.

Figure 8. Coverage Service Area and Signal Level

SERVICE AREA DEFINITION AS SHOWN IN FIGURE 2	DESCRIPTION	MINIMUM REQUIRE SIGNAL LEVEL (DBM)	BODY LOSS (DB)	BUILDING LOSS (DB)	ADJUSTED SIGNAL THRESHOLD (DBM) ¹
Erath County	Mobile	-110 dBm	N/A	N/A	-110 dBm
Erath County	Portable Outdoor	-110 dBm	8 dB	N/A	-102 dBm

RESULTS PRESENTATION

L3Harris plots the data records on a map showing the test tiles, the areas tested, and the test results. Different colors show ranges of measured mean signal levels. An included test report summarizes the test results.

¹ Adjusted Signal Threshold accounts for portable body loss and antenna gain and will be finalized prior to acceptance testing based on actual equipment configuration.

System Parameters

Figure 9. System Design Parameters

TRANSMIT	INSTALLATION NAME	NW	MORGAN MILL	STE1	DUBLIN 2
	Installation ID	NW	Morgan Mill	Ste1	Dublin 2
	Site Name	Northwest	Morgan Mill	Stephenville	Dublin 2
	Latitude	32° 22' 44.000" N	32° 23' 01.825" N	32° 11' 29.969" N	31° 59' 19.000" N
	Longitude	98° 25' 01.000" W	98° 10' 13.710" W	98° 15' 09.410" W	98° 14' 01.000" W
	Datum	WGS 1984	WGS 1984	WGS 1984	WGS 1984
	Site Elevation	1598 ft	1056 ft	1431 ft	1414 ft
	Frequency Range	764 - 806 MHz	764 - 806 MHz	764 - 806 MHz	764 - 806 MHz
	Base Station	MASTR V	MASTR V	MASTR V	MASTR V
	Other/Loss	Filter	Filter	Filter	Filter
	Station Output Power	49.1 W	48.3 W	49.0 W	48.3 W
	Combiner Model	DSCC75-04DS (4 ch.)	DSCC75-04DS (4 ch.)	DSCC75-04DS (4 ch.)	DSCC75-04DS (4 ch.)
	Tx to Tx Spacing	250 kHz	250 kHz	250 kHz	250 kHz
	Combiner Loss	2.4 dB	2.4 dB	2.4 dB	2.4 dB
	Power Monitor	CP01110	CP01110	CP01110	CP01110
	Surge Protector	TSX-DFM-BF	TSX-DFM-BF	TSX-DFM-BF	TSX-DFM-BF
	Cable/Length/Loss	LCF158-50JA / 200.0 ft / 1.2 dB	LCF158-50JA / 260.0 ft / 1.6 dB	LCF158-50JA / 526.0 ft / 3.1 dB	LCF158-50JA / 270.0 ft / 1.6 dB
		SCF12-50J / 25.0 ft / 0.7 dB	SCF12-50J / 25.0 ft / 0.7 dB	SCF12-50J / 25.0 ft / 0.7 dB	SCF12-50J / 25.0 ft / 0.7 dB
		SCF12-50J / 10.0 ft / 0.3 dB	SCF12-50J / 10.0 ft / 0.3 dB	SCF12-50J / 10.0 ft / 0.3 dB	SCF12-50J / 10.0 ft / 0.3 dB
		SCF12-50J / 3.0 ft / 0.1 dB	SCF12-50J / 3.0 ft / 0.1 dB	SCF12-50J / 3.0 ft / 0.1 dB	SCF12-50J / 3.0 ft / 0.1 dB
	Jumper Cable/Loss	F4A-DMDM-10-P / 0.3 dB	F4A-DMDM-10-P / 0.3 dB	F4A-DMDM-10-P / 0.3 dB	F4A-DMDM-10-P / 0.3 dB
	Antenna Model	SC49C-HWB LDF(D02-NUFP)	SC499-HWB LDF(D00-NUFP)	SC46A-HF1LDF(D00-PIP)	SR4A8-HF4P4LDF(D00-PIP)
	Antenna Height (C.L.)	180.0 ft	240.0 ft	506.0 ft	250.0 ft

RECEIVE	Antenna Azimuth	0°	0°	0°	0°
	Antenna Mechanical Tilt	0°	0°	0°	0°
	Antenna Gain (Hzn)	9.3 dBd	8.8 dBd	10.0 dBd	8.3 dBd
	Maximum ERP (Hzn)	163.1 W	130.8 W	138.5 W	113.9 W
	HAAT	457.4 ft	126.7 ft	588.3 ft	383.1 ft
	Total System Gain	17.9 dB	17.9 dB	17.9 dB	17.9 dB
	Multicoupler	CP00929 (8 ch.)	CP00929 (8 ch.)	CP00921 (8 ch.)	CP00929 (8 ch.)
	Multicoupler Bandwidth	12 MHz	12 MHz	6 MHz	12 MHz
	TTA Pad	0.0 dB	0.0 dB	0.0 dB	0.0 dB
	Distribution Pad	7.8 dB	7.1 dB	4.3 dB	7.0 dB
	Surge Protector	DGXZ+36NMNF-A	DGXZ+36NMNF-A	DGXZ+36NMNF-A	DGXZ+36NMNF-A
	Cable/Length/Loss	LCF78-50JA / 200.0 ft / 2.1 dBSCF12-50J / 25.0 ft / 0.7 dBSCF12-50J / 3.0 ft / 0.1 dB	LCF78-50JA / 260.0 ft / 2.7 dBSCF12-50J / 25.0 ft / 0.7 dBSCF12-50J / 3.0 ft / 0.1 dB	LCF78-50JA / 526.0 ft / 5.5 dBSCF12-50J / 25.0 ft / 0.7 dBSCF12-50J / 3.0 ft / 0.1 dB	LCF78-50JA / 270.0 ft / 2.8 dBSCF12-50J / 25.0 ft / 0.7 dBSCF12-50J / 3.0 ft / 0.1 dB
	Tower Top Model	CP00732	CP00732	CP00732	CP00732
	Jumper Cable/Loss	F4A-NMNM-4-P / 0.1 dB F4A-NMNM-6-P / 0.2 dB	F4A-NMNM-4-P / 0.1 dB F4A-NMNM-6-P / 0.2 dB	F4A-NMNM-4-P / 0.1 dB F4A-NMNM-6-P / 0.2 dB	F4A-NMNM-4-P / 0.1 dB F4A-NMNM-6-P / 0.2 dB
	Antenna Model	SC49C-HWB LDF(D02-NUFP)	SC499-HWB LDF(D00-NUFP)	SC46A-HF1LDF(D00-PIP)	SR4A8-HF4P4LDF(D00-PIP)
	Antenna Height (C.L.)	180.0 ft	240.0 ft	506.0 ft	250.0 ft
	Antenna Azimuth	0°	0°	0°	0°
	Antenna Mechanical Tilt	0°	0°	0°	0°
	Antenna Gain (Hzn)	8.2 dBd	8.8 dBd	10.0 dBd	8.6 dBd
	HAAT	457.4 ft	126.7 ft	588.3 ft	383.1 ft

TRAINING

Overview

Developing the knowledge and skills of Erath County personnel who will operate and manage the new radio system are critical elements to successfully migrate to a P25 radio system. To perform these tasks, high-quality, performance-based training is necessary to build and enhance personnel competence. In addition, training enables the County to optimally use the features and capabilities of P25 to meet and exceed its communication requirements.

The comprehensive training program provides Erath County personnel with the knowledge and skills needed to operate the new P25 radio system.

To provide high-quality, performance-based training, L3Harris develops and maintains our training courses using a systematic approach. This methodology identifies the training necessary for each job position and focuses on the performance of tasks. Our training experts design and develop courses with explicit learning objectives and appropriate content. We evaluate the training effectiveness and use the results to maintain and improve the training programs.

The systematic approach to training methodology enables us to deliver training in the most effective learning environment, such as a classroom or laboratory, and use a proper mixture of discussion, lecture, and hands-on training to provide for optimal learning. In addition, we create easy to follow student materials that support the training and provide appropriate supplemental technical documentation.

Our technical training staff, comprised of training professionals with extensive experience in both telecommunications and adult learning, deliver the training. Instructor certification means that each trainer possesses the instructional skills and technical competencies to deliver high-quality training to our customers. We regularly evaluate our instructors, and they participate in a continuing instructor development program to maintain and improve their technical and instructional knowledge and skills. Further, we assign our instructors to conduct customer training based on their areas of expertise.

The Training Plan for the County encompasses the following categories:

- > P25 System Overview Training
- > Dispatcher Console Configuration and Operator Training
- > Radio User Training
- > Radio Programming Training

These categories define the training program for County personnel in distinct job classifications. Each category includes a description of the training, the course length, and the timing of course delivery in relation to project implementation.

P25 System Overview Training

The P25 System Overview virtual classroom course is recommended for individuals responsible for system implementation and management of an L3Harris P25 radio system. It provides participants with an understanding of terminology, equipment, components, and operational processes associated with

the P25 system. Topics include RF communication basics, VIDA network and site equipment, call processing, wide-area coverage solutions, interoperability, and much more.

Virtual classroom training is live, instructor-led training over the Internet and is ideal for transferring knowledge when hands-on instruction is not required. We limit each virtual classroom session to four hours per day, allowing participants to perform their normal job duties during part of the day. The P25 System Overview open-enrollment course is conducted every quarter over five consecutive days from 11:30 a.m. to 3:30 p.m. (CST). Our training plan includes tuition for one person to attend this course.

Dispatcher Training

Dispatch personnel are at the core of effective and efficient implementation of a radio system. While the time required for training is minimal, the payback is immense. Training on the Symphony Dispatch Console consists of console configuration and operation training for designated dispatch personnel, and web-based refresher training.

CONSOLE CONFIGURATION & OPERATION TRAINING

L3Harris will conduct a two-day Console Configuration and Operation course for up to four designated dispatch supervisory personnel. This course provides participants with the knowledge and skills to configure the Symphony Dispatch Console to meet operational needs, and operational training using a train-the-trainer approach that prepares participants to train County dispatchers.

The console configuration portion of the training includes a detailed operational overview that introduces the various features and capabilities of the console. Participants will work within the configuration utility to explore the various settings and how these settings impact the operation of the console. With an understanding of the Configuration Utility settings, participants will have the requisite knowledge to define the parameters that best satisfy operational needs. These settings are saved and used as a template to set up additional consoles. Additionally, the operating characteristics of the console will be defined, and the Configuration Editor is used to create setups to address the various functions required. This includes performing the following tasks:

- > Adding, renaming, and deleting workspace tabs
- > Designing communications modules (i.e., entities, colors, sizes, etc.)
- > Adding, deleting, and moving communication modules
- > Changing the sidebar panel layout
- > Creating, switching, deleting and password protecting console setups
- > Setting encryption indicators and controls (if applicable)

The operational portion of the training includes performing the following tasks using the Symphony Dispatch Console, as applicable:

- > Select communication modules
- > Transmit and receive group and individual calls

- > Transmit, receive, and clear emergency calls
- > Review call history and play back audio
- > Modify communication modules
- > Create, modify, and transmit on patches and simulselects
- > Control conventional channels
- > Use the paging function
- > Change console setups
- > Use special and enhanced console features

This training will take place in the dispatch facility after the Symphony Dispatch Consoles are installed and made operational but prior to cutover. Each participant will receive a copy of the training presentation, any applicable technical documentation, and both an electronic and hard copy of the Symphony Dispatch Console Operation Quick Reference Guide.

ONLINE REFRESHER TRAINING

The importance of refresher training is just as important for dispatchers as it is for radio users. Therefore, L3Harris will provide the County with one year of unlimited access to the web-based Symphony Dispatch Console Operation course for all dispatchers and their supervisors. The training is delivered through L3Harris Technical University, our online training program, previously described in the Radio User Training section of our proposal. The County may decide to provide dispatchers with access to the online training prior to the instructor-led training to optimize learning console operation.

Figure 1. The Symphony Dispatch Console



Radio User Training

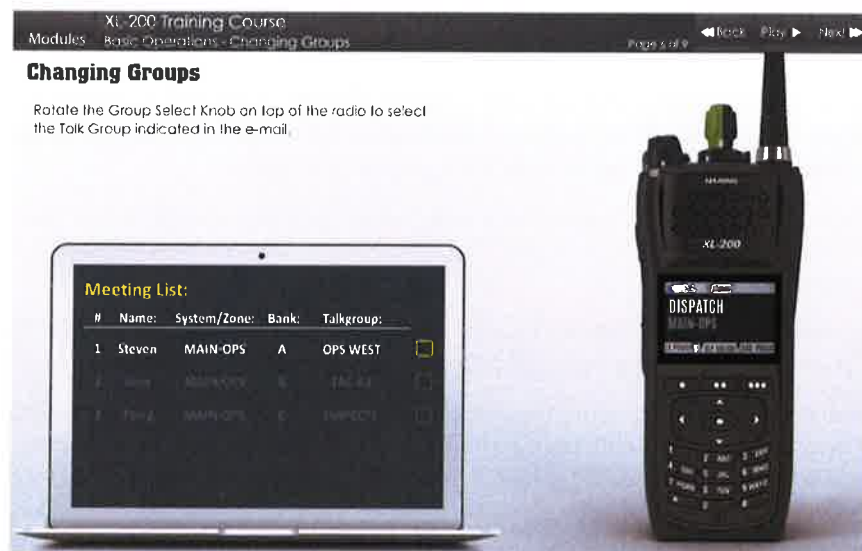
ONLINE TRAINING

The importance of initial and refresher training for radio users is paramount to smooth and effective operations. L3Harris Technical University consists of web-based training courses that effectively deliver initial and ongoing training that will improve performance and reduce the number of trouble reports. Additionally, it can be utilized to train new personnel due to turnover. A web-based training solution has numerous benefits that include the following:

- > Training is accessible whenever needed (24 hours a day, seven days a week) from any location that has access to the Internet.
- > Courses are self-paced, highly interactive, and developed utilizing animation and other multimedia tools to help keep students engaged, which increases retention.
- > It is cost-effective, especially when considering student or instructor travel and living expenses associated with attending traditional classroom instruction.
- > Training delivery is consistent and structured to ensure learning objectives are met.

L3Harris Technical University will deliver one year of unlimited access to standard radio operational courses for all County personnel. Each student will require a unique e-mail address, self-register, and create a unique username and password. Students will be able to access transcript information showing course progress and completion status and print a completion certificate once all course activities are completed.

Figure 2. The XL-200P is L3Harris' latest full-featured radio



Radio Programming Training

The Radio Programming course is recommended for individuals responsible for programming the system subscriber units. This course provides system managers with the knowledge and skills to program L3Harris P25 portable and mobile radios using Radio Personality Manager 2 (RPM 2) software.

Participants will be trained to perform the following tasks, as applicable:

- > Develop radio personalities to meet user needs
- > Select the appropriate bandwidth settings
- > Create trunked and conventional frequency sets
- > Create group sets
- > Create channel identity set
- > Create an individual call set
- > Create a phone call set
- > Create trunked and conventional systems
- > Create zones
- > Configure radio roaming capabilities
- > Configure options specific to the programmed radio
- > Convert sets from local to global and global to local
- > Program a P25 radio and verify proper operation

This two-day course will be conducted onsite 1 time for up to 5 students and should take place during the latter stages of the installation phase of the project or shortly after cutover.

Summary

The comprehensive training program recommended for Erath County involves personnel from various departments and at many levels. We envision a program that facilitates the transition to a P25 radio system and builds the foundation for long-term excellence. Wide participation and in-depth instruction reflect our commitment to delivering an outstanding training program.

L3Harris will provide a list of course objectives, syllabus, preliminary schedule, approximate class time durations, and core competency skills for each training session. We will provide course attendance sheets for each training session.

During training, each student will receive a training manual that contains a copy of the training presentations, hands-on exercise guides, and applicable technical documentation.

The training plan will facilitate a smooth transition to the new radio communication system. However, should Erath County desire additional training in the future due to turnover in personnel, upgrades to the system, or other factors, the L3Harris Technical Training Catalog can be found on our website at <https://www.harris.com/solution/pspc-technical-training>. The catalog includes the training schedule, student tuition, and onsite training prices. The County will be responsible for student travel and living expenses for training attended in Lynchburg.

PRICING SUMMARY

L3Harris is pleased to provide Erath County, Texas with the following firm fixed price proposal. Pricing is valid for 90 days from submittal date of September 7, 2023. Upon expiration of the pricing validity, L3Harris reserves the right to provide an updated pricing proposal.

P25 RADIO SYSTEM INFRASTRUCTURE	LIST PRICE (USD \$)	% OFF	PRICE (USD \$)
Premier Core Licenses	\$56,600.00	26%	\$41,884.00
Northwest Site Equipment, Licenses, and Software	\$348,037.43	25%	\$261,567.73
Morgan Mill Site Equipment, Licenses, and Software	\$341,513.30	25%	\$256,739.87
Stephenville (Prather Tower) Licenses	\$50,000.00	26%	\$37,000.00
Dublin 2 Equipment, Licenses, and Software	\$338,937.36	25%	\$254,833.68
Erath SO Dispatch Center Equipment, Symphony Consoles (QTY 4), XL-200M Constrol Stations (QTY 4 Law & QTY 3 Fire), & Antenna System	\$472,661.78	26%	\$350,669.06
Back-up Power (Northwest, Morgan Hill, & Dublin 2)	\$131,100.00	0%	\$131,100.00
Microwave Equipment, Installation, and Onsite Training	\$777,488.92	2%	\$764,312.40
P25 RADIO SYSTEM INFRASTRUCTURE SUBTOTAL			\$2,098,106.74
PROFESSIONAL SERVICES			PRICE (USD \$)
Implementation and Support Services	\$1,257,958.00	0%	\$1,257,958.00
Staging & Freight	\$30,247.00	0%	\$30,247.00
Civils	\$245,952.50	0%	\$245,952.50
Training	\$30,675.00	0%	\$30,675.00
PROFESSIONAL SERVICES SUBTOTAL			\$1,564,832.50
SUBSCRIBER UNITS			PRICE (USD \$)
XL-200M Mobile - Multiband (QTY 65) - Fire	\$647,401.95	26%	\$479,007.95
-SERVICE ASSIST, STANDARD WARRANTY 2 YR, XL200M			
-SERVICE ASSIST, EXT WARRANTY 3 YR, XL200M			
-FEATURE, VHF BAND			
-FEATURE, 700/800 MHZ BAND			
-FEATURE, ENCRYPTION LITE			
-FEATURE, PHASE 2 TDMA			
-FEATURE, IN-BAND GPS			
-FEATURE, XL200M SINGLE-KEY DES ENCRYPTION			
-FEATURE, XL200M SINGLE-KEY AES ENCRYPTION			
-FEATURE PACKAGE, P25 TRUNKING			
-KIT, MOUNTING XL-MOBILE UNIVERSAL			
-MICROPHONE, XL, STANDARD MOBILE			
-ANTENNA, ELEMENT, FLEXIBLE, V/U/700/800			
-ANTENNA, BASE, STD ROOF MOUNT LOW LOSS			
-ANTENNA, GPS, ROOF MOUNT			
-CONTROL UNIT, XL-CH			

SUBSCRIBER UNITS			PRICE (USD \$)
XL-200P Portable - Multiband (QTY 135) - Fire -PORTABLE,XL-200P,FKP,PGRN,US,NA -SERVICE ASSIST,STANDARD WARRANTY 2 YR, XL200P -SERVICE ASSIST,EXT WARRANTY 3 YR, XL200P -FEATURE, LTE -FEATURE, IN-BAND GPS -OPERATION,LOAD NIFOG PERSONALITY -FEATURE,P25 PHASE 2 TDMA -FEATURE, ENCRYPTION LITE -FEATURE, SINGLE-KEY AES ENCRYPTION -FEATURE, SINGLE-KEY DES ENCRYPTION -FEATURE PACKAGE,P25 TRUNKING -OPTION, IMMERSIBLE RADIO OPERATION -FEATURE PACKAGE,DUAL BAND VHF+ 7/800 -BATT,LI-ION,4800,HI-CAP,HAZLOC RADIO,C1D -ANTENNA,FLEX,HELICAL,136-870 MHZ -SPKR MIC, XL XTRM, XL200P, GRN -CHARGER, SINGLE BAY + -BEON XL RADIO LICENSE -KIT,GLOVE FRIENDLY KNOB COVER-VOL&CHAN (QTY 45)	\$1,322,355.40	27%	\$969,182.15
XL-200M Mobile - Multiband (QTY 73) - Law -SERVICE ASSIST,STANDARD WARRANTY 2 YR, XL200M -SERVICE ASSIST,EXT WARRANTY 3 YR, XL200M -FEATURE, VHF BAND -FEATURE, 700/800 MHZ BAND -FEATURE, ENCRYPTION LITE -FEATURE, PHASE 2 TDMA -FEATURE, IN-BAND GPS -FEATURE, 256-AES, 64-DES ENCRYPTION -FEATURE PACKAGE, P25 TRUNKING -KIT, MOUNTING XL-MOBILE UNIVERSAL -MICROPHONE, XL, STANDARD MOBILE -ANTENNA, ELEMENT, FLEXIBLE, V/U/700/800 -ANTENNA, BASE, STD ROOF MOUNT LOW LOSS -ANTENNA, GPS, ROOF MOUNT -CONTROL UNIT, XL-CH	\$781,830.73	26%	\$578,554.93
XL-200P Portable - Multiband (QTY 81) - Law -PORTABLE,XL-200P,FKP,BLK,US,NA -SERVICE ASSIST,STANDARD WARRANTY 2 YR, XL200P -SERVICE ASSIST,EXT WARRANTY 3 YR, XL200P -FEATURE, LTE -FEATURE, IN-BAND GPS -OPERATION,LOAD NIFOG PERSONALITY -FEATURE,P25 PHASE 2 TDMA -FEATURE, ENCRYPTION LITE -FEATURE, 256-AES,64-DES ENCRYPTION -FEATURE PACKAGE,P25 TRUNKING -FEATURE PACKAGE,DUAL BAND VHF+ 7/800 -BATTERY,LI-ION,HI-CAPACITY,4800MAH -ANTENNA,FLEX,HELICAL,136-870 MHZ -SPEAKER MICROPHONE -CHARGER, SINGLE BAY + -BEON XL RADIO LICENSE	\$781,651.62	27%	\$572,805.27
Mobile Installation, Radio Programming, & Legacy Subscriber Removal	\$111,833.96	0%	\$111,833.96
SUBSCRIBER UNITS SUBTOTAL			\$2,711,384.26

SYSTEM TOTAL			\$6,374,323.50
Granbury Regional Radio Network Additional Discount			-\$1,374,401.50
**LTE Feature One-time Discount			-\$142,560.00
**BeOn Application One-time Discount			-\$43,362.00
PROJECT TOTAL			\$4,814,000.00
OPTIONS BELOW THE LINE			
Maintenance (Year 1-15) - REQUIRED PER GRRN	\$2,568,264.14	0%	\$2,568,264.20
Dublin 2 Generator, Shelter, and Services	\$183,088.75	0%	\$183,088.75
Morgan Hill Generator, Shelter, and Services	\$183,088.75	0%	\$183,088.75
Northwest Generator, Shelter, and Services	\$183,088.75	0%	\$183,088.75
Portable Radio Optional Accessories (Leather Case - QTY 216, Speaker Mic 500F - QTY 135, Backup Batteries - QTY 216, & Programming Cables - QTY 2)	\$110,595.00	45%	\$60,827.25
Mobile Radio Optional Accessories (External Speakers - QTY 138, CABLE, XL-MOBILE, SPEAKER ACCY QTY 138 & Programming Cables - QTY 2)	\$27,030.00	45%	\$14,866.50
Exacom Logging Recorder, Maintenance Years 1-3, & SUMS Support Years 1-6	\$122,988.80	0%	\$122,988.80

**State and Local taxes not included*

One Hundred Percent (100%) of the purchase price of Terminal Hardware shall be invoiced upon shipment of unit on a per unit basis.

Unless otherwise specified, the Granbury Regional Radio Network Additional Discount applied to reach the project total is based upon all items proposed and overall system package purchase.

***Feature and application discount is contingent upon Erath County, TX providing L3Harris a signed contract by September 28, 2023*

Additional Terminal Hardware purchased prior to Factory Acceptance Testing will be priced in accordance with the subscriber radios priced as part of the base contract. Terminal Hardware purchased after Factory Acceptance Testing will be priced at the 45% discount set forth in the Cooperative Purchasing section of this Agreement.

Milestone Payment Schedule	%	Invoice Value
Contract Execution	15%	494,100.00
Detailed Design Review	10%	329,400.00
Microwave System Procurement	20%	658,800.00
Standard Equipment Procurement	10%	329,400.00
Equipment Staging @ Factory	10%	329,400.00
Infra Equipment Shipment	5%	164,700.00
Installation	15%	494,100.00
Final System Acceptance	15%	494,100.00
Infrastructure & Services	100%	\$3,294,000.00
L3Harris Radios	100%	\$1,520,000.00
Total Milestone Payments	100%	\$4,814,000.00



EXHIBIT B

SOFTWARE LICENSE AGREEMENT

This License Agreement ("License Agreement") is made upon the Effective Date of the Primary Agreement (the "Effective Date") between L3Harris Technologies, Inc., a Delaware Corporation, acting through its Communication Systems Segment, ("LICENSOR" or "L3Harris") with offices at 221 Jefferson Ridge Parkway, Lynchburg, VA 24501 and the Erath County, Texas ("LICENSEE"). LICENSOR is the owner of certain wireless communications software programs and LICENSEE desires to obtain a license from LICENSOR to use such wireless communications programs.

1.0 Definitions.

1.1 **"Designated Systems"**: Means the L3Harris System(s), products, and Designated Terminals purchased by Buyer and identified in the Primary Agreement for which the Licensed Programs and documentation are intended to be used.

1.2 **"Designated Terminals"**: Means the LICENSOR's Terminals purchased by LICENSEE.

1.3 **"Licensed Programs"**: The term Licensed Programs shall mean the wireless communications computer programs in software or firmware supplied under this License Agreement by LICENSOR in binary object code format to the LICENSEE (stand alone or in conjunction with the purchase of a LICENSOR wireless communications System.) Licensed Programs shall also include all other material related to the Licensed Programs supplied by LICENSOR to LICENSEE hereunder, and which may be in machine readable or printed form, including but not limited to user documentation and/or manuals.

1.4 **"Open Source Software"**: Means software with either freely obtainable source code, license for modification, or permission for free distribution.

1.5 **"Open Source Software License"**: The terms or conditions under which the Open Source Software is licensed.

1.6 **"Primary Agreement"**: The agreement to which this exhibit is attached.

1.7 **"Third Party Software Products"**: Shall mean programs that are not developed by LICENSOR which are licensed / purchased by LICENSOR for inclusion in its products.

2.0 License Grant for Licensed Programs.

2.1 Subject to the Contract and the performance by Licensee of its obligations hereunder, LICENSOR hereby grants to Licensee, and Licensee hereby accepts from LICENSOR, (a) a personal, non-transferable, non-exclusive, perpetual, limited license to use the Licensed Programs in object code format only and (b) install and execute such Licensed Programs on Licensee's equipment and (c) are to be used for internal business purposes only. All licensed programs under this License Agreement shall only be used in conjunction with the Designated System. This license does not transfer any right, title, or interest in the Licensed Programs. The license granted authorizes Licensee to use the Licensed Programs in object code format and does not grant any rights to source code.

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3.0 Protection and Security of Licensed Programs.

LICENSEE acknowledges and agrees that the Licensed Programs and any materials and/or documentation related thereto, and any portion thereof, supplied by LICENSOR hereunder are proprietary and confidential to LICENSOR or applicable third party licensors and are a valuable commercial asset of LICENSOR or their third party owners. LICENSEE also acknowledges and agrees that LICENSOR and/or the third party licensors have and shall retain all proprietary rights in their respective portions of the Licensed Programs and any materials and/or documentation related thereto. LICENSEE (i) shall respect such proprietary rights, (ii) shall protect LICENSOR and any third party licensor's proprietary rights at least to the extent that it protects its own proprietary information, or such (iii) shall not use the Licensed Programs nor any materials or documentation related thereto except for the purposes for which they are being made available as set forth in this License Agreement and (iv) shall not reproduce, print, disclose, or otherwise make said Licensed Programs or materials and/or documentation related thereto available to any third party, in whole or in part, in whatever form, except as permitted in the terms of this License Agreement.

4.0 Warranty

Seller warrants, for the greater of a period of one year or, if a longer Warranty Period for the product containing the Licensed Program is set forth in a Primary Agreement, the longer Warranty Period shall apply commencing with the date of Licensee's Acceptance of their Designated System, that any Licensed Program furnished to Licensee under this License Agreement shall be capable of successfully operating on the Designated System in accordance with the logic defined in the operator's manuals when the System is supplied with correct input data. If, on the basis of evidence submitted to LICENSOR within the term of this warranty, it is shown that any Licensed Program does not meet this warranty, LICENSOR will, at its option, either correct the defect or error in the Licensed Program, free of charge, or make available to Licensee a substitute program. The foregoing warranty is exclusive and in lieu of all other warranties whether written, oral, implied or statutory. **NO IMPLIED OR STATUTORY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT, SHALL APPLY, ALL OF WHICH ARE EXPRESSLY DISCLAIMED BY LICENSOR.**

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In the event that the Licensed Programs do not conform to the representation above, LICENSEE's sole remedy and LICENSOR's sole and exclusive liability shall be to replace such Licensed Programs with the then current released version of such Licensed Programs.

5.0 Limitation of Liability.

5.1 THE LIMITATION OF LIABILITY PROVISION IN THE PRIMARY AGREEMENT SHALL GOVERN THIS LICENSE AGREEMENT AND SECTION 5.2 SHALL NOT APPLY. IF THERE IS NO LIMITATION OF LIABILITY PROVISION IN THE PRIMARY AGREEMENT, SECTION 5.2 SHALL APPLY.

5.2 IN NO EVENT WILL LICENSOR AND/OR ANY THIRD PARTY LICENSOR(S) BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES, INCLUDING BUT NOT LIMITED TO ANY DAMAGES RESULTING FROM LOSS OF USE, LOSS OF DATA, LOSS OF PROFITS OR LOSS OF BUSINESS, WHETHER BASED ON CONTRACT, TORT, STRICT LIABILITY OR ANY OTHER THEORY OR FORM OF ACTION, EVEN IF LICENSOR AND/OR ITS THIRD PARTY LICENSOR(S) HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. LICENSOR'S AND THIRD PARTY LICENSORS', LIABILITY IN CONTRACT, TORT OR OTHERWISE ARISING OUT OF OR IN CONNECTION WITH THIS LICENSE AGREEMENT OR THE USE OF THE LICENSED PROGRAMS SHALL NOT EXCEED THE TOTAL COMPENSATION PAID TO LICENSOR BY LICENSEE FOR THE PRODUCTS CONTAINING THE LICENSED PROGRAMS.

6.0 Term and Termination.

6.1 LICENSOR reserves the right, in addition to any other remedies it may retain in this License Agreement or may be entitled to in law or equity (including immediate injunctive relief and repossession of all non-embedded Licensed Programs and documentation), to terminate this License Agreement at any time prior to the expiration of any Term in the event LICENSEE breaches any material term or condition or fails to perform or observe any obligations or covenants of this License Agreement and such failure and/or breach is not remedied within thirty (30) days of written notice from LICENSOR.

6.2 Within thirty (30) days after termination or expiration of this License Agreement, LICENSEE will return to LICENSOR all confidential material including but not limited to all copies, partial copies, and/or modified copies (if any) of Licensed Programs and any equipment owned by LICENSOR in LICENSEE's possession.

7.0 Assignment/Transfer.

This License Agreement, the licenses granted hereunder and the Licensed Programs provided to LICENSEE under this License Agreement may not be assigned, sub-licensed, or otherwise transferred by LICENSEE to any third party without LICENSOR's prior written consent, except that this license may be assigned if the Products containing the Licensed Programs are transferred but the new owner or user of the Products may only use the Licensed Programs in accordance with terms of this License Agreement. Subject

to the foregoing, any assignee hereunder shall be subject to all of the terms, conditions and provisions of this License Agreement. Any attempt by LICENSEE to assign, sub-license, or transfer the Licensed Programs, or any of the rights or duties contained in this License Agreement, without LICENSOR's prior written consent shall be void.

8.0 Severability.

If any term or provision of the License Agreement is determined by a court or government agency of competent jurisdiction to be invalid under any applicable statute or rule of law, such provision(s) are, to that extent, deemed omitted, but this License Agreement and the remainder of its provision shall otherwise remain in full force and effect.

9.0 Waiver.

No waiver will be implied from conduct or failure to enforce rights. No waiver will be effective unless in writing signed on behalf of the party against whom the waiver is asserted.

10.0 Compliance with Laws.

Licensee acknowledges that the Licensed Programs are subject to the laws and regulations of the United States and Licensee will comply with all applicable laws and regulations, including export laws and regulations of the United States. Licensee will not, without the prior authorization of L3Harris and the appropriate governmental authority of the United States, in any form export or re-export, sell or resell, ship or reship, or divert, through direct or indirect means, any item or technical data or direct or indirect products sold or otherwise furnished to any person within any territory for which the United States Government or any of its agencies at the time of the action, requires an export license or other governmental approval. Violation of this provision is a material breach of this License Agreement.

11.0 Governing Law.

This License Agreement will be governed by the laws of the United States to extent that they apply and otherwise to the laws of the State of New York. The terms of the U.N. Convention on Contracts for the International Sale of Goods do not apply. The parties expressly agree that the Uniform Computer Information Transactions Act ("UCITA") applicable in any jurisdiction shall not apply to this License Agreement.

12.0 U.S. Government.

If Licensee is the U.S. Government, the Licensed Programs and documentation qualify as "commercial items," as that term is defined at Federal Acquisition Regulation ("FAR") (48 C.F.R.) 2.101, consisting of "commercial computer software" and "commercial computer software documentation" as such terms are used in FAR 12.212. Consistent with FAR 12.212, and notwithstanding any other FAR or other contractual clause to the contrary in any agreement into which the License Agreement may be incorporated, Customer may provide to Government end user or, if the License Agreement is direct, Government end user will acquire, the software and documentation with only those rights set forth in the License Agreement. Use of either the software or documentation or both constitutes agreement by the Government that the software and documentation are "commercial computer software" and "commercial computer software documentation," and constitutes Acceptance of the rights and restrictions herein.

13.0 Agreement.

This License Agreement may be part of a Primary Agreement between LICENSOR and LICENSEE for the purchased products by LICENSEE from LICENSOR. The Primary Agreement and this License Agreement contain the full understanding of the parties with respect to the subject matter hereof and which supersede all prior understandings and writings relating thereto and which shall become binding on the Effective Date of this License Agreement. No waiver, consent, modification, amendment, or change to the terms of this License Agreement shall be binding unless agreed to in a writing signed by LICENSEE and LICENSOR. If there is any conflict between the terms of the Primary Agreement and this License Agreement as to the Licensed Programs, the terms of this License Agreement will prevail.

14.0 Notices.

Notices shall be provided as set forth in the Primary Agreement. In the event there is no notice provision in the Primary Agreement, notices and other communications between the parties shall be transmitted in writing by certified mail or nationally recognized overnight courier service.

15.0 Survival.

Sections 2, 3, 5, 6, 8, 9, 11, and 13 of this License Agreement shall survive termination of this agreement.

[End of Document]



Transamerica Life Insurance Company & Retiree Rx Care 2024 Renewal Notice and Benefit Confirmation

Group: Erath County
Return to TAC by: 9/30/2023

Please complete and initial each section confirming your groups retiree health benefits. Renewal rate is effective on 1/1/2024. Email renewals to CCS@county.org.

MEDICAL ONLY PLAN

Current Plan: Plan F

Current Monthly Rate: \$279.08

☒ **Renew and keep** current plan.

☐ **Change to a Package Option (select only one from the list below):**

PACKAGE OPTIONS

☐ **Package 1**

- Medical: \$279.08
- Rx: \$274.07
- MedAdvantage: \$374.85

☐ **Package 2**

- Medical: \$155.45
- Rx: \$108.00
- MedAdvantage: \$288.27

☐ **Package 3**

- Medical: \$255.43
- Rx: \$239.80
- MedAdvantage: \$288.27

_____ Initial to accept 2024 retiree Medical plan and Rx option or package options rates.

MANAGE MY HEALTH (OPTIONAL)

☐ Add Manage My Health for an additional \$10 per retiree per month.

_____ Initial to accept Manage My Health.

CountyChoice Silver
Member Contact Designations
Erath County

Contracting Authority: As specified in the Interlocal Participation Agreement, each Member hereby designates and appoints a Contracting Authority of department head rank or above and agrees that TAC HEBP shall not be required to contact or provide **notices** to any other person. Further, any notice to, or agreement by, a Member's Contracting Authority, with respect to service or claims hereunder, shall be binding on the Member. Each Member reserves the right to change its Contracting Authority from time to time by giving written notice to TAC HEBP. Please complete each category below:

Please list changes and/or corrections below.

Name/Title: Aracely Pacheco/Deputy Treasurer
Address: 100 W. Washington St
Stephenville, TX 76401
Phone:
Fax:
Email: countytreasurer1@co.erath.tx.us

Becky Keith/HR & Payroll Officer

100 W Washington St
Stephenville, TX 76401

254-459-5053

Not one

erathhr@co.erath.tx.us

Primary Contact: Main contact for daily matters pertaining to the retiree benefits.

Please list changes and/or corrections below.

Name/Title: Aracely Pacheco/Deputy Treasurer
Address: 100 W. Washington St
Stephenville, TX 76401
Phone:
Fax:
Email: countytreasurer1@co.erath.tx.us
HIPAA Secure Fax

Becky Keith/HR & Payroll Officer

100 W Washington St
Stephenville, TX 76401

254-459-5053

Not one

erathhr@co.erath.tx.us

Billing Contact: Responsible for receiving all invoices relating to retiree benefits. (Not applicable if Direct Bill).

Please list changes and/or corrections below.

Name/Title:
Address:
Phone:
Fax:
Email:



Signature of County Judge or Contracting Authority

9-27-2023

Date

Brandon J. Huckabee County Judge
Please PRINT Name and Title



Specializing in Sales, Inspections, Service, Testing and Design for Commercial and Residential Facilities

- Fire Sprinkler Systems • Fire Alarms Systems • Fire Extinguishers • Kitchen Suppression Systems • Backflow Testing •
- 24hr Monitoring •

September 21, 2023

Re: Erath County Annex
222 E. College St.
Stephenville, TX 76401

Ladies & Gentlemen:

We are pleased to offer for your consideration this proposal to furnish all necessary plans, labor, and materials for the testing and inspections of the automatic fire suppression system in the above-mentioned project.

It is considerations of this proposal to perform the following:

- Annual **fire sprinkler** system inspection and backflow test at a cost \$659.
- Semi-Annual **clean agent** fire suppression system inspection in both vaults (\$869).
- Annual **clean agent** fire suppression system inspection in both vaults (\$1272).

Please note that we do not include the following items of work which, where required or desired, shall be provided by others prior to the completion of our work:

1. Correction of any deficiencies
2. Sales Tax
3. Door fan enclosure test(s)
4. Main alarm panel

This proposal is subject to change at the option of **AUTOMATIC FIRE PROTECTION, INC.**, thirty (30) calendar days from this date.

We appreciate the opportunity you've given us to provide our services, and we always assure you of our full cooperation. Should you desire or require additional information, please contact me.

Sincerely,
AUTOMATIC FIRE PROTECTION, INC.

Michael Osborne
Estimator / Design

The foregoing proposal is hereby accepted this 27 day of Sept, 2023, and AUTOMATIC FIRE PROTECTION, INC. is hereby authorized to proceed as outlined above.

By

Bradley County Judge

Title

4582 Old Christoval Rd. San Angelo, TX 76904 Phone: 325-651-9000

San Angelo • Dallas • San Antonio

SCR-G-0005 • ECR-1909605 • ACR-2168589

Visit us at www.automaticfireprotection.com



AUTOMATIC FIRE PROTECTION INC.

Specializing in Sales, Inspections, Service, Testing and Design for Commercial and Residential Facilities

- Fire Sprinkler Systems • Fire Alarms Systems • Fire Extinguishers • Kitchen Suppression Systems • Backflow Testing •
- 24hr Monitoring •

Acceptance of System

Date: 9/21/23

Job Name: ERATH COUNTY ANNEX

Job Number: 220028

- ☒ Alarm & detection system is in service.
- ☒ Suppression system is in service.
- ☐ Suppression system has been disabled.

If suppression system has been disabled Automatic Fire Protection must be contacted in order to place the system back into service.

Notes:

X Michael Osborne
Technician

X Jennifer Cary
Contractor/Owner's Rep

X MICHAEL OSBORNE
Technician Printed Name

X JENNIFER CARY
Contractor/ Owner's Rep Printed Name

4582 Old Christoval Rd. San Angelo, Texas 76904 Phone: 325-651-9000 Fax: 325-651-9003

San Angelo • Dallas • San Antonio

SCR-G-0005 • ECR-1909605 • ACR-2168589 • B07335501

Visit us at www.automaticfireprotection.com



ERATH COUNTY

EMPLOYEE HANDBOOK

ERATH COUNTY
EMPLOYEE HANDBOOK

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EMPLOYEE HANDBOOK ACKNOWLEDGEMENT

I have received a copy of the Erath County Employee Handbook that outlines my benefits and obligations as a County employee. I understand that I am responsible for reading and familiarizing myself with the information in this handbook and understand that it contains general personnel policies of the County. If I need clarification on any of the information in this handbook, I will contact my immediate supervisor.

I further understand that the Erath County Employee Handbook is not a contract of employment. I understand that I am an at-will employee and that either the County or I may terminate my employment at any time, with or without cause, and with or without notice.

I understand that this employee handbook is intended to provide guidance in understanding of Erath County's policies, practices and benefits. I understand that Erath County retains the right to change this handbook at any time, and to modify or cancel any of its employee benefits when the need for change is recognized.

I understand as a County employee, I shall have no expectation of privacy when using county computers, networks, or other county owned equipment. Improper use may result in discipline up to and including termination.

I further understand that as an Erath County employee, I am expected to provide quality service to the public; to work towards the highest degree of safety possible for my fellow workers, to continually make suggestions for improvements, and to display a spirit of teamwork and cooperation.

I understand that I may be subject to reasonable suspicion or post-accident drug and alcohol testing. If I am required to have a Commercial Driver's License (CDL) for my county position, I will be subject to random, reasonable suspicion, post-accident and follow-up drug and alcohol testing.

I have read these policies and understand these policies and I agree to abide by and adhere to these policies.

Printed Name of Employee

Signature of Employee

Date Signed

**COUNTY OF ERATH COUNTY
COMMISSIONERS COURT ORDER**

WHEREAS the Erath County Commissioners Court desires to provide the employees of Erath County with a uniform format for dealing with various employment related issues; and

WHEREAS the Erath County Commissioners Court wish to adequately communicate to employees the policies and procedures of the County:

THEREFORE, BE IT RESOLVED that the Erath County Commissioners Court hereby approves, and adopts the ERATH COUNTY EMPLOYEE HANDBOOK.

ADOPTED THIS 27th DAY OF September, 2023



County Judge



Commissioner Pct. 1



Commissioner Pct. 2



Commissioner Pct. 3



Commissioner Pct. 4

Witnessed and Attested By:



County Clerk

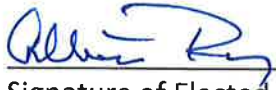


RESOLUTION FOR ERATH COUNTY

I the undersigned have read the Erath County Employee Handbook that the Erath County Commissioners Court has adopted. As an ELECTED OFFICIAL of Erath County, I endorse and approve the Employee Handbook. I approve the document as it reflects my commitment to Erath County employees and it reflects my commitment to conform to appropriate state and federal laws.

I agree to be bound by the terms and conditions of the Erath County Employee Handbook, as witnessed by my signature below.

ALBERT RAY
Printed Name of Elected Official


Signature of Elected Official

Pct. 2
Office of Elected Official

9.29.23
Date Signed

RESOLUTION FOR ERATH COUNTY

I the undersigned have read the Erath County Employee Handbook that the Erath County Commissioners Court has adopted. As an ELECTED OFFICIAL of Erath County, I endorse and approve the Employee Handbook. I approve the document as it reflects my commitment to Erath County employees and it reflects my commitment to conform to appropriate state and federal laws.

I agree to be bound by the terms and conditions of the Erath County Employee Handbook, as witnessed by my signature below.

Joe Brown

Printed Name of Elected Official

Joe Brown

Signature of Elected Official

Pct 3. Commissioner

Office of Elected Official

9-29-2023

Date Signed

RESOLUTION FOR ERATH COUNTY

I the undersigned have read the Erath County Employee Handbook that the Erath County Commissioners Court has adopted. As an ELECTED OFFICIAL of Erath County, I endorse and approve the Employee Handbook. I approve the document as it reflects my commitment to Erath County employees and it reflects my commitment to conform to appropriate state and federal laws.

I agree to be bound by the terms and conditions of the Erath County Employee Handbook, as witnessed by my signature below.

Brandon J. Huckabee
Printed Name of Elected Official


Signature of Elected Official

County Judge
Office of Elected Official

9-29-2023
Date Signed

RESOLUTION FOR ERATH COUNTY

I the undersigned have read the Erath County Employee Handbook that the Erath County Commissioners Court has adopted. As an ELECTED OFFICIAL of Erath County, I endorse and approve the Employee Handbook. I approve the document as it reflects my commitment to Erath County employees and it reflects my commitment to conform to appropriate state and federal laws.

I agree to be bound by the terms and conditions of the Erath County Employee Handbook, as witnessed by my signature below.

Jim Buck
Printed Name of Elected Official

[Signature]
Signature of Elected Official

PCT 4
Office of Elected Official
9-29-23
Date Signed

RESOLUTION FOR ERATH COUNTY

I the undersigned have read the Erath County Employee Handbook that the Erath County Commissioners Court has adopted. As an ELECTED OFFICIAL of Erath County, I endorse and approve the Employee Handbook. I approve the document as it reflects my commitment to Erath County employees and it reflects my commitment to conform to appropriate state and federal laws.

I agree to be bound by the terms and conditions of the Erath County Employee Handbook, as witnessed by my signature below.

Dee Stephens

Printed Name of Elected Official

Dee Stephens

Signature of Elected Official

Commissioner Pct 1

Office of Elected Official

9-29-23

Date Signed

Erath County Employee Handbook

Welcome to Erath County!

We are excited to have you as an employee of Erath County. You were hired because the elected official, appointed official or department head believes you can contribute to the success of Erath County, and share our commitment to serving the public and our constituents with excellence.

Erath County is committed to providing excellent service to the public in all of our county offices. As part of the team, we hope you will discover that the pursuit of excellence is a rewarding aspect of your career here.

This employee handbook contains some key policies, benefits, and expectations of Erath County, and other information you will need. Each elected or appointed official may have detailed policy and procedures for their office.

Your job is essential to fulfilling our mission of serving our county constituents every day and to meet or exceed their expectations. We achieve this through dedicated hard work and commitment from every Erath County employee. You should use this handbook as a ready reference as you pursue your career with Erath County. Please consult with your elected official, appointed official or department head regarding questions you may have concerning this employee handbook.

Welcome aboard!

Sincerely,



County Judge



Commissioner Pct. 1



Commissioner Pct. 2



Commissioner Pct. 3



Commissioner Pct. 4

SECTION 1: GENERAL POLICIES

A. COUNTY EMPLOYMENT

1A-1 EMPLOYMENT AT-WILL

All employment with Erath County shall be considered “at will” employment. No contract of employment shall exist between any individual and Erath County for any duration, either specified or unspecified. No provision of this employee handbook shall be construed as modifying your employment at will status.

Erath County shall have the right to terminate the employment of any employee for any legal reason, or no reason, at any time either with or without notice.

Erath County shall also have the right to change any condition, benefit, policy, or privilege of employment at any time, with or without notice. Employees of Erath County shall have the right to leave their employment with the County at any time, with or without notice.

1A-2 EMPLOYEE STATUS POLICY

REGULAR FULL TIME: A full time employee shall be any employee in a position which has a normal work schedule of at least thirty (30) hours per week. Full time employees are eligible for county benefits for which they are qualified. Employees may be non-exempt, hourly employees or exempt employees. Non-exempt employees are eligible for overtime compensation. Exempt employees are not eligible for overtime compensation. Erath County makes exempt status determination based on the Fair Labor Standards Act.

REGULAR PART TIME: A part time employee shall be any employee in a position which has a normal work schedule of less than twenty-nine (29) hours per week. All regular part time employees must be placed on TCDRS retirement regardless of the number of hours worked per week. Regular part time employees are not entitled to most county benefits.

TEMPORARY: A temporary employee shall be any employee who is hired into a position that is expected to last for a specific duration or until a specific project is completed. Temporary employees may have work schedules as assigned by their manager. Temporary employees are not entitled to any county benefits.

All employees are considered to be “at will” employees and employee status shall not be considered a contract of employment.

Each county position has an employee status that identifies how the position is paid and how benefits are granted by Commissioners Court. The status of a position cannot be changed without the approval of the Commissioners Court. This policy defines both health insurance and retirement benefits. Full time employees will be eligible for health insurance, vision, and dental.

All other classifications must be included in the county initial and/or standard measurement periods for the Affordable Care Act.

Temporary Seasonal: A seasonal employee shall be any employee who is hired into a position that lasts six (6) or less months and begins at approximately the same time each year. Examples may include, but are not limited to, lifeguards, summer mowers, and election workers. Seasonal employees can be either part time or full time, and they may qualify for health insurance through the county under the Affordable Care Act depending on the number of hours worked per week and the length of employment. Temporary seasonal employees are not eligible for retirement benefits under TCDRS. Other county policies will dictate eligibility for other benefits.

Regular Variable Hour: A variable hour employee shall be any employee for whom the county cannot determine the average number of hours that the employee will work each week – hours are variable or indeterminate at the time of the employee's start date. If the employee works an average of thirty (30) or more hours a week in the measurement period, the employee will be eligible for health insurance through the county under the Affordable Care Act. If an employee's schedule becomes regular, then the employee shall be reclassified as full or part time depending on the hours worked. Regular variable hour employees are eligible for retirement benefits under TCDRS. Other county policies will dictate eligibility for other benefits.

Temporary Part Time: A temporary short-term part-time employee shall be any employee who is expected to work less than thirty (30) hours each week in a position that is expected to last for a specific period of time or until a specific project is completed, but no longer than 12 months. If this project goes beyond 12 months, the employee will move into a regular part time status. Temporary short-term part-time employees are not entitled to any benefits under the Affordable Care Act and are also not eligible for retirement benefits under TCDRS. Other county policies will dictate eligibility for other benefits.

Temporary Full Time: A temporary short-term full-time employee shall be any employee who is expected to work for thirty (30) or more hours each week in a position that is expected to last for a specific period of time or until a specific program is completed, but no longer than 12 months. If this project goes beyond 12 months, the employee will move into a regular full-time status. Temporary short-term full-time employees are not eligible for retirement benefits under TCDRS. Temporary full-time employees will be eligible under the Affordable Care Act for county health benefits. Other county policies will dictate eligibility for other benefits.

Temporary Regular Variable Hour: A temporary variable hour employee shall be any employee for whom the county cannot determine the average amount of hours that the employee will work each week – hours are variable or indeterminate at the time of the employee's start date. This position will be expected to last for a specific period of time or until a specific program is completed, but no longer than 12 months. If this project goes beyond 12 months, the employee will move into either a Regular Full-Time position or a Regular Part Time position. If the employee works an average of thirty (30) or more hours a week in the measurement period, the employee will be eligible for health insurance through the county under the Affordable Care

Act. If an employee's schedule becomes regular, then the employee shall be reclassified as temporary full time or temporary part time depending on the hours worked. Temporary variable hour employees are not eligible for retirement benefits under TCDRS. Other county policies will dictate eligibility for other benefits.

1A-3 EQUAL EMPLOYMENT OPPORTUNITY

Erath County is an equal opportunity employer. The county will not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, including lesbian, gay, bi-sexual or transgender status, age, genetic information, pregnancy, veteran status, disability, or any other condition or status protected by law in hiring, promotion, demotion, raises, termination, training, discipline, use of employee facilities or programs, or any other benefit, condition, or privilege of employment except where required by state or federal law or where a bona fide occupational qualification exists. If an employee needs an accommodation as a result of a condition or status protected by law, please advise your elected official, appointed official, department head or the county attorney

1A-4 AMERICANS WITH DISABILITIES ACT AMENDMENTS ACT

It is the policy of Erath County to prohibit any harassment of, or discriminatory treatment of employees on the basis of a disability or because an employee has requested a reasonable accommodation. If an employee feels they have been subject to such treatment, or has witnessed such treatment, the situation should be reported to your elected official, County Attorney, department head or the county attorney. All elected officials, County Attorney, department heads and employees with responsibilities requiring knowledge are instructed to treat the employee's disability with confidentiality.

The County allows only service animals to be on County property. A service animal is defined as an animal that is trained to perform tasks for an individual with a disability. Erath County can ask for the service animal to be removed when: 1) the animal is out of control and the handler doesn't take immediate action to control the animal, or 2) when the animal is not housebroken.

It is Erath County's policy to reasonably accommodate qualified individuals with disabilities unless the accommodation would impose an undue hardship on the county. In accordance with the Americans with Disabilities Act, as amended (ADAAA), reasonable accommodations may be provided to qualified individuals with disabilities when such accommodations are necessary to enable them to perform the essential functions of their jobs, or to enjoy the equal benefits and privileges of employment. This policy applies to all applicants for employment, and all employees. If you require accommodation, please contact your elected official, County Attorney, department head or the county attorney. Reasonable accommodation shall be determined through an interactive process of consultation.

1A-5 PERSONNEL FILES

The Erath County Human Resources department will retain basic employee information in an individual personnel file, and the Sheriff's Office will retain personnel files that are made readily available to the Texas Commission on Law Enforcement for auditing purposes. A personnel file will include all pertinent employment documents such as resume, application, W-4, job description, garnishment orders and records, as well as, records concerning performance, discipline and compensation.

It is important that the personnel records of Erath County be accurate at all times. In order to avoid issues, compromising your benefit eligibility or having W2's returned, Erath County requests employees to promptly notify the appropriate personnel representative or request through Employee Self Service (ESS) portal to make change in name, home address, telephone number, marital status, number of dependents, or of any other pertinent information.

The Public Information Act allows county employees to keep their home addresses, home telephone numbers, social security numbers, emergency contact information, and information that reveals whether the employee has family members confidential. Employees may keep this information private by requesting in writing not to allow this information to be released to the public no later than 14 days after their first day of employment.

1A-6 NEPOTISM

Pursuant to Texas Government Code Chapter 573, a Public Official of Erath County is prohibited from hiring a relative related within the third degree of consanguinity (blood) or within the second degree of affinity (marriage) to work in a department that they supervise or exercise control over.

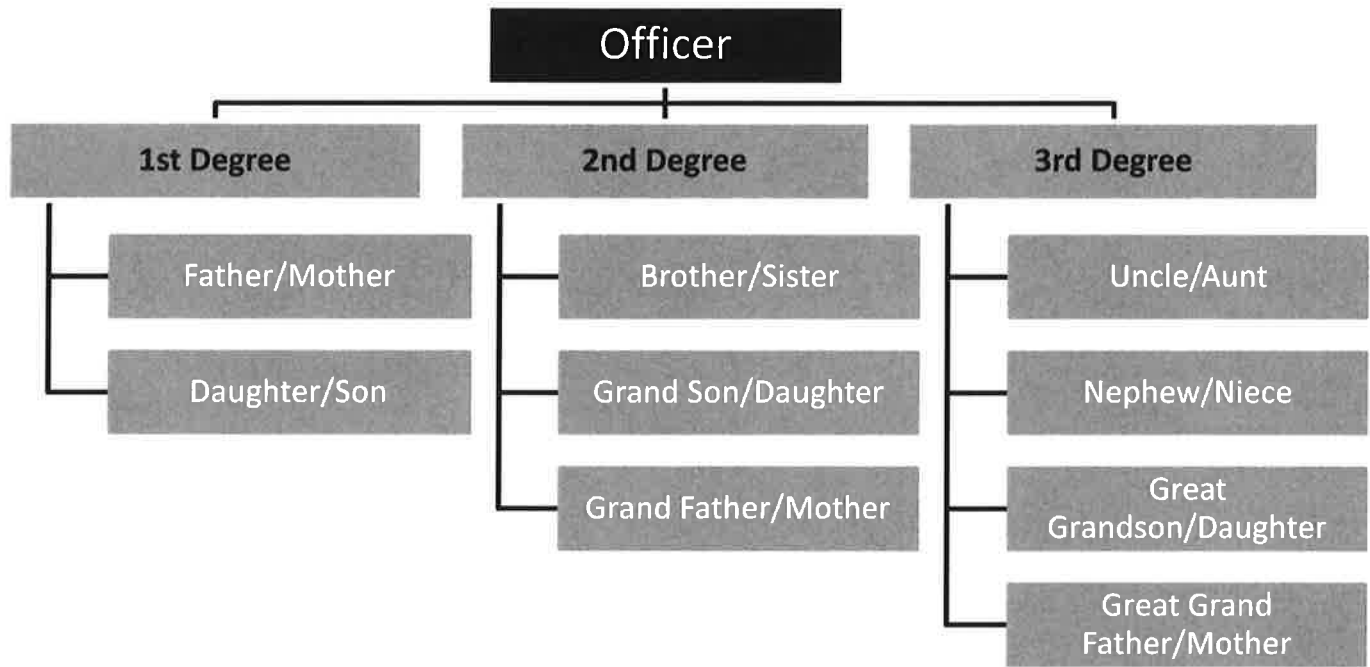
A relative of an elected or appointed official of Erath County shall not be hired on a contract basis unless the following criteria are met and the Commissioners Court gives approval.

- a) All reasonable efforts were made to get contract bids from other qualified individuals.
- b) The cost/quality ratio of the work expected from the individual is most favorable of all bidders; and
- c) The relationship created by the contract is not detrimental to the interest of the county.

A degree of relationship is determined under Texas Government Code Chapter 573. (See the charts that follow.)

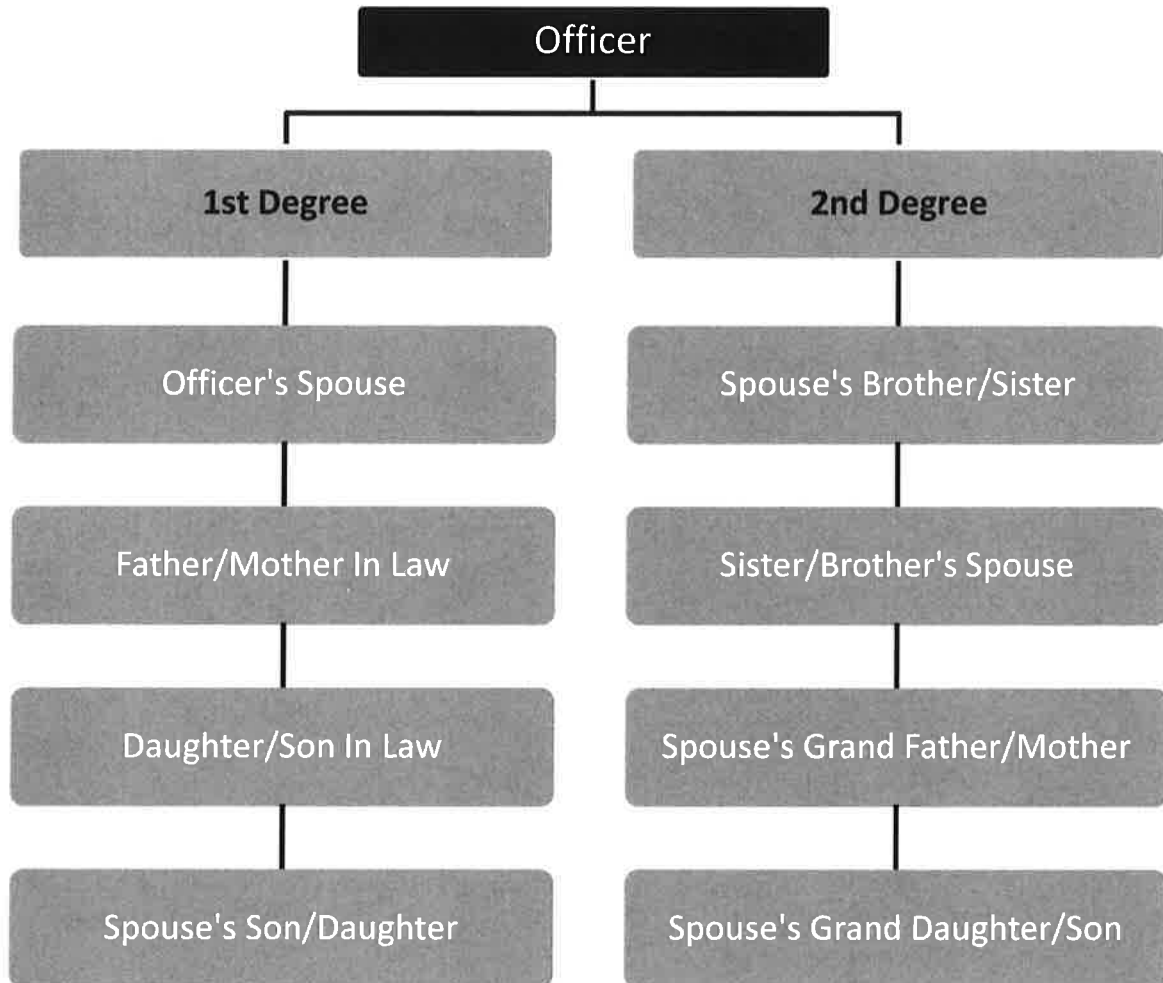
CONSANGUINITY KINSHIP CHART

(Relationship by Blood)



AFFINITY KINSHIP CHART

(Relationship by Marriage)



B. WORK RULES AND EMPLOYEE RESPONSIBILITY

1B-1 ATTENDANCE

As an Erath County employee, you are expected to be punctual and demonstrate consistent attendance.

Each employee shall report to work on each day they are scheduled to work and at the starting time set by their supervisor unless prior approval for absence is given by the supervisor or the employee is unable to report for work because of circumstances beyond the control of the employee. If an employee is unable to be at work at their normal reporting time, they shall be responsible for notifying their supervisor at least 1 hour prior to the scheduled start of their shift or as soon as it is reasonably practicable in the case of an emergency.

Calls to non-designated personnel (not the direct supervisor), text messages, or messages left on voicemail will not be considered appropriate notification unless prior approval from a supervisor is given.

Each supervisor must provide their employees with their personal cell phone or home phone number as a point of contact for their employees.

Each employee shall remain on the job until the normal quitting time established by the supervisor unless permission to leave early is given by the supervisor.

Each supervisor is responsible for determining if an unscheduled absence or tardiness is to be classified as excused or unexcused, based on the circumstances causing the absence or tardiness. Frequent unexcused absences or tardiness, as determined by your immediate supervisor, may make an employee subject to disciplinary measures, up to and including termination of employment.

An employee who does not report for work for three (3) consecutive scheduled work days, and who fails to notify their supervisor, shall be considered to have resigned their position by abandonment.

1B-2 DRESS CODE/BEHAVIOR CODE

Erath County expects all employees to be well groomed, clean, and neat at all times. Each Elected Official or department head will determine the type of attire that is acceptable.

However, jeans with holes, shirts with inappropriate messages or clothing that when worn appears tight or is considered revealing will not be allowed.

Erath County employees are permitted to have tattoos while employed at Erath County. Tattoos that are exposed must be in a professional tasteful manner. Any tattoos that are considered unprofessional or untasteful by a supervisor must remain covered while at work.

Erath County employees are permitted to have piercings while employed at Erath County. The piercings that are exposed must be limited to maintain a professional appearance while at work. It will be left to the employee's supervisor to determine what is excessive or unprofessional piercings.

Erath County employees' hairstyles must remain neat and clean while at work. Erath County employees will not be discriminated for their natural hairstyles under the Texas state law CROWN Act 2023.

Employees are required to act in a professional manner at all times and extend the highest courtesy to co-workers and to the public being served. A cheerful and positive attitude is essential to our commitment to customer service.

1B-3 TOBACCO/SMOKE FREE WORKPLACE

Erath County endeavors to provide a healthy environment. Therefore, any form of tobacco or vaping consumed in county buildings and county vehicles is strictly prohibited. Additionally, no smoking is allowed within ten (10) feet of the exterior entranceways.

Additionally, no tobacco is allowed on or in any property owned by Erath County. This includes but is not limited to motor vehicles or construction and/or road repair equipment or tractors.

This policy also applies to all visitors to Erath County property and/or employees. Visitors should be informed of this policy when necessary.

1B-4 CONFLICT OF INTEREST

Employees of Erath County shall not engage in any employment, relationship, or activity which could be viewed as a conflict of interest because of the potential or appearance of affecting the employee's job efficiency, or which would reduce their ability to make objective decisions in regard to their work and responsibility as an Erath County employee.

Employees involved in conflict of interest situations shall be subject to discipline, up to and including termination and these actions may have criminal consequences for employees.

Employees shall not engage in private business activities during their working hours and shall not use County Property, equipment or facilities for such activities unless otherwise allowed by this policy (exception would be sheriff's office employees who are employed in a law

enforcement capacity off duty in Erath County where they may be called upon to take law enforcement action.)

Employees of Erath County shall have the right to support candidates of their choice and to engage in political activity during their personal time.

County employees shall not:

- 1) Use their official authority or influence to interfere with or affect the result of any election or nomination for office.
- 2) Directly or indirectly coerce, attempt to coerce, command or advise another person to pay, lend or contribute anything of value to a party, committee, organization, agency or person for political reason
- 3) Use any equipment, property or material owned by Erath County for political activity or engage in political activity while on duty for the County.

Employees will be allowed to cast a vote on election day while on duty by providing enough notification to supervisor.

Erath County will not enter into any contract to purchase any item from an elected county official. The county will not “do business” with any business owned by an elected county official, a partnership of which an elected county official is a partner, or any entity of which an elected county official is a shareholder, officer, or director. With Commissioner Court approval, Erath County could conduct business with the business of a current employee.

Activities which constitute a conflict of interest shall include but not be limited to:

- 1) Soliciting, accepting, or agreeing to accept a financial benefit, gift, or favor, other than from the County, that might reasonably tend to influence the employee’s performance of duties for the County or that the employee knows or should know is offered with the intent to influence the employee’s performance;
- 2) Accepting employment, compensation, gifts, or favors that might reasonably tend to induce the employee to disclose confidential information acquired in the performance of official duties;
- 3) Accepting outside employment, compensation, gifts, or favors that might reasonably tend to impair independence of judgment in performance of duties for the County;
- 4) Making any personal investment that might reasonably be expected to create a substantial conflict between the employee’s private interest and their duties for the County; or
- 5) Soliciting, accepting, or agreeing to accept a financial benefit from another person in exchange for having performed duties as a County employee in favor of that person.

1B-5 HARASSMENT

Erath County is committed to a workplace free of harassment. Harassment includes unlawful, unwelcome words, acts or displays based on sex, sexual orientation or gender identity, including lesbian, gay, bi-sexual or transgender status, race, color, religion, national origin, age, genetic information, pregnancy, disability, family or military leave status or veteran's status. Such conduct becomes harassment when (1) the submission to the conduct is made a condition of employment; (2) the submission to, or rejection of, the conduct is used as the basis for an employment decision; or (3) the conduct creates an offensive, intimidating or hostile working environment or interferes with work performance.

Harassment is strictly prohibited by Erath County whether committed by an elected official, appointed official, department head, co-worker or non-employee with whom the county does business.

Employees who feel they have been harassed should immediately report the situation to the elected official, appointed official or department head who is responsible for the department in which they work. If, for any reason, the employee feels that reporting the harassment to the official or department head may not be the best course of action, the report should be made to the County Judge, the County Attorney, or the Human Resource Manager.

Every reported complaint will be investigated promptly and thoroughly. While all claims of harassment shall be handled with discretion, there can be no complete assurance of full confidentiality. The official or department head to which a claim has been reported shall be responsible for seeing that prompt action is taken to investigate the claim.

Once the investigation is complete, the employee making the claim shall be notified of the result of the investigation and any actions which are to be taken.

Retaliation against an employee who reports harassment or who cooperates in the investigation is prohibited by law as well as this policy. Employees who feel they have been subjected to illegal retaliation should immediately report the situation to the elected official, appointed official, or department head who is responsible for the department in which they work. If, for any reason, the employee feels that reporting the retaliation to the official or department head may not be the best course of action, the report should be made to the County Judge or to the County Attorney.

Remedial action will be taken in accordance with the circumstances when the county determines unlawful harassment or retaliation has occurred, up to and including termination.

It is the policy of Erath County to treat all employees with respect and dignity and not to discriminate against any employee on the basis of any protected class. Erath County prohibits any form of harassment. Harassment is prohibited by federal and state laws. This policy

prohibits harassment of any kind; and will take appropriate action swiftly to address any violations of this policy.

Harassment can include, but is not limited to, the following actions:

Inappropriate Communication – Involves any language that is unnecessarily loud or degrades or berates, including, but not limited to, racial, religious, or sexual comments or jokes, sexual innuendoes, inappropriate personal questions, or threats of any kind, whether communicated verbally, in writing, or electronically. Also involves offensive or inappropriate written materials including, but not limited to, pictures, letters, email messages, graffiti, etc.

Physical Contact – Includes, but is not limited to, inappropriate touching, hitting, kicking, or threatening another person, including restraining by force or blocking the path of another.

Interference of Hostile Environment - Includes any behavior or action which interferes with an employee's ability to perform job duties and responsibilities, or which results in or creates a hostile or intimidating work environment.

1B-6 SEXUAL HARASSMENT

Sexual harassment is strictly prohibited by Erath County, whether committed by an elected official, an appointed official, a department head, a co-worker or a non-employee the county does business with. It is the policy of Erath County to provide a work place free from sexual harassment for all employees and to take active steps to eliminate any sexual harassment of which the County becomes aware.

Employees engaging in sexual harassment shall be subject to discipline, up to and including termination of employment. Sexual harassment shall include, but not be limited to, unwanted sexual advances, requests for sexual favors, and other verbal, non-verbal or physical conduct of a sexual nature, which includes slurs, jokes, statements, gestures, touching, pictures, emails or cartoons where: (1) the submission to such conduct is either an expressed or implied condition of employment; or (2) the submission to or rejection of such conduct is used as a basis for an employment decision affecting the harassed person; or (3) the conduct has the purpose or effect of substantially interfering with an affected person's work performance or creating an intimidating, hostile, or offensive work environment.

All claims of sexual harassment will be taken seriously and investigated promptly and thoroughly. While all claims of sexual harassment shall be handled with discretion, there can be no complete assurance of full confidentiality.

Employees who feel they have been sexually harassed should immediately report the situation to the elected official, appointed official or department head who is responsible for the department in which they work. If, for any reason, the employee feels that reporting the

harassment to the official or department head may not be the best course of action, the report should be made to the County Judge or to the County Attorney.

Every reported complaint will be investigated promptly and thoroughly. The official or department head to which a claim has been reported shall be responsible for seeing that prompt action is taken to investigate the claim.

Once the investigation is complete, the employee making the claim shall be notified of the result of the investigation and any actions which are to be taken.

Use the following procedures so that your complaint may be resolved quickly and fairly.

- a) When practical, confront the harasser and ask them to stop the unwanted behavior.
- b) Record the time, place and specifics of each incident, including any witnesses.
- c) Report continuing sexual harassment to the Elected Official, Appointed Official, or Department Head who is responsible for your department or to the County Judge or the County Attorney.
- d) If a thorough investigation reveals that unlawful sexual harassment has occurred, Erath County will take effective remedial action in accordance with the circumstances, up to and including termination.

Retaliation against an employee who reports sexual harassment or who cooperates as a witness in the investigation is prohibited by law as well as this policy.

Employees who feel they have been subjected to illegal retaliation should immediately report the situation to the elected official, appointed official or department head who is responsible for the department in which they work. If, for any reason, the employee feels that reporting the retaliation to the official or department head may not be the best course of action, the report should be made to the County Judge or to the County Attorney.

Reporting or failing to report claims in accordance with the procedure given in this policy shall not limit other legal recourse an employee may have in regard to sexual harassment charges.

1B-7 POLITICAL ACTIVITY

Employees of Erath County shall have the right to support candidates of their choice and to engage in political activity during their personal time.

County employees shall not: 1) Use their official authority or influence to interfere with or affect the result of any election or nomination for office; 2) Directly or indirectly coerce, attempt to coerce, command, or advise another person to pay, lend, or contribute anything of value to a party, committee, organization, agency, or person for a political reason; or 3) Use any equipment, property or material owned by the County for political activity or engage in political activity while on duty for the County. 4) If an employee chooses to run for the office against the

incumbent or which he or she is employed, the employee must resign from their job at the time of their filing. 5) Employees may not be contacted during working hours by a candidate for endorsements or signatures for any petitions in lieu of filing fees.

1B-8 OUTSIDE EMPLOYMENT

Erath County employees are expected to give their full and undivided attention to their job duties. They should not use Erath County facilities or equipment or their association with Erath County to carry on a private business or profession. Unless express approval is obtained in advance and in writing from their immediate supervisor, county employees should not engage in a profit-making business nor become involved with a non-profit organization outside of their employment with Erath County that interferes with the employee's assigned duties with Erath County.

1B-9 BREAKS

The Patient Protection and Affordable Care Act amended the Fair Labor Standards Act to require reasonable breaks for nursing mothers to express breast milk. The Texas Right to Express Breast Milk in the Workplace Act also imposes duties on public employers and, under other state law, is applicable for the duration of a nursing mother's need to express breast milk. Erath County supports the practice of expressing breast milk.

Erath County will provide reasonable paid breaks for a nursing mother to express breast milk. The nursing mother will be allowed whatever time is needed to express breast milk.

The County will provide the nursing mother with a private location, other than a bathroom, and the location will be shielded from view and free from intrusion and appropriate for expressing breast milk. The specific location will be determined on a case by case basis.

Erath County does not allow any retaliation against a nursing mother for asking for this break. Nursing mothers are entitled to this break for the duration of the time they are expressing breast milk. A reasonable accommodation will be given for the needs of employees who express breast milk. An employee of the county who needs to express breast milk may not be discriminated against.

All other employee breaks are NOT required under the Fair Labor Standards Act. Department Heads/Elected Officials MAY allow employees up to (2) paid fifteen-minute breaks taken separately during each work day. These breaks will be scheduled by the Department Head/Elected Official and NO office should be left unattended during break time. If your department provides you with a break, it may not be accumulated or used for time off. The Fair Labor Standards Act does not require any breaks other than for a nursing mother; however, if paid breaks are provided for employees, a nursing mother must be given the same amount of paid break time.

LUNCH

Employees will be allowed one hour for lunch, unless otherwise directed by the Department Head, Elected Official and Supervisor. Some individual departments remain open during this one-hour period in order to better serve the public. In these instances, Department Heads/Elected Officials may choose to alternate times or schedules for lunch breaks for employees if it is deemed that their particular office should remain open during the regularly scheduled period.

1B-10 GRIEVANCES

Any employee having a grievance related to their job should discuss the grievance with their immediate supervisor.

If the discussion with the immediate supervisor does not resolve the grievance, and, if the immediate supervisor is not the elected or appointed official with final responsibility for the employee's department, the employee shall have the right to discuss the grievance with that official.

The decision of the elected or appointed official with final responsibility for the employee's department shall be final in all grievances.

1B-11 DISCIPLINE

Each supervisor shall have the authority to administer discipline to employees in their department for poor performance, violation of policies, disruptive behavior, or any other behavior or activity which the supervisor feels is not acceptable as it relates to the employee's job or the best interest of the department or County.

Depending on the severity of the situation, discipline may range from informal counseling up to and including immediate termination.

Examples of reasons for administering discipline shall include, but not be limited to:

- 1) Insubordination;
- 2) Absence without approval, including failure to notify a supervisor of sick leave;
- 3) Repeated tardiness or early departure;
- 4) Endangering the safety of others through negligent or willful acts;
- 5) Intoxication or drug abuse while on duty;
- 6) Unauthorized use of public funds or property;
- 7) Violation of the requirements of these personnel policies;
- 8) Conviction of a felony;
- 9) Falsification of documents or records;

- 10) Unauthorized use of official information and unauthorized disclosure of confidential information;
- 11) Conviction of official misconduct;
- 12) Unauthorized or abusive use of official authority;
- 13) Incompetence or neglect of duty; and
- 14) Engaging in outside employment with conflicts or interference with the performance of duties for the county.

Progressive discipline will be administered.

All reprimands and disciplinary actions should be documented in writing and signed by the employee and elected official or department head. A copy of that documentation will be sent to the Human Resources department to be included in the employee's personnel file for retention.

All County employees are "at will" employees and nothing in this policy gives an employee any contract of employment, guarantee of any duration of employment, or any other property interest in their job.

Erath County retains the right to terminate the employment of any individual at any time for any legal reason, or no reason, with or without notice. The County also retains the right to change any condition, benefit, privilege, or policy of employment at any time, with or without notice.

1B-12 LICENSE AND CERTIFICATIONS

Erath County has many positions that require licenses and certifications, and it is the responsibility of each employee to maintain all required licenses and certifications. If an employee is unable to obtain, renew or keep a license or certification, they must immediately notify their supervisor. If this license is a requirement for the position, the employee may be demoted, transferred or terminated. Under no circumstances will the employee be allowed to continue in the position where a license or certification is required if failure to have such license or certification is illegal under either Federal or State Law.

1B-13 WEATHER CLOSINGS AND EMERGENCIES

As a general practice, Erath County does not close its operations unless the health, safety, and security of county employees are seriously brought into question. When this happens, either because of severe weather conditions or other emergencies, the County Judge is responsible for initiating the closing

The County Judge will notify the appropriate entities for a public announcement. Announcements of an emergency closing will, to the extent possible, specify the starting and

ending times of the closing; however, each elected official controls the working hours of their employees, even in an emergency situation.

Many county departments are continuously operating public safety and service departments. Many county personnel will be required to work during emergency closings. Each elected official or department head is responsible for designating their own employees and providing alternate information to personnel designated as essential during emergency closings. Public safety will be foremost in the development of departmental emergency action plans.

1B-14 CONFIDENTIALITY

Erath County is a public entity; however, some county employees acquire confidential (non-public) information as a result of their position with the county. This information must be protected. Employees who reveal confidential (non-public) information they have received as a result of their positions may be subject to discipline up to and including termination.

Regarding the personnel information on employees of Erath County: much of the information in an employee's personnel file, including salary and job evaluations, is subject to disclosure under the Public Information Act; however, highly personal matters are typically not subject to disclosure. The county will adhere to the Public Information Act's requirements.

1B-15 WHISTLEBLOWER

An employee may, in good faith, report an alleged violation of an Erath County Policy or federal or state law to their supervisor, department head/elected official, or human resources, unless all of these persons are the alleged perpetrators of the alleged violation of policy or law. If all of the listed persons are alleged to be involved in the violation, the employee may report the allegation to County Judge, County Attorney, District Attorney or Sheriff. The county will investigate the reported activity.

An official, supervisor, department director, or any other employee is prohibited from taking adverse employment action against an employee who, in good faith, reports an alleged violation of County policy or federal or state law to a designated person, pursuant to this policy.

An employee who intentionally makes a false report of wrongdoing may be subject to discipline up to and including termination.

An employee who, in good faith, believes they are being subjected to retaliation based on a report of alleged wrongdoing under this policy should immediately contact Human Resources, County Attorney, District Attorney, and/or County Judge.

An employee with a question regarding this policy should contact Human Resources or the County Attorney.

C. COUNTY PROPERTY AND EMPLOYEE RESPONSIBILITY

1C-1 COUNTY PROPERTY USAGE

Each county employee shall be responsible for the care, maintenance, proper use, and upkeep of any County equipment assigned to them. County employees shall only use equipment, tools, and any other County property that they are authorized to use. Personal use of county equipment, supplies, tools, and any other county property is not permitted and may result in discipline up to and including termination. Improper use may subject employees to criminal prosecution.

1C-2 COUNTY VEHICLE USAGE

Some employees may be required to use county vehicles as a part of their job. Employees who are assigned county vehicles shall be responsible for the care, maintenance, proper use and upkeep of these vehicles. Employees may only use the vehicles they are authorized to use. Employees may not allow other individuals to operate the vehicles they have been assigned.

If personal use of a county vehicle is permitted the employee will be required to keep a log of all personal miles driven, including to and from work. These personal miles will be subject to payroll taxes at the current IRS rate in accordance with IRS rules and regulations.

Employees who operate vehicles must maintain a current active license for the operation of that vehicle. If they have any change in status of their license they must immediately notify their supervisor. An employee whose job involves operation of a vehicle requiring a license for its legal operation shall be subject to possible job change, demotion or termination if that license is suspended or revoked.

Any employee involved in an accident while operating County equipment or vehicles shall immediately report the accident to their supervisor and to the proper law enforcement or other authority immediately, and will be required to take a post-accident drug test within 4 hours. A copy of all accident and incident reports prepared by the employee shall be sent to the supervisor, County Auditor, County Attorney, County Judge, and Human Resource Department.

1C-3 CELL PHONE USAGE

Erath County determines on a case by case basis the need for county provided cell phones. County cell phones are to be used for business purposes only.

Erath County strongly discourages the use of any cell phone while operating any vehicle. Employees should plan calls to allow placement of calls either prior to traveling or while on rest breaks.

Erath County bans all employees from texting while operating any county owned vehicle. County employees who are driving their own personal vehicle are also banned from texting while driving on county business. Federal law prohibits any CDL driver operating any vehicle over 10,000 GWR from texting with fines and penalties, up to and including loss of CDL.

Employees in possession of Erath County-owned cellular phones are required to take appropriate precautions to prevent theft and vandalism.

Each department may set their own rules and regulations regarding personal cell phone usage while at work.

Employees who have county cell phone must give their supervisors or the County Judge the passcode upon request.

There is no expectation of privacy in a county cell phone. Any inappropriate use of the county cell phone may result in disciplinary action up to and including termination of employment.

1C-4 COMPUTER AND INTERNET USAGE

The use of Erath County information systems, including computers, fax machines, smart phones, tablet computers and all forms of Internet/Intranet access, is for Erath County business and for authorized purposes only. Brief and occasional personal use of the electronic mail system or the Internet is acceptable as long as it is not excessive or inappropriate, occurs during personal time (lunch or other breaks), and does not result in any expense to the County. Use is defined as "excessive" if it interferes with normal job functions, responsiveness, or the ability to perform daily job activities. Electronic communication should not be used to solicit or sell products or services that are unrelated to the County's business; distract, intimidate, or harass coworkers or third parties; or disrupt the workplace.

Use of Erath County computers, networks, and Internet access is a privilege granted by officials or department heads and may be revoked at any time for inappropriate conduct carried out on such systems. County employees shall have no expectation of privacy when using county computers, networks, or other county-owned equipment. Improper use may result in discipline up to an including termination.

Erath County owns the rights to all data and files in any computer, network, or other information system used in the county. Erath County also reserves the right to monitor electronic mail messages including personal/private/instant messaging systems, Facebook, Twitter, etc. and their content, as well as any and all use of the Internet and of computer equipment used to create, view, or access e-mail and Internet content. Employees must be aware that the electronic mail messages sent and received using county equipment are not private and are subject to viewing, downloading, inspection, release, and archiving by county officials at all times. Erath County has the right to inspect any and all files stored in private areas of the network or on individual computers or storage media in order to assure compliance with

policy and state and federal laws. No employee may access another employee's computer, computer files, or electronic mail messages without prior authorization from either the employee or an appropriate county official. No employee shall break any copyright laws or download any illegal or unauthorized downloads. Erath County monitors all of its informational systems and employees may be subject to discipline, up to and including termination, for any misuse of county informational systems.

Employees should not bring personal computers to the workplace or connect them to Erath County electronic systems, unless expressly permitted to do so by their supervisor and/or IT department. Violation of this policy may result in disciplinary action, up to and including termination of employment.

D. SAFETY AND HEALTH EMPLOYEE RESPONSIBILITY

1D-1 WORKERS COMPENSATION

All Erath County employees are covered by workers' compensation coverage while on duty for the County. Workers' compensation coverage pays for medical bills resulting from a covered injury or illness an employee incurs while carrying out the duties of their job. Workers' compensation also pays Temporary Income Benefits (TIBS) for time lost from work in excess of seven calendar days as the result of eligible work-related injuries or illnesses, with the exception of Law Enforcement employees who receive salary continuation.

Employees may use paid leave for all workers' compensation time off less than 8 days.

All employees who are placed on worker's compensation leave will fall under the Family Medical Leave Act. Erath County runs FMLA and worker's compensation leave concurrently.

Any employee who suffers a job-related illness or injury is required to notify their supervisor as soon as possible. Failure to promptly report job-related injuries or illnesses may affect an employee's eligibility for benefits or delay benefit payments.

An employee who has lost time because of a work-related accident or illness is required to provide a release from the attending physician before being allowed to return to work.

An employee's workers' compensation benefits may be adversely affected if the employee is injured while under the influence of alcohol or drugs or while the employee is engaging in horseplay.

Erath County will make every effort to bring the injured employee back to work as soon as reasonably possible. Erath County has a return-to-work policy in place and if a position is found that will meet all the restrictions, the employee will be given a bona fide offer of employment.

If the employee refuses to return to work, and family medical leave has been exhausted, workers' compensation benefits may be affected, and the employee may be terminated.

1D-2 RETURN TO WORK

This policy covers employees who are on leave due to a work-related injury or illness. Because employees are our most valuable resource, Erath County attempts to help employees return to work as soon as possible.

An employee on leave due to a work-related injury or illness may return to work only when Erath County receives a medical release from the treating doctor. It is a violation of County policy for any employee receiving workers' compensation benefits of any kind to be employed with a third party on a full-time or part-time basis. Violation of this policy may result in termination.

Return to work options:

- Return to prior position at full duty with doctor release stating that the injured employee can perform the job functions without restrictions.
- Light Duty: For any employee who is not able to return to their prior position and perform the regular duties of that job but can return with certain restrictions, Erath County will try to accommodate light duty when possible, but **cannot guarantee** the availability of light duty.

Employees on light duty are not guaranteed the rate of pay they received for the position they held at the time of injury or illness. The pay rate for light duty is based on the knowledge, skills, and abilities required for that job, as well as general market conditions. Employees in a light duty position are not permitted to supplement their workers' compensation benefits by using their vacation, holiday, compensatory or sick leave.

Four (4) week limit - Light duty assignments are **temporary** arrangements intended to complement and facilitate the healing process. Light duty may be initially offered for a period of four (4) weeks, and then will be reviewed and evaluated by the supervisor based, in part, on the recommendation of the physician (unless FMLA time is still available).

Employee refusal of work - In the event an employee refuses to return to regular or light duty work in response to a written, bona fide offer of employment by Erath County, the employee may be separated from employment with Erath County, subject to FMLA qualification, and the employee's position may be filled permanently. A written, bona fide offer of employment must clearly state:

- The position offered and the duties of the position;
- Erath County's agreement to meet the conditions set out by the treating doctor; and
- The job's wage, working hours and location.

Medical Information

All employees' medical information is held in strict confidence in accordance with the Americans with Disabilities Act Amendments Act (ADAAA). Medical inquiries are limited to those permitted under Texas Workers' Compensation Statute and applicable federal law.

Coordination with FMLA

Nothing in this policy should be construed as denying employees their rights under the Family Medical Leave Act (FMLA) or any other federal or state law. It is Erath County's policy to designate an employee's leave due to a work-related injury or illness as FMLA, if eligible. Erath County counts the period of any employee's light duty assignment toward the employee's FMLA entitlement.

Until employees have exhausted their twelve (12) week FMLA entitlement, they have the right to be reinstated to their original job or an equivalent job provided they are able to perform the essential functions of the job.

1D-3 EMPLOYEE SAFETY

Erath County is committed to providing a safe workplace for our employees.

Each County employees must adhere to the general safety standards established for all employees as well as comply with their departmental safety requirements. Safety procedures may differ at each county department. Your supervisor will provide you with specific information pertaining to your position.

Failure to follow the safety standards set by the County or an employee's supervisor subjects an employee to disciplinary action, up to and including termination.

Employees seeing unsafe working conditions shall either take steps to correct those conditions or report the unsafe conditions to their supervisor.

1D-4 DRUG AND ALCOHOL- ALL EMPLOYEES

Erath County is a drug- and alcohol-free workplace. A county employee may not be present at work during a period the employee's ability to perform their duties is impaired by drugs or alcohol. The County believes that a drug- and alcohol-free workplace will help ensure a healthy, safe, and secure work environment.

This policy applies to all employees of Erath County regardless of rank or position and shall include full-time, part-time and temporary employees. The only exception to this policy is the possession of controlled substances by law enforcement personnel as part of their law enforcement duties.

An employee may not unlawfully manufacture, distribute, dispense, possess, sell, purchase, or use a controlled substance or drug paraphernalia on County property or while conducting County business not on County property.

An employee may not be under the influence of alcohol or illegal drugs while on County property, operating County equipment, or while on duty for the County.

An employee may use prescription and over-the-counter drugs in standard dosage or according to a physician's prescription if the use will not impair the employee's ability to do their job safely and effectively. An employee must keep prescription medications used at work in their original container.

An employee taking prescribed or over-the-counter medications is responsible for consulting the prescribing physician or a pharmacist to determine if the medication could interfere with the safe and effective performance of their job duties.

If the use of a medication could compromise an employee's ability to do their job or the safety of the employee, fellow employees or the public, the employee must report the condition to their supervisor at the start of the workday or use appropriate personnel procedures (e.g., call in sick, use leave, request change of duty).

A supervisor must treat any information related to an employee's authorized use of prescription medications and any other medical information provided by the employee as confidential information.

An employee having problems with drugs or alcohol is encouraged to seek treatment from a qualified professional. Information on benefits provided for treatment of alcohol and drug abuse problems provided by the County's health plan program is available in the employee's health plan booklet or from the Human Resources office.

Any employee who violates this policy shall be subject to disciplinary measures up to and including termination.

An employee who voluntarily asks for time off to get treatment and recover from a drug or alcohol abuse problem will be given protections as required by law. Upon returning to work from a bona fide inpatient treatment facility, the employee will be subjected to a volunteer drug testing program as often as monthly until there is evidence the employee no longer uses. Failure to comply with the requirements of the post-rehabilitative program, including refusing the volunteer testing program, may result in termination. The post-rehabilitative program will last for as long as two years. If at any time the employee tests positive, or refuses the volunteer drug test during this post-rehabilitative program, the employee may be terminated.

Erath County will drug test employees who ARE NOT CDL license holders under the following conditions:

Pre-employment drug testing:

Erath County has a pre-employment drug testing requirement that must be fulfilled post offer before an employee starts their first day of work. All offers of employment are conditional upon passing a drug and alcohol test. The employee will sign a consent waiver.

Suspicion-Based Testing:

“Under the Influence” shall be defined as having a blood alcohol concentration of 0.01 or more.

Reasonable Suspicion – If an employee is having work performance problems or displaying behavior that may be alcohol- or drug-related, or is otherwise demonstrating conduct that may be in violation of this drug and alcohol policy where immediate action is necessary, the elected official, supervisor or department head will require that employee to submit to alcohol or drug testing. The following conditions might be signs of possible alcohol or drug use (not an all-inclusive list):

- Abnormally dilated or constricted pupils
- Glazed stare – redness of eyes (sclera)
- Flushed face
- Change of speech (faster, slower, slurred)
- Constant sniffing
- Increased absences
- Redness under nose
- Sudden weight loss
- Needle Marks
- Change in personality (i.e. paranoia)
- Increased appetite for sweets
- Forgetfulness, performance faltering, poor concentration
- Borrowing money from co-workers or seeking an advance of pay or other unusual display of need for money
- Constant fatigue or hyperactivity
- Smell of alcohol
- Difficulty walking
- Excessive, unexplained absences
- Dulled mental processes
- Slow reaction rate

Elected Officials, supervisors or department heads must take action if they have reason to believe one or more of the above listed conditions is indicated and that substance abuse is affecting their employee’s job performance or behavior. The following steps will be taken:

1. Confront the employee involved and keep them under direct observation until the situation is resolved. Inform the employee of the problem with their job performance and specific violations of County policy.
2. If the supervisor believes, after observing or talking to the employee, that the conduct or performance problem could be due to substance abuse, the employee will be immediately required to submit to a drug or alcohol test. If the employee refuses to submit to testing for any reason, the employee may be terminated.
3. Employees will be asked to release any evidence, such as alcohol or drug paraphernalia, relating to the observation for further testing. Failure to comply may subject the employee to subsequent discipline, up to and including termination. All confiscated evidence will be receipted with signatures of either the elected official or supervisor and the employee.
4. The elected official, supervisor or department head will **remove** the employee from the county work station and ensure that the employee is transported to an appropriate collection site and thereafter to the employee's residence. Under no circumstances will the employee be allowed to drive a vehicle until a confirmed negative test result is received.
5. The elected official, supervisor or department head shall, within 24 hours or before the results of the controlled substance test are released, document the particular facts related to the behavior or performance problems and present such documentation to the Human Resources office for filing.

Post-Accident Testing:

All employees directly involved in an on-the-job accident or incident resulting in property damage and/or medical treatment may be required to be tested.

Testing Procedures –

1. The employee immediately notifies supervisor of accident/incident.
2. The supervisor will immediately contact County Auditor, County Attorney, and Human Resources Office to report accident/incident.
3. The employee will be escorted and/or driven to the designated facility for specimen collection and/or testing within four hours of the incident if possible.
4. The employee will be required to follow the drug testing protocol of the medical facility providing the testing.
5. If the employee desires another test to be given, they may do so within two hours of the specimen being collected and the same specimen will be used. The cost of this request will be paid for by the employee. All initial costs will be paid for by Erath County.
6. The employee will be placed on paid administrative leave until the results of the test are known. The elected official, supervisor or department head will make arrangements to ensure that the employee is safely returned to their residence.
7. Under no circumstances, unless required or authorized by law, will alcohol or drug testing information be released without written consent from the employee.

Each employee is expected to cooperate and consent to a drug and/or alcohol test when requested under the terms of this policy. Refusal to consent to a drug and/or alcohol test when requested is cause for termination.

Any employee who violates this drug and alcohol policy may be terminated.

1D-5 DRUG AND ALCOHOL- CDL EMPLOYEES

CDL Drivers are an extremely valuable resource for Erath County's business. Their health and safety is a serious County concern. Drug or alcohol use may pose a serious threat to driver health and safety. It is, therefore, the policy of the County to prohibit CDL employees from being under the influence of or using illegal drugs or alcohol during working hours.

The Federal Highway Administration ("FHWA") has issued regulations, which require the County to implement a controlled substance testing program. The County will comply with these. All CDL drivers are advised that remaining drug-free and medically qualified to drive are conditions of continued employment with the County.

Specifically, it is the policy of Erath County that the use, sale, purchase, transfer, possession or presence in one's system of any controlled substance (except medically prescribed drugs) or alcohol by any CDL driver while on County premises, engaged in County business, operating County equipment, or under the authority of the County is strictly prohibited. Mandatory testing must apply to every person who operates a commercial motor vehicle in interstate or intrastate commerce and is subject to the CDL licensing requirement. Erath County will conduct pre-employment, random, reasonable suspicion and post-accident drug testing in accordance with federal law.

It is the policy of Erath County to comply with the U.S. Department of Transportation, FMCSA Clearinghouse, a secure online database that provides employers with real-time information about CDL driver drug and alcohol program violations. Erath County will conduct electronic queries as required by FMCSA's drug and alcohol use testing program, for checking CDL driver violation histories. Drivers may view their own records. Employees will be required to provide a consent form from the CDL holder to conduct both limited and specific inquiries.

A detailed policy and procedure is available at the Human Resources office.

1D-6 WORKPLACE VIOLENCE

Erath County is committed to providing a workplace free of violence. Erath County will not tolerate or condone violence of any kind in the workplace. The county will also not tolerate or condone any threats of violence, direct or indirect, including jokes. All threats will be taken seriously and will be investigated. Employees must refrain from any conduct or comments that might make another employee suspicious or in fear for their safety. Employees are required to

report all suspicious conduct or comments to their immediate supervisor. Employees should be aware of their surroundings at all times and report any suspicious behavior from the public, former employees or current employees to their immediate supervisor or the sheriff's department. No employee, other than an authorized law enforcement official, may possess a firearm or other weapon, with or without permits, in any county office or building owned or used by Erath County, or in a county-owned vehicle. If an employee believes that a person is violating this policy, they should immediately report to their immediate supervisor or the sheriff's department. Employees found in violation of this policy may be subject to discipline up to and including immediate termination.

1D-7 SOCIAL MEDIA

For purposes of this policy "social media" includes, but is not limited to, online forums, blogs and social networking sites, such as TikTok, Twitter (X), Facebook, LinkedIn, YouTube, and Instagram. Erath County recognizes the importance of social media for its employees; however, use of social media by employees may become a problem if: it interferes with the employee's work and/or position in the county; is used to harass supervisors, co-workers, customers or vendors; creates a hostile work environment; or harms the goodwill and reputation of Erath County among the community at large. Erath County encourages employees to use social media within the parameters of the following guidelines and in a way that does not produce the adverse consequences mentioned above.

Where no policy or guideline exists, employees are expected to use their best judgment and take the most prudent action possible. If you are uncertain about the appropriateness of a social media posting, check with your elected official, supervisor or department head.

- If your posts on social media mention Erath County, make clear that you are an employee of Erath County and that the views posted are yours alone and do not represent the views of Erath County.
- Do not mention Erath County supervisors, employees, customers or vendors without their express consent.
- Do not pick fights. If you see a misrepresentation about Erath County, respond respectfully with factual information, not inflammatory comments.
- Remember, you are responsible for what you write or present on social media. You can be sued by other employees, supervisors, customers or vendors, and anyone who views your social media posts as defamatory, pornographic, proprietary, harassing, libelous or creating a hostile work environment. Employees can be subject to disciplinary action, up to and including termination, for what they post on social media platforms, even if the employee did not use a county computer or if the post did not occur during work hours or on county property.
- Employees may not use Erath County computer equipment for non-work-related activities without written permission. Social media activities should not interfere with your duties at work. Erath County monitors its computers to ensure compliance with this restriction.
- You must comply with copyright laws, and cite or reference sources accurately.

- Do not link to Erath County's website or post Erath County material on a social media site without written permission from your supervisor.
- All Erath County policies that regulate off-duty conduct apply to social media activity, including, but not limited to, policies related to illegal harassment and code of conduct.
- Any confidential information that you obtained through your position at Erath County must be kept confidential and should not be discussed in a social media forum.
- Violation of this policy may lead to discipline up to and including the immediate termination of employment.

SOCIAL MEDIA APPLICATIONS AND SERVICES PROHIBITED ON COUNTY DEVICES

Erath County prohibits the installation or use of the social media service TikTok or any successor application or service developed or provided by ByteDance Limited or an entity owned by ByteDance Limited, or a social media application or service specified by proclamation of the governor, on any device owned or leased by Erath County, and requires the immediate removal of covered applications from these devices.

The installation and use of a covered application may be acceptable to the extent necessary for providing law enforcement or developing or implementing information security measures. In order for the installation to be approved, Erath County must require the use of measures to mitigate risks posed to this state during the use of the covered application and the documentation of those measures.

SECTION 2: EMPLOYEE COMPENSATION AND BENEFITS

A. EMPLOYEE PAYROLL

2A-1 FAIR LABOR STANDARDS ACT SAFE HARBOR

Erath County makes every effort to pay its employees correctly. Occasionally, however, inadvertent mistakes can happen. When mistakes do happen and are called to the attention of Human Resources, Erath County will make any corrections necessary at the next payroll. Please review your pay stub when you receive it to make sure it is correct. If you believe a mistake has occurred or if you have any questions, please use the reporting procedure outlined below. If you are overpaid, the county will make the necessary corrections at the next payroll.

Employees who are classified as non-exempt employees must maintain an accurate record of the total hours they work each day. It is the responsibility of each employee to verify that their time sheets are correct. Your time card must accurately reflect all regular and overtime hours worked and any absences, late arrivals, early departures, and meal breaks. Do not submit your time card if it is not accurate. When you receive each pay check, please verify immediately that you were paid correctly for all regular and overtime hours worked each work week.

Non-exempt employees, unless authorized by their supervisor, should not work any hours that are not authorized. Do not start work early, finish work late, work during a meal break, or perform any other extra or overtime work unless you are authorized to do so. That time worked is to be recorded on your time card. Employees are prohibited from performing any "off-the-clock" work. "Off-the-clock" work means work you may perform but fail to report on your time card. Any employee who fails to report or inaccurately reports any hours worked will be subject to disciplinary action, up to and including termination. If anyone directs you to work without documenting your time worked, you must notify the Human Resources office.

It is a violation of Erath County policy for any employee to falsify a time card. No employee may alter another employee's time card without the employee's permission. It is also a serious violation of County policy for any employee, supervisor or official to instruct another employee to incorrectly or falsely report hours worked, or to alter another employee's time card to under- or over-report hours worked. If anyone instructs you to (1) incorrectly or falsely under- or over-report your hours worked, or (2) alter another employee's time records to inaccurately or falsely report that employee's hours worked, you should report it immediately to the Human Resources office located at the Courthouse at 100 W. Washington Street, or call 254-459-5053.

If you are classified as an exempt salaried employee, you will receive a salary which is intended to compensate you for all hours worked for the County. This salary will be established at the time of hire or when you become classified as an exempt employee. While it may be subject to review and modification from time to time, the salary will be a pre-determined amount that will not be subject to deductions for variations in the quantity or quality of the work you perform. An exempt employee's salary will be reduced for certain types of deductions, such as the employee's portion of health, dental or life insurance premiums; state, federal or local taxes;

social security and retirement; and voluntary contributions to a deferred compensation plan. In any work week in which you performed any work, your wages may be reduced for any of the following reasons: 1) absence from work for one or more full days for personal reasons, other than sickness or disability; 2) full day disciplinary suspensions for infractions of the County's written policies and procedures; 3) full day suspensions for violating safety rules of major significance; 4) Family and Medical Leave or Military Leave absences; 5) to offset amounts received as payment for jury and witness fees or military pay; or 6) the first or last week of employment in the event you work less than a full week.

If you are an exempt employee, in any work week in which you performed any work, your salary will not be reduced for any of the following reasons: 1) partial day absences for personal reasons, sickness or disability; 2) your absence because the facility is closed on a scheduled work day; 3) your absence because of the County's operating requirements; 4) absences for jury duty, attendance as a witness, or military leave in any week in which you have performed any work; or 5) any other deductions prohibited by state or federal law.

Please note: it is not an improper deduction to reduce an employee's accrued vacation, personal or other forms of paid time off for full or partial day absences for personal reasons, sickness or disability.

If you have questions about deductions from your pay, please immediately contact your supervisor. If you believe you have been subject to any improper deductions or your pay does not accurately reflect your hours worked, you should immediately report the matter to the Human Resources office located in the Courthouse at 100 W. Washington Street, or call 254-459-5053. If you are unsure of whom to contact or if you have not received a satisfactory response within five business days after reporting the incident, please immediately contact the County Judge's Office at (254) 965-1452. Every report will be fully investigated and corrective action will be taken where appropriate, up to and including discharge for any employee who violates this policy. In addition, the County will not allow any form of retaliation against individuals who report alleged violations of this policy or who cooperate in the County's investigation of such reports. Retaliation is unacceptable, and any form of retaliation in violation of this policy may result in disciplinary action, up to and including termination.

2A-2 INTERNAL REVENUE SERVICE (IRS) FRINGE BENEFITS

Erath County will comply with the IRS regarding fringe benefits such as county uniforms, county vehicle usage and day-trip meals. Employees may be responsible for paying payroll taxes on such fringe benefits.

2A-3 COMPENSATION

Erath County Commissioners Court annually sets the maximum compensation for each employee in accordance with Texas State Law.

Erath County complies with the Fair Labor Standards Acts as outlined in the Fair Labor Standards Safe Harbor policy.

Law Enforcement personnel are treated in accordance with the 207(k) exemption under the Fair Labor Standards Act. The Commissioners Court has adopted this exemption.

Temporary employees shall be paid hourly at least the minimum wage established by the Fair Labor Standards Act, as amended.

In the event of a major disaster where the County Judge has issued a disaster declaration and it has been extended by the Commissioners Court, in order for the County to be reimbursed by FEMA, all salaried employees will be calculated in the same manner as hourly employees for the duration of the disaster incident until the disaster declaration is rescinded or allowed to expire.

2A-4 PAYROLL DEDUCTIONS

Deductions shall be made from each employee's paycheck for federal withholding, social security, Medicare, and any other deductions required by law.

Employees eligible for membership in the Texas County and District Retirement System (TCDRS) shall have their contributions to that system deducted from each paycheck. Any optional deductions authorized by the Commissioners Court and approved by the employee shall also be made from the employee's paycheck.

No optional deductions shall be made from an employee's paycheck unless the employee turns in written authorization for the deduction to the Human Resources office.

2A-5 WORK WEEKS AND WORK PERIODS

For purposes of record keeping and to determine overtime in compliance with the Fair Labor Standards Act (FLSA), the work week for Erath County shall begin at 7:00 a.m. on each Sunday and end seven (7) consecutive days later (168 hours). Law Enforcement employees who fall under the FLSA 207(k) exemption shall have a work period of 14 days and 86 hours as established by the Erath County Commissioners Court.

2A-6 TIMESHEETS

Each employee must clock in/out on their electronic timesheet to record their hours worked, and to be submitted electronically to their supervisor on the last day of each pay period. Failure to complete a timesheet may result in an employee only receiving minimum wage payment until the proper time sheet has been completed and turned into the payroll department. All corrections will be made on the next regularly scheduled payroll. As of October 1, 2023, employees' clock-in/out punches will be recorded at the exact time with no rounding. The

timesheet prepared by the employee shall show an accurate record of all time worked and leave taken, whether paid or unpaid, for the pay period. Time sheets are governmental documents, and as such require accurate and truthful information. Falsifying a time sheet, a governmental record, is a criminal offense. Employees shall use only appropriate available leave to account for their regular weekly work schedule.

2A-7 PAY PERIODS

The pay period for Erath County shall be a 14-day pay period pay period, which makes 26 pay periods per year, with the period dates established by the Commissioners Court. If a payday falls on a holiday or a weekend, paychecks shall be issued on the last workday immediately preceding the holiday or weekend.

The Texas Payday Law does not apply to political subdivisions of Texas (Counties), therefore final wages will be issued on the regularly scheduled payday.

2A-8 WORK SCHEDULES

The normal hours of work for most positions in the County shall be from 8:00 a.m. until 5:00 p.m., Monday through Friday. Each official or department head shall determine the exact working schedules for their employees. In order to meet the needs of the County, certain departments or employees may be required to work a schedule that varies from the normal work schedule, or they may be subject to call in case of emergency or special need.

2A-9 HOURS WORKED

Hours worked shall include all time actually spent in the service of the County as defined in the Fair Labor Standards Act (FLSA) and its regulations. For the purposes of the FLSA, the workday for the County shall begin at 7 a.m. each day and end 24 consecutive hours later.

2A-10 LAW ENFORCEMENT PAY AND OVERTIME

Erath County Commissioners Court has adopted the 207(k) exemption under the Fair Labor Standards Act for law enforcement employees, which includes deputies and jailers. These employees have a work period of 14 days, and overtime will be due after 86 hours actually worked. Law enforcement employees' salary covers all hours up to 86 hours. Paid leave shall not be counted in determining if overtime has been worked in any workweek. Except in emergency situations, an employee shall be required to have authorization from their supervisor before working overtime.

2A-11 OVERTIME CALCULATIONS AND RULE

An employee shall be required to have authorization from their supervisor before working overtime except in emergency situations.

Overtime shall include all time actually worked for the county in excess of 40 hours in any workweek, with the exception of law enforcement (See policy on “Law Enforcement Pay and Overtime.”).

2A-12 DEMOTIONS

Demotions are the movement of an employee from one position to another with a decreased responsibility or complexity of job duties or to a lower salary. Elected officials, appointed officials or department heads may choose to demote or re-assign any employees who are unable to meet performance requirements, for disciplinary reasons, or for any other reason as deemed necessary by the official. Upon demotion, an employee’s salary may be adjusted downward. Employees will retain sick, vacation and holiday balances.

2A-13 TRANSFERS

Transfers are the lateral movement of an employee from one position to another with the same responsibility or complexity of job duties with no change in salary.

An elected official, appointed official or department head may transfer an employee in their department to a vacant position. All transfers must be handled in accordance with the budget adopted by the Commissioners Court. Employees may be eligible to transfer from one county department to another county department at the approval of the new elected official or department head. They will fall under the pay and benefits of the new position.

2A-14 PROMOTIONS

Promotions are the movement of an employee from one position to another with an increased responsibility or complexity of job duties, and to a higher salary.

An elected official, appointed official or department head may promote an employee in their department to a vacant position. All promotions must be handled in accordance with the budget adopted by the Commissioners Court.

2A-15 SEPARATIONS

A separation shall be defined as any situation in which the employer-employee relationship between the County and a County employee ends. All separations from Erath County shall be designated as one of the following types:

1) resignation; 2) retirement; 3) dismissal; 4) reduction in force; or 5) death.

A resignation shall be classified as any situation in which an employee voluntarily leaves their employment with Erath County and the separation does not fall into one of the other

categories. An employee who is resigning should submit a written notice of resignation to their supervisor.

A retirement shall be any situation in which an employee meets the requirements to collect benefits under the County's retirement program and voluntarily elects to leave employment with the County to do so. An employee with 20 continuous years of service to Erath County, who retires in good standing, will retain insurance benefits paid by Erath County for the life of the employee (see 2B-12 Retirement, for insurance information). An employee who is retiring should notify their supervisor of that intent at least 30 days prior to the actual retirement date to help prevent delays in starting the payment of retirement benefits.

A dismissal shall be any involuntary separation of employment that does not fall into one of the other categories of separation. Erath County is an "at will" employer and a supervisor may dismiss an employee at any time for any legal reason or no reason, with or without notice.

An employee shall be separated from employment because of a reduction in force when their position is abolished or when there is a lack of funds to support the position or there is a lack of work to justify the position.

A separation by death shall occur when an employee dies while currently employed by the County. If an employee dies while still employed by the County, their legally designated beneficiary or estate shall receive all earned pay and payable benefits.

2A-16 TERMINATIONS

An employee's last day of work (physically present on the job) shall be considered the termination date unless the employee has been out on FMLA leave, in which case the last day of work will be the last day of FMLA leave. Employees will be required to return all county property including but not limited to uniforms, keys, electronic time cards prior to final payment.

At the time the employee resigns, is discharged, or is terminated for any other reason, the employee shall receive pay for a maximum of 80 unused vacation hours.

2A-17 RETIREE REHIRES

Retired employees shall be eligible to apply for open positions with Erath County as long as the following provisions are met: 1) The retiree has been retired for at least two calendar months, 2) no prior arrangement or agreement was made between Erath County and the retiree for re-employment, and 3) strict adherence to normal separation procedures were followed at the time of the employee's retirement.

The retiree must have a bona fide separation of employment and have been retired for a minimum of two full calendar months. A bona fide separation means there is no prior agreement or understanding between Erath County and the retiree that the retiree would be rehired after retirement. According to Rule 107.4 adopted by the TCDRS Board of Trustees, restrictions apply to elected officials, people employed for the same or different position in the same or different department, employee status changes, and independent contractors.

Newly elected officials who have recently retired from the county cannot draw their retirement, because they have an arrangement to return to work for the county. Employees also cannot retire with an agreement to go work in a different department or different position. Changing employee status does not matter when determining if someone is still working for the county. Also, an employee cannot retire from the county with an arrangement to begin work as an independent contractor.

Rehired retirees who did not have a bona fide separation of employment may owe a 10 percent excise tax and be required to repay all of their monthly retirement payments. Abusing the retirement provisions in such a manner would violate a qualification requirement for retirement plans under Section 401(a) of the Internal Revenue Code, potentially resulting in significant tax consequences for the employer, its participating members and those retired employees.

Any retiree who meets all other TCDRS requirements, who is rehired consistent with this policy, must establish a new membership with TCDRS and will be considered to be a new member for the purposes of beneficiary determination and benefit selections.

B. EMPLOYEE BENEFITS

2B-1 HEALTH, VISION AND DENTAL PLANS

All full-time regular employees of Erath County shall be eligible for the group medical, vision, and dental plan benefits.

Premiums for the coverage for eligible employees shall be paid entirely by the County. Newly hired employees will have a 30-day waiting period to be eligible for medical, vision, and dental insurance benefits.

Eligible employees may cover their qualified dependents by paying the full premium for the dependents. Deductions for dependent coverage shall be made through payroll deduction from the employee's paycheck each pay period; however, insurance will not be deducted on the third payroll of the month which occurs twice a year.

Details of coverage under the group medical, vision, and dental insurance plans are available in the County Human Resource office and may be obtained during normal working hours.

Employees who leave the employment of Erath County or who lose their coverage eligibility may be eligible for an extension of the medical and dental plan for themselves and their eligible dependents under the Consolidated Omnibus Budget Reconciliation Act (COBRA). If an employee is unable to return to work following FMLA leave, they will be offered COBRA if eligible.

Information on extension of benefits under COBRA is available in the County Human Resource office and may be obtained during normal working hours. COBRA notifications will be provided to all employees within 30 days of their hire date. All eligible employees and qualified dependents will be provided with COBRA information following their termination.

2B1a – SHORT TERM DISABILITY: Erath County will provide short term disability coverage for all full-time employees with health insurance coverage. The coverage will replace up to 60% of the eligible income due to a sickness or injury following a waiting period which can be up to 7 days for a 13-week period. To apply for this benefit, a physician's statement is required. This is provided at no cost to the employee.

2B1b – CAREFLITE INSURANCE: Erath county will provide CareFlite insurance to all full-time employees and their household family members at no cost to the employees at date of hire and ending on December 31, 2023.

2B1c – MASA INSURANCE: Erath County will provide MASA, emergency transportation, insurance to all full-time employees and their household family members at no cost to the employees starting January 1, 2024.

2B-2 THE HEALTH INSURANCE PORTABILITY & ACCOUNTABILITY ACT (HIPPA)

HIPPA was established to provide a basic level of protection of all employees' health information. Any health-related information, medical claims and billing information will be kept confidential.

2B-3 OTHER PLANS – LIFE, SUPPLEMENTAL

Erath County may provide a limited amount of life insurance on eligible employees as part of the group medical plan coverage. Erath County provides supplemental insurance coverage under TCDRS. All supplemental insurance coverage premiums are the responsibility of the employee. Information regarding these supplemental insurances may be obtained from the Human Resources Department.

2B-4 VACATION

All full-time regular employees shall be eligible for vacation benefits, and are eligible to receive paid vacation leave, but part-time and temporary employees shall not be eligible for vacation benefits.

Employees who work any part of a pay period will receive the full bi-weekly accrual.

Only the appropriate number of vacation hours will be used to account for the minimum number of hours needed for the designated work week/work period. (i.e. 40 or 85/171)

In calculating hours for an employee, vacation hours will be based off of the employee's anniversary date of hire, and each regular full-time employee will receive vacation leave according to the following schedule:

Years Worked	Accrue Rate	Hours per Year	Days per Year at 8 hours
1-5	3.08	80	10
5-15	4.62	120	15
15+	6.15	160	20

Scheduling of vacations shall be at the discretion of an employee's elected official or department head, and each employee shall be responsible for accurately recording all vacation time used on the electronic timekeeping system.

Employees shall only be able to use vacation which has already been accrued and shall not be allowed to borrow vacation against possible future accruals. Employees shall not be allowed to receive pay for vacation in lieu of taking time off.

If a holiday falls during an employee's vacation, the employee will not be charged for the vacation.

The maximum unused vacation an employee will be allowed to have accrued at any time is 240 hours. Vacation pay at termination is addressed in the "Pay at Termination" section.

Employees rehired within 365 days after employment terminated shall have their vacation accrual rate reinstated.

2B-5 SICK

All full-time regular employees shall be eligible for the paid sick leave benefit, and eligible employees shall accrue sick leave at a rate of 3.69 hours biweekly which is equivalent to 96 hours per year. Accrual of sick leave shall start at the time an individual begins work for the County in a position eligible for the sick leave benefit.

The maximum amount of unused sick leave an employee shall be allowed to have accrued at any time is 480 hours. Employees will not accrue sick time while out on leave.

Sick leave may be used for the following purposes: 1) illness or injury of the employee; 2) appointments with physicians, optometrists, dentists, and other qualified medical professionals; or 3) to attend to the illness or injury of a member of the employee's immediate family. For purposes of this policy, "immediate family" shall be defined as spouse, child, parent, brother, sister, grandparents, grandchildren or other relative living in the employee's home who is dependent on the employee for care.

Where sick leave is to be used for medical appointments, an employee shall be required to notify their supervisor of the intent to use sick leave as soon as the employee knows of the appointment or at least one day in advance. Where use of sick leave is not known in advance, an employee shall notify their

supervisor of the intent to use sick leave as soon as reasonably possible. If the employee feels that the situation will cause them to miss more than one day of work, the employee should notify their supervisor of the anticipated length of absence. The employee will be placed on FMLA, if a qualifying event occurs and the employee is eligible.

If an employee uses three (3) or more consecutive days of sick leave, a physician's statement or some other acceptable documentation of injury or illness is required for either the employee's own illness or the illness of an immediate family member, to be turned in to the Human Resource Department.

A supervisor or Human Resources Officer may require employees who have a pattern of abusing sick leave to provide a physician's statement for those absences that are less than three days. Personal statements can be required as to why you are absent.

Employees shall not be allowed to borrow sick leave against future accruals. Employees may be allowed up to 4 hours sick leave to attend a funeral of a relative who is not a member of the immediate family or of a friend.

Sick leave **MAY NOT** be used as vacation or for any other reason not addressed in this policy.

Only the appropriate number of sick hours will be used to account for the minimum number of hours needed for the designated work week/work period. (i.e. 40 or 85/171)

2B-6 SICK LEAVE POOL

The County has established a policy to provide a sick leave pool, which will enable eligible county employees to voluntarily transfer sick leave time earned to a county sick leave pool and to permit employees to draw time in the event of a catastrophic injury or illness.

Examples of a catastrophic injury or illness include, but are not limited to:

1. Stroke
2. Heart attack
3. Major surgery requiring hospitalization
4. Cancer
5. Pregnancy complications
6. To care for a spouse or children who is terminally ill

The County Human Resource office is the administrator of the County sick leave pool.

To contribute time to the County sick leave pool, an employee must submit an application to the Human Resource office. Sick leave donations will be considered a taxable event to the donor unless the situation qualifies as a medical emergency pursuant to IRS guidelines. On approval, in a calendar year an employee may transfer to the pool not less than 8 hours and up to 80 hours accrued sick leave per year. The time will be credited to the pool with the amount of time contributed by the employee and will deduct the same amount of time from the amount to which the employee is entitled, as if the employee

has used the time for personal purpose. An employee who resigns or retires may donate any amount over 8 hours in their accrued sick leave bank.

Employees are eligible to use time contributed to the County sick leave pool for a catastrophic injury or illness, if they have completed one year of continuous service, have exhausted all of their earned sick leave, vacation leave, holiday leave, and short-term disability leave.

Eligible employees must apply to the Human Resource office for authorization to use the time in the County sick leave pool. If the Human Resource office determines that the employee is eligible, the Human Resource office will approve the transfer of time from the pool to the employee. **An eligible employee must submit an application with a physician's statement verifying the catastrophic injury or illness.** The time will be credited to the employee and used in the same manner as sick leave earned during the course of employment.

An employee may not use time in the County sick leave pool in an amount that exceeds the lesser of one-third of the total amount of time in the pool or 480 hours. The sick pool committee may approve additional withdrawals by an employee not to exceed three withdrawals in a calendar year.

An employee absent on sick leave assigned from the County sick leave pool is treated for all purposes as if the employee were absent on earned sick leave.

The estate of a deceased employee is not entitled to any payment for unused sick leave contributed to or acquired by that employee from the County sick leave pool.

2B-7 JURY DUTY

All employees of Erath County who are called for jury duty shall receive their regular pay for the period they are called for jury duty, which includes both the jury selection process and, if selected, the time they actually serve on the jury.

Pay for serving on a jury shall only include the time the employee would have normally been scheduled to work and will not include extra pay if jury service involves time outside the employee's normal work schedule. Any fees paid for jury service may be kept by the employee.

All employees who are subpoenaed or ordered to attend court to appear as a witness or to testify in some official capacity on behalf of the County shall be entitled to leave with pay for such period as their court attendance may require. If an employee is absent from work to appear in private litigation in which they are a principal party, the time shall be charged to vacation, other eligible paid leave, or leave without pay.

2B-8 BEREAVEMENT LEAVE

An employee may request up to 3 consecutive work days of paid leave in the event of a death in an employee's immediate family. Additional time off is at the discretion of the department head, and the employee may be permitted to utilize vacation or sick leave. The elected official or department head must verify the family relationship. For purposes of bereavement, "immediate family" shall be defined

as spouse, child, parent, brother, sister, grandparent, grandchild or another relative who is dependent on the employee for care.

2B-9 HOLIDAY

Only full-time regular employees shall be eligible for the paid holiday benefit, and the County holidays shall be determined by the Erath County Commissioners Court.

All holidays not taken on the designated day must be taken off within 180 days in order to use the holiday time. Holidays not taken within the stated period will be lost automatically without compensation.

Special consideration shall be given to employees requesting time off for religious or other special observances which are not designated as paid holidays for Erath County. Each supervisor is responsible for granting this leave based on the needs of their individual departments. Vacation or leave without pay may be used for special leave granted.

Only the appropriate number of holiday hours will be used to account for the minimum number of hours needed for the designated work week/work period. (i.e. 40 or 85/171)

2B-10 LONGEVITY

All full-time regular employees and elected officials shall be eligible for longevity pay upon first pay period of service, and based on work anniversary date. Longevity pay is related solely to the length of total service with the county and is in addition to the regular salary set by the Commissioners Court.

Tier Calculations - FY 2024

Years completed	Months completed	Rate per Month	Annual Pay	Pay per Pay Period (75%)
0	0	5.00	60.00	1.731
1	12	5.00	120.00	3.462
2	24	5.00	180.00	5.192
3	36	10.00	480.00	13.846
4	48	10.00	600.00	17.308
5	60	15.00	1,080.00	31.154
6	72	15.00	1,260.00	36.346
7	84	15.00	1,440.00	41.538
8	96	20.00	2,160.00	62.308
9	108	20.00	2,400.00	69.231
10	120	25.00	3,300.00	95.192
11	132	25.00	3,600.00	103.846
12	144	25.00	3,900.00	112.500
13	156	25.00	4,200.00	121.154
14	168	25.00	4,500.00	129.808
15	180	30.00	5,760.00	166.154
16	192	30.00	6,120.00	176.538
17	204	30.00	6,480.00	186.923
18	216	30.00	6,840.00	197.308
19	228	30.00	7,200.00	207.692
20	240	35.00	8,820.00	254.423
21	252	35.00	9,240.00	266.538
22	264	35.00	9,660.00	278.654
23	276	35.00	10,000.00	288.462

***** TIER LEVELS ARE BASED OFF OF TIME SERVED AND
LONGEVITY DATE. MOVING BETWEEN TIERS TAKES PLACE IN
THE PAY PERIOD CONTAINING THE LONGEVITY DATE EACH
YEAR. *****

Part time and temporary employees will not receive longevity pay. If a part time employee becomes a regular employee, the longevity benefit will be calculated from the day the employment became regular.

2B-11 MILITARY LEAVE

All Erath County employees who are members of the National Guard or active reserve components of the United States Armed Forces shall be allowed up to 15 days off per federal fiscal year with pay for active duty or to attend active or inactive authorized training sessions and exercises. The 15 days paid military leave shall apply to the Federal Fiscal year and any unused balance at the end of the year shall not be carried forward into the next Federal Fiscal year. Pay for attendance at Reserve or National Guard training sessions or exercises shall be authorized only for periods which fall within the employee's normal work schedule. An employee may use vacation leave, earned compensatory time, or leave without pay if they must attend Reserve or National Guard Training sessions or exercises in excess of the fifteen-day maximum.

Any Erath County employee who is a member of the Texas military forces, a reserve component of the armed forces, or a member of a state or federally authorized urban search and rescue team called to state active duty by the governor or another appropriate authority in response to a disaster is entitled up to seven days of paid disaster leave per fiscal year. This leave is in addition to the paid leave provided for authorized training or duty otherwise authorized or ordered. During disaster leave under these provisions, the person may not be subjected to loss of time, efficiency rating, personal time, sick leave, or vacation time.

An employee going on military leave shall provide their supervisor with a set of orders within two business days after receiving them.

Upon request of the employee, Erath County will provide a statement that contains the number of workdays used for military leave in the fiscal year as well as a statement of the number of workdays left for use during the fiscal year.

Erath County employees who leave their positions because of being called to active military service or who voluntarily enter the Armed Forces of the United States shall be eligible for re-employment in accordance with state and federal laws in effect at the time of their release from duty.

2B-12 PAID QUARANTINE LEAVE 9240

Erath County shall provide paid quarantine leave for peace officers, detention officers, and emergency medical technicians employed by Erath County and ordered by a supervisor or the health authority to quarantine or isolate due to a possible or known exposure to a communicable disease while on duty. This includes peace officers, detention officers and

emergency medical technicians, as defined by this policy, who are employed by, appointed to, or elected to their position.

"Detention officer" means an individual appointed or employed by a county as a county jailer or other individual responsible for the care and custody of individuals incarcerated in a county jail.

"Emergency medical technician" means an individual who is certified as an emergency medical technician under Chapter 773, Health and Safety Code, and employed by the county.

"Health authority" has the meaning assigned by Section 121.021, Health and Safety Code. A health authority is a physician appointed under the provisions of Chapter 121 to administer state and local laws relating to public health within the appointing body's jurisdiction. A health authority must be a competent physician with a reputable professional standing who is legally qualified to practice medicine in the state and a resident of the state.

Counties that do not establish a local health department or public health district may appoint a physician as health authority to administer state and local laws relating to public health in the county's jurisdiction.

"Peace officer" means an individual described by Article 2.12, Code of Criminal Procedure, who is elected for, employed by, or appointed by the county.

Eligible employees who are on qualifying paid quarantine leave shall receive all employment benefits and compensation, including leave accrual, retirement, and health benefits for the duration of the leave; and, if applicable, shall be reimbursed for reasonable costs related to the quarantine, including lodging, medical costs, and transportation. An employee on qualifying paid quarantine leave will not have their leave balances reduced.

Off-duty exposures to communicable diseases will not be covered under this policy.

2B-13 RETIREMENT

All regular employees (full-time, part-time, and regular variable hour) shall be eligible for the retirement benefit offered through the Texas County and District Retirement System. Temporary seasonal and temporary short-term part-time employees will not be eligible for retirement benefits. Eligible employees shall make contributions to the retirement program through a system of payroll deductions. Erath County shall contribute to each eligible employee's retirement account according to requirements of TCDRS. Information on the retirement program may be obtained at the County Human Resource office during the normal working hours for that office.

2B-14 SOCIAL SECURITY/MEDICARE

All county employees shall participate in the federal Social Security/Medicare program which provides certain retirement, disability, and other benefits. Deductions for these programs will be taken from each paycheck.

2B-15 FAMILY MEDICAL LEAVE ACT/MILITARY FAMILY LEAVE (FMLA/MFL)

The federal Family and Medical Leave Act of 1993 (FMLA) requires an employer to provide eligible employees with unpaid leave under certain circumstances. There are two types of leave available:

- 1) the basic 12-week FMLA entitlement; and
- 2) the Military Family Leave (MFL) entitlement described in this policy.

ELIGIBILITY:

To be eligible for benefits under this policy, an employee must:

- 1) have worked for Erath County at least 12 months (It is not required that these 12 months be consecutive; however, a continuous break in service of 7 years or more will not be counted toward the 12 months.); **and** have worked at least 1250 hours during the previous 12 months; and
- 2) be employed at a work site that has 50 or more employees within a 75-mile radius.

Any employee with any question about their eligibility for FMLA leave should contact the Human Resource office for more information.

QUALIFYING EVENTS:

Family medical leave under this policy may be taken for the following reasons:

- 1) the birth of a child and to care for that child;
- 2) the placement of a child in the employee's home for adoption or foster care;
- 3) to care for a spouse, child (under the age of 18 or if over 18, incapable of self-care due to a disability), or parent with a serious health condition;
- 4) the serious health condition of the employee that makes the employee unable to perform the essential functions of their job;
- 5) a qualifying exigency arising out of the fact that an employee's spouse, child or parent is a covered military member of the Armed Forces (Regular, Reserve or National Guard), deployed to a foreign country or has been notified of an impending call or order to active duty in a foreign country;
- 6) to care for a covered service member (Regular, Reserve or National Guard) with a serious injury or illness if the employee is the spouse, child, parent or next of kin (nearest blood relative) of the service member; or
- 7) to care for a covered veteran who is undergoing medical treatment, recuperation or therapy, for a serious injury or illness and who was a member of the Armed Forces (Regular, Reserve or National Guard) at any time during the period of 5 years preceding the date on which the veteran began that medical treatment, recuperation or therapy.

SERIOUS HEALTH CONDITION:

Serious health condition is defined as a health condition that requires overnight inpatient care at a hospital, hospice, or residential care medical facility or continuing treatment by a health care provider.

A serious health condition involving continuing treatment by a health care provider includes any one or more of the following:

- 1) a period of incapacity of more than three consecutive, full calendar days, and any subsequent treatment or period of incapacity relating to the same condition, that also involves:
 - a) Treatment two or more times within 30 days of incapacity; or
 - b) Treatment by a health care provider on at least one occasion within the first seven days of incapacity that results in a regimen of continuing treatment by a health care provider.
- 2) Any period of incapacity due to pregnancy or pre-natal care.
- 3) Any period of incapacity or treatment due to a chronic serious health condition that requires periodic visits to a health care provider and continues over an extended period of time.
- 4) Any period of incapacity that is permanent or long term due to a condition for which treatment is not effective.
- 5) Any period of incapacity or absence to receive multiple treatments by a health care provider.

QUALIFYING EXIGENCY LEAVE:

An eligible employee may be entitled to use up to 12 weeks of their FMLA leave entitlement to address certain qualifying exigencies. Leave may be used if the employee's spouse, child of any age or parent in the Armed Forces (Regular, Reserves or National Guard) is on active duty or called to active duty status in a foreign country.

Qualifying exigencies may include:

- 1) short-notice deployment (up to seven days of leave);
- 2) attending certain military events and related activities;
- 3) arranging for alternative childcare;
- 4) addressing certain financial and legal arrangements;
- 5) periods of rest and recuperation for the covered military member (up to fifteen days of leave);
- 6) attending certain counseling sessions;
- 7) attending post-deployment activities (available for up to 90 days after the termination of the covered military member's active duty status);
- 8) other activities arising out of the covered military member's active duty or call to active duty in a foreign country and agreed upon by the county and the employee;
- 9) attending family support or assistance programs and informational briefings;
- 10) acting as the covered military member's representative before a governmental agency;
- 11) addressing issues that arise from the death of a covered military member while on active duty status in a foreign country; and
- 12) other activities arising out of the covered military member's active duty or call to active duty in a foreign country and agreed upon by the county and employee.

LENGTH OF LEAVE:

An employee may use up to 12 weeks leave per 12-month period under this policy. Erath County sets the 12-month period used under this policy as a *“rolling” 12-month period measured backward from the date an employee uses FMLA leave.*

A couple who both work for the county is entitled to a maximum combined leave of 12 weeks in any 12-month period for the birth of a healthy newborn child (i.e., bonding time) or placement of a child, or care for a parent with a serious health condition.

The combined limit for a couple employed by the county is 26 weeks in a single 12-month period if leave is to care for a covered service member or veteran with a serious injury or illness.

MILITARY CAREGIVER LEAVE:

An eligible employee may take up to 26 weeks of leave to care for a covered service member during a single 12-month period. A covered service member is either a current member or veteran of the Armed Forces (Regular, Reserve or National Guard).

An eligible employee may take up to 26 weeks of leave to care for a covered service member of the Armed Forces (Regular, Reserve, or National Guard) who has been rendered medically unfit to perform their duties due to a serious injury or illness incurred in the line of duty while on active duty for which the service member is undergoing medical treatment, recuperation, or therapy; or is in outpatient status; or is on the temporary disability retired list.

An eligible employee may take up to 26 weeks of leave to care for a veteran (Regular, Reserve, or National Guard) who is undergoing medical treatment, recuperation, or therapy for a serious injury or illness and who was a member of the Armed Forces (Regular, Reserve or National Guard) at any time during the period of five years preceding the date on which the veteran undergoes that medical treatment, recuperation or therapy.

The MFL entitlement is applied on a per-injury basis and an eligible employee may be entitled to take more than one period of 26 weeks of leave if the leave is to care for different covered service members or a covered veteran with a subsequent serious illness or injury, except that no more than 26 weeks may be taken within any single 12-month period.

An eligible employee may begin taking military caregiver leave up to five years after their family member was discharged or released from the military. The eligible employee's first date of leave must be within the five-year period; however, the employee may continue to take such leave throughout the single 12-month period that is applicable to military caregiver leave, even if the leave extends beyond the five-year period.

An employee does not need to use this leave entitlement in one block. Leave can be taken intermittently or on a reduced leave schedule when medically necessary. Employees must make reasonable efforts to schedule leave for planned medical treatment so as not to unduly disrupt the county's operations.

WORK RELATED INJURY:

Erath County will always designate qualifying work-related injuries with lost time as FMLA qualifying.

SUBSTITUTION OF PAID LEAVE:

Erath County requires substitution of paid leave for all FMLA or MFL events. A full-time employee must follow the compensatory, vacation and sick leave policy guidelines. The balance of FMLA is unpaid leave. FMLA and MFL run concurrently with all substituted paid leave, including Workers' Compensation leave and Short-Term Disability.

If any qualified employee has short-term disability insurance, the employee doesn't have to use compensatory, vacation or sick time, but if the employee does not have short-term disability insurance, the employee will have to use compensatory, vacation and sick leave while on FMLA.

The maximum amount of paid and unpaid leave that may be used under this policy in a 12-month period is 12 weeks, except for qualifying leave to care for a covered military member with a serious injury or illness, which is a maximum of 26 weeks in a 12-month period.

CONTINUED EMPLOYEE BENEFITS:

While an employee is on leave under this policy, the county will continue to pay the employee's medical plan premium at the same rate as if the employee had been actively at work. The employee is required to pay for dependent coverage and for any other coverage for which the employee would normally pay, or the coverage will be discontinued. An employee's obligation to pay for coverage will be made through regular payroll deduction while the employee is on paid leave status. While on unpaid leave, the employee is required to pay for premiums due to the county no later than 30 days after the date of the pay period in which the premium comes due. The county may cancel unpaid coverage by providing the employee advance written notice, not less than 15 days before the coverage will be cancelled for non-payment.

At the end of the 12-week leave period or the 26-week leave period in a single 12-month period to care for an injured covered military member, an eligible employee will be offered COBRA if they are unable to return to work.

INTERMITTENT LEAVE AND REDUCED SCHEDULE:

An employee may take intermittent leave under this policy if it is necessary for the care and treatment of a serious health condition of the employee, the employee's eligible family member or the care of a covered military member or veteran.

An employee may work a reduced schedule under this policy if it is necessary for the care and treatment of a serious health condition of the employee, the employee's eligible family member, or the care of a covered military member or veteran.

All work time missed as the result of intermittent leave or a reduced work schedule under this policy will be deducted from the employee's 12-week or 26-week leave eligibility in a single 12-month period.

CERTIFICATION REQUIREMENTS:

The county has the right to ask for certification of the serious health condition of the employee or the employee's eligible family member when the employee requests or is using leave under this policy.

The county may send a request for medical certification to an employee who has been out of work for three or more days to determine the employee's FMLA leave eligibility. The employee is requested to have their physician complete and return the medical certification, or provide appropriate documentation, within 15 days of the employee's receipt of the form to be eligible for FMLA leave. An employee's failure to return the medical certification may result in denial of FMLA leave by the county.

The employee must respond to the county's request for certification within 15 days of receipt of the request or provide a reasonable explanation for the delay in writing before the 15th day after receipt of the request. If an employee does not provide certification or otherwise respond, the county may deny leave under this policy.

If an employee requests intermittent leave or a reduced work schedule, the certification submitted must also include the dates and duration of treatment and a statement of medical necessity for taking intermittent leave or working a reduced schedule. The county may request re-certification for intermittent or reduced schedule leave every six months in connection with an eligible absence.

The county may ask for a second opinion from a health care provider of the county's choice, at the expense of the county, if the county has reason to question the certification, unless the leave is necessary to care for a seriously injured or ill covered service member supported by an invitational travel order (ITO) or invitational travel authorization (ITA) to join an injured or ill service member at their bedside.

If there is a conflict between the certification submitted by the employee and the second certification obtained by the county, the county may require a third certification, at the expense of the county, from a health care provider agreed upon by both the employee and the county. The third opinion is final and binding on the county and the employee.

REQUESTING LEAVE:

Unless FMLA leave is unforeseeable, an employee is required to submit a written request for leave under this policy to their immediate supervisor.

Where reasonably practicable, an employee should give their immediate supervisor a minimum of 30 days' notice before beginning leave under this policy. Where it is not reasonably practicable to give 30 days' notice, the employee is required to give as much notice as possible.

REINSTATEMENT:

An employee returning from leave under this policy, and who has not exceeded the 12-week maximum leave period allowed, will be returned to the same job or a job equivalent to the job the employee held before going on FMLA leave. An employee who has not exceeded the 26-week maximum leave period in a single 12-month period, allowed to care for a seriously ill or injured covered military member, will be returned to the same job or a job equivalent to the job the employee held before going on leave.

If an employee is placed in a different position, it will be one with equivalent status, pay, benefits, and other employment terms and which entails substantially equivalent skill, effort, responsibility, and authority.

The county has no obligation to reinstate an employee who takes more than the 12 weeks of leave allowed under this policy, or who elects not to return to work after using the maximum leave allowed, including an employee with available sick or vacation leave.

REPAYMENT OF BENEFITS:

Unless an employee is unable to return to work because of the serious medical condition of the employee or an eligible family member, or another situation beyond the control of the employee, an employee who does not return to work after using the maximum leave allowed under this policy will be required to reimburse the county for all medical premiums and other benefits paid by the county while the employee was on leave without pay related to their FMLA leave.

OTHER BENEFITS:

While on leave without pay under this policy, an employee does not earn vacation or sick leave, is not eligible for holiday pay, and does not earn other benefits afforded to employees actively at work, except as stated in this policy, unless other employees who go on leave without pay are allowed to do so.

An employee who is out on approved FMLA leave may not take trips outside of the county unless the travel is related to the employee's own serious health condition, the serious health condition of the child, spouse or parent of the employee or to attend qualifying military events. An employee may ask their immediate supervisor for written permission to take other trips outside of the county which may be granted at the supervisor's sole discretion.

Employees are forbidden from working another job while on approved FMLA leave from the county.

REGULATION:

Any area or issue regarding family and medical leave that is not addressed in this policy is subject to the basic requirements of the FMLA and the regulations issued to implement it.

RETURN-TO-WORK:

An employee is required to provide a fitness-for-duty certification before the employee returns to work.

ENFORCEMENT:

An employee may file a complaint with the U.S. Department of Labor or may bring a private lawsuit against an employer for unlawful discrimination under the FMLA. The FMLA does not affect any federal or state law prohibiting discrimination or supersede any federal or state law that provides greater family or medical leave rights.

COUNTING:

To count employees in the county we will include all full-time employees, all part-time employees currently getting paid and all temporary employees currently getting paid. This will not include a count of elected officials, CSCD employees, A&M County Agents or any employees paid by the state. The county will not count people on the payroll register that are NOT getting paid. When the county payroll hits 50 eligible employees, Erath County will comply fully with the entire regulation and will notify employees of the change to the FMLA policy for over 50 employees.

RESPONSIBILITIES:

Erath County will post the current FMLA poster as provided by the Department of Labor. If an employee asks for FMLA leave for any reason, Erath County will respond in writing and will use the FMLA forms (WH-381) "Notice of Eligibility and Rights and Responsibility" and (WH-382) "Designation Notice" to notify the employee of their eligibility rights.