



## Event # 358

**Name:** P25 Radio Communication System Refresh-Replacement

**Description:** This Request For Proposals (RFP) is to solicit responses from qualified firms with experience in providing hardened, public safety grade, state of the art, radio communications networks. The City is desirous of having a P25 radio network that is interoperable (in the existing environment), that can utilize ISSI connectivity to maintain the existing E911 Center arrangement, provides adequate coverage, provides adequate capacity, is P25 compliant and, utilizes 800 MHz frequencies.

Initial Term: 5-Years, with three (3) 5-Year Renewal Options

**Buyer:** PLATKIN, LAURIE D.

**Status:** Pending Award

**Event Type:** RFP

**Currency:** USD

**Sealed Bid:** Yes

**Respond To All Lines:** Yes

**Q & A Allowed:** Yes

**Number Of Amendments:** 6

**Open Date:** 03/28/2025 02:00:00 PM

**Q And A Open:** 03/28/2025 07:00:00 PM


**Close Date:** 06/26/2025 02:00:00 PM EST

**Q And A Close:** 06/02/2025 05:00:00 PM

## Contacts

Name	Phone Number	Email Address
LAURIE PLATKIN	US 954-828-5138	lplatkin@fortlauderdale.gov

## Meetings

Meeting	Description	Location	Meeting Date	Required
Pre-bid Conference and Site Visit	Plan to Attend Multiple Site Locations after first meeting at Fort Lauderdale ITS Headquarters. We request all Firms that will be at the meeting to email lplatkin@fortlauderdale.gov	Fort Lauderdale ITS Headquarters	 04/21/2025 10:30:00 AM	Yes

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Meeting	Description	Location	Meeting Date	Required
	and provide First and Last Name and Company by COB 4/18/25.			

Questions

Question

- Did you Compile One (1) PDF of ALL Attachments in Sequential Order Per the Items Listed on This Checklist and Attach in the Questions Section of this Event?
- Did you download, review, sign and reattach all required forms?
- Anti-Human Trafficking Affidavit -
- Do you acknowledge that if your firm is awarded this contract, your firm will have to complete and submit the attached - Anti-Human Trafficking Affidavit Per Florida Statute 787.06 (2024), (13)?
- Florida Statute 787.06 (2024), (13) When a contract is executed, renewed, or extended between a nongovernmental entity and a governmental entity, the nongovernmental entity must provide the governmental entity with an affidavit signed by an officer or a representative of the nongovernmental entity under penalty of perjury attesting that the nongovernmental entity does not use coercion for labor or services as defined in this section. For purposes of this subsection, the term “governmental entity” has the same meaning as in s. 287.138(1).
- Affidavit of Compliance with Foreign Entity Laws -
- Do you acknowledge that if your firm is awarded this contract, your firm will have to complete and submit the attached Affidavit of Compliance with Foreign Entity Laws Per Florida Statute - §287.138, 692.201, 692.202, 692.203, and 692.204?
- Did you attach your REQUIRED current MSRP Price List of all Equipment and Services?
- Did you download, review, sign, and reupload Addendum 1?
- Did you download, review, sign, and reupload Addendum 2?
- Did you download, review, sign, and reupload Addendum 3?
- Did you download, review, sign, and reupload Addendum 4?
- Did you download, review, sign, and reupload Addendum 5?
- Did you download, review, sign, and reupload Addendum 6?

Attachments

## Event # 358: P25 Radio Communication System Refresh-Replacement

Name	Description	Attachment
P25 Radio Communication System...Solicitation		_358-RFP-P25 RCS_R5.pdf
358-APPENDICES A-F		358-APPENDICES A-F_R1.pdf
Attachment 1 - Compliance - Portable Radio Table	Download Excel document and answer using pulldown check confirmation.	Attachment 1 - Compliance - Portable Radio Table.xlsx
Attachment 2 - 358 - Pricing Worksheet Templates	Three Tabs in Excel document. 1) Pricing Breakdown Primary/Redundant Site. Individual Submittals Required. 2) Pricing Breakdown Radio Site. Submit One per Location. 3) Provide % Discount Off MSRP List Price Per Breakdown of Years Indicated. MSRP price list is required to be attached in questions section.	Attachment 2 - 358 - Pricing Worksheet Templates.xlsx
Attachment 3 - 358 - P25 Equipment Trade in List	Provide Pricing for As Is Trade-In Equipment. Awarded vendor responsible for pick-up and removal.	Attachment 3 - 358 - P25 Equipment Trade in List.xlsx
General Conditions		General Conditions.pdf
Attachment 4 - 358 - Sub-contractor Disclosure Form		Attachment 4 - 358 - Sub-contractor Disclosure Form.xlsx

### Line Details

## Line 1: P25 800 MHz Simulcast Trunked Radio Network

**Description:** Include the grand total for all P25 800 MHz Simulcast Trunked Radio Network across the entire project.

**Item:** P25 800 MHZ SIMULCAST TRUNKED RA P25 800 MHz Simulcast Trunked Radio Network

**Commodity Code:** 725 RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No

**Add On Charges Allowed:** No

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### Line 2: Dispatch Consoles

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**Description:** Include the grand total for all Dispatch Consoles across the entire project.

**Item:** DISPATCH CONSOLES      Dispatch Consoles

**Commodity Code:** 725      RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 12.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No

**Add On Charges Allowed:** No

### Line 3: Logging Recorders

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**Description:** Include the grand total for all Logging Recorders across the entire project.

**Item:** LOGGING RECORDERS      Logging Recorders

**Commodity Code:** 725      RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No

**Add On Charges Allowed:** No

### Line 4: Microwave Radios

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**Description:** Include the grand total for all Microwave Radios across the entire project.

**Item:** MICROWAVE RADIOS      Microwave Radios

**Commodity Code:** 725      RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Quantity:** 1.0000

**Unit of Measure:** EA

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**Require Response:** Yes

**Price Breaks** No  
**Allowed:**

**Allow Alternate** No  
**Responses:**

**Add On Charges** No  
**Allowed:**

### Line 5: Antennas

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**Description:** Include the grand total for all Antennas across the entire project.

**Item:** ANTENNAS Antennas

**Commodity Code:** 725 RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer** MFC  
**Code:**

**Division:** DIV

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks** No  
**Allowed:**

**Allow Alternate** No  
**Responses:**

**Add On Charges** No  
**Allowed:**

### Line 6: Cabling

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**Description:** Include the grand total for all Cabling across the entire project.

**Item:** CABLING Cabling

**Commodity Code:** 725 RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer** MFC  
**Code:**

**Division:** DIV

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks** No  
**Allowed:**

**Allow Alternate** No  
**Responses:**

**Add On Charges** No  
**Allowed:**

### Line 7: Towers

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**Description:** Include the grand total for all Towers across the entire project.

**Item:** TOWERS Towers

**Commodity Code:** 725 RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No

**Add On Charges Allowed:** No

### Line 8: Radio Shelters

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**Description:** Include the grand total for all Radio Shelters across the entire project.

**Item:** RADIO SHELTERS Radio Shelters

**Commodity Code:** 725 RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No

**Add On Charges Allowed:** No

### Line 9: DC Battery Plants

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**Description:** Include the grand total for all DC Battery Plants across the entire project.

**Item:** DC BATTERY PLANTS DC Battery Plants

**Commodity Code:** 725 RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks** No

**Allow Alternate** No

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**Allowed:**

**Responses:**

**Add On Charges** No  
**Allowed:**

### Line 10: Lightning Protection

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**Description:** Include the grand total for all Lightning Protection across the entire project.

**Item:** LIGHTNING PROTECTION Lightning Protection

**Commodity Code:** 725 RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks** No  
**Allowed:**

**Allow Alternate** No  
**Responses:**

**Add On Charges** No  
**Allowed:**

### Line 11: Mobile Radios

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**Description:** Include the grand total for all Mobile Radios across the entire project.

**Item:** MOBILE RADIOS Mobile Radios

**Commodity Code:** 725 RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 1,025.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks** No  
**Allowed:**

**Allow Alternate** No  
**Responses:**

**Add On Charges** No  
**Allowed:**

### Line 12: Portable Radios

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**Description:** Include the grand total for all Portable Radios across the entire project.

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**Item:** PORTABLE RADIOS      Portable Radios

**Commodity Code:** 725      RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 2,225.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No

**Add On Charges Allowed:** No

### Line 13: Base Station/Desktop Radios

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**Description:** Include the grand total for all Base Station/Desktop Radios across the entire project.

**Item:** BASE STATION/DESKTOP RADIOS      Base Station/Desktop Radios

**Commodity Code:** 725      RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 50.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No

**Add On Charges Allowed:** No

### Line 14: Remote Radio Controllers

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**Description:** Include the grand total for all Remote Radio Controllers across the entire project.

**Item:** REMOTE RADIO CONTROLLERS      Remote Radio Controllers

**Commodity Code:** 725      RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 50.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No



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**Add On Charges** No  
**Allowed:**

### Line 15: Engineering Services

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**Description:** Include the grand total for all Engineering Services across the entire project.

**Item:** ENGINEERING SERVICES    Engineering Services

**Commodity Code:** 725    RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer Code:** MFC    **Division:** DIV

**Quantity:** 1.0000    **Unit of Measure:** EA

**Require Response:** Yes    **Price Breaks Allowed:** No    **Allow Alternate Responses:** No

**Add On Charges** No  
**Allowed:**

### Line 16: Installation Services

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**Description:** Include the grand total for all Installation Services across the entire project.

**Item:** INSTALLATION SERVICES    Installation Services

**Commodity Code:** 725    RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer Code:** MFC    **Division:** DIV

**Quantity:** 1.0000    **Unit of Measure:** EA

**Require Response:** Yes    **Price Breaks Allowed:** No    **Allow Alternate Responses:** No

**Add On Charges** No  
**Allowed:**

### Line 17: Site Development

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**Description:** Include the grand total for all Site Development across the entire project.

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**Item:** SITE DEVELOPMENT    Site Development

**Commodity Code:** 725    RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No

**Add On Charges Allowed:** No

### Line 18: Civil Engineering

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**Description:** Include the grand total for all Civil Engineering Services across the entire project.

**Item:** CIVIL ENGINEERING    Civil Engineering

**Commodity Code:** 725    RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No

**Add On Charges Allowed:** No

### Line 19: Tower Services

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**Description:** Include the grand total for all Tower Services across the entire project.

**Item:** TOWER SERVICES    Tower Services

**Commodity Code:** 725    RADIO COMMUNICATION, TELEPHONE, AND TELECOMMUNICATION EQUIPM

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No

**Add On Charges Allowed:** No

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### Line 20: 1ST TERM - EXTENDED WARRANTY

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**Description:** Provide price for Extended Warranty, Maintenance, and Support from Date of Final Acceptance to the End of the 1st 5-year term. Inclusive of infrastructure software updates, hardware updates required to support newer software, defective/failed parts replacements, and spare parts, shall be included as part of the Vendor's cost proposal. Multi-year pricing shall be detailed by the Customer fiscal year (October 1, through September 30).

**Item:** 1ST TERM - EXTENDED WARRANTY    1ST TERM - EXTENDED WARRANTY

**Commodity Code:** 936-84    Towers, Radio/Radar, etc., Maintenance and Repair (Including

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No

**Add On Charges Allowed:** No

### Line 21: 2ND TERM - EXTENDED WARRANTY

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**Description:** Provide price for Extended Warranty, Maintenance, and Support for the 2nd 5-year term, years 6-10. Inclusive of infrastructure software updates, hardware updates required to support newer software, defective/failed parts replacements, and spare parts, shall be included as part of the Vendor's cost proposal. Multi-year pricing shall be detailed by the Customer fiscal year (October 1, through September 30).

**Item:** 2ND TERM - EXTENDED WARRANTY    2ND TERM - EXTENDED WARRANTY    Years 6-10

**Commodity Code:** 936-84    Towers, Radio/Radar, etc., Maintenance and Repair (Including

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No

**Add On Charges Allowed:** No

### Line 22: 3RD TERM - EXTENDED WARRANTY

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**Description:** Provide price for Extended Warranty, Maintenance, and Support for the 3rd 5-year term, years 11-15. Inclusive of infrastructure software updates, hardware updates required to support newer software, defective/failed parts replacements, and spare parts, shall be included as part of the Vendor's cost proposal. Multi-year pricing shall be detailed

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by the Customer fiscal year (October 1, through September 30).

**Item:** 3RD TERM - EXTENDED WARRANTY    3RD TERM - EXTENDED WARRANTY    Years 11-15

**Commodity Code:** 936-84    Towers, Radio/Radar, etc., Maintenance and Repair (Including

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No

**Add On Charges Allowed:** No

### Line 23: 4TH TERM - EXTENDED WARRANTY

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**Description:** Provide price for Extended Warranty, Maintenance, and Support for the 4th 5-year term, years 16-20. Inclusive of infrastructure software updates, hardware updates required to support newer software, defective/failed parts replacements, and spare parts, shall be included as part of the Vendor's cost proposal. Multi-year pricing shall be detailed by the Customer fiscal year (October 1, through September 30).

**Item:** 4TH TERM - EXTENDED WARRANTY    4TH TERM - EXTENDED WARRANTY

**Commodity Code:** 936-84    Towers, Radio/Radar, etc., Maintenance and Repair (Including

**Manufacturer Code:** MFC

**Division:** DIV

**Quantity:** 1.0000

**Unit of Measure:** EA

**Require Response:** Yes

**Price Breaks Allowed:** No

**Allow Alternate Responses:** No

**Add On Charges Allowed:** No

### Line 24: Trade-In Items

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**Description:** From Attachment 3 - Provide a lump sum price for all Trade-in Items Listed in RFP

**Item:** TRADE-IN ITEMS    Trade-In Items

**Commodity Code:** 726    RADIO COMMUNICATION EQUIPMENT, ACCESSORIES AND SUPPLIES

**Manufacturer Code:** MFC

**Division:** DIV

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<b>Quantity:</b> 1.0000	<b>Unit of Measure:</b> LS	
<b>Require Response:</b> Yes	<b>Price Breaks Allowed:</b> No	<b>Allow Alternate Responses:</b> No
<b>Add On Charges Allowed:</b> No		

Line 25: TRAINING COSTS

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<b>Item:</b> TRAINING COSTS    TRAINING COSTS		
<b>Long Item Description:</b> All training costs, direct or indirect, such as meeting rooms, instructor travel, lodging, and transportation, must be included in the final proposed price.		
<b>Commodity Code:</b> 785-92    Training Aids, Materials, and Equipment for the Industrial T		
<b>Manufacturer Code:</b> MFC	<b>Division:</b> DIV	
<b>Quantity:</b> 1.0000	<b>Unit of Measure:</b> LS	
<b>Require Response:</b> Yes	<b>Price Breaks Allowed:</b> No	<b>Allow Alternate Responses:</b> No
<b>Add On Charges Allowed:</b> No		

## SECTION I – INTRODUCTION AND INFORMATION

### 1.1 Purpose

The City of Fort Lauderdale, Florida (City) is seeking qualified, experienced and licensed firm(s), hereinafter referred to as Contractor, Proposer, Vendor, to provide the City with a new P25 700/800 MHz Digital Simulcast Trunked radio network capable of meeting current and future communication needs, reliably and functionally for the City, in accordance with the terms, conditions, and specifications contained in this Request for Proposals (RFP).

### 1.2 Point of Contact

For information concerning [procedures for responding to this solicitation](#), contact Procurement Specialist Laurie Platkin at (954) 828-538 or email at [lplatkin@fortlauderdale.gov](mailto:lplatkin@fortlauderdale.gov). Such contact shall be for clarification purposes only.

For information concerning technical specifications, please utilize the question / answer feature provided by the [City's on-line strategic sourcing platform](#). Questions of a material nature must be received prior to the cut-off date specified in the RFP Schedule. Material changes, if any, to the scope of services or bidding procedures will only be transmitted by written addendum. Contractors please note: Proposals shall be submitted as stated in PART IV – Submittal Requirements. No part of your proposal can be submitted via FAX. No variation in price or conditions shall be permitted based upon a claim of ignorance. Submission of a proposal will be considered evidence that the Contractor has familiarized themselves with the nature and extent of the work, and the equipment, materials, and labor required. The entire proposal must be submitted in accordance with all specifications contained in this solicitation. The questions and answers submitted in the shall become part of any contract that is created from this RFP.

### 1.3 Pre-proposal Conference and Site Visit

There will be a **MANDATORY** pre-proposal conference and site visit scheduled for this Request for Proposal.

It will be the sole responsibility of the Contractor to attend the pre-proposal/site visit to inspect the City's location(s) facilities systems prior to submitting a bid/proposal. No variation in price or conditions shall be permitted based upon a claim of ignorance. Submission of a proposal will be considered evidence that the Proposer has familiarized themselves with the nature and extent of the work, equipment, materials, and labor required.

If a person decides to appeal any decision made by the board, agency, or commission with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based.

### 1.4 CITY'S ON-LINE STRATEGIC SOURCING PLATFORM

The City of Fort Lauderdale uses the City's on-line strategic sourcing platform to administer the competitive solicitation process, including but not limited to soliciting proposals, issuing addenda, posting results and issuing notification of an intended decision. There is no charge to register and download the RFP from the City's on-line strategic sourcing platform. Proposers are strongly encouraged to read the supplier tutorials available in the [City's on-line strategic sourcing platform](#) well in advance of their intention of submitting a proposal to ensure familiarity with the use of the City's on-line strategic sourcing platform. The City shall not be responsible for a Proposers inability to submit a Proposal by the end date and time for any reason, including issues arising from the use of the City's on-line strategic sourcing platform. It is the sole responsibility of the Proposer to ensure that their proposal is submitted electronically through the City's on-line strategic sourcing platform no later than the time and date specified in this solicitation.

PAPER PROPOSAL SUBMITTALS WILL NOT BE ACCEPTED. PROPOSALS MUST BE SUBMITTED ELECTRONICALLY VIA the [City's on-line strategic sourcing platform](#).

**1.5 Electronic Bid Openings/Proposal Closings**

Please be advised that effective immediately, and until further notice, all Invitation to Bids, Request for Proposals, Request for Qualifications, and other solicitations led by the City of Fort Lauderdale will be opened electronically via the [City's on-line strategic sourcing platform](#) at the date and time indicated on the solicitation. All openings will be held on the City's on-line strategic sourcing platform.

Anyone requesting assistance or having further inquiry in this matter must contact the Procurement Specialist indicated on the solicitation, via the Question-and-Answer forum on the City's on-line strategic sourcing platform before the Last Day for Questions indicated in the Solicitation.

*END OF SECTION*

## **SECTION II - SPECIAL TERMS AND CONDITIONS**

### **2.1 General Conditions**

RFP General Conditions (Form G-107, Rev. 02/22) are included and made a part of this RFP.

### **2.2 Addenda, Changes, and Interpretations**

It is the sole responsibility of each firm to notify the Buyer utilizing the question / answer feature provided by the [City's on-line strategic sourcing platform](#) and request modification or clarification of any ambiguity, conflict, discrepancy, omission, or other error discovered in this competitive solicitation. Requests for clarification, modification, interpretation, or changes must be received prior to the Question and Answer (Q & A) Deadline. Requests received after this date may not be addressed. Questions and requests for information that would not materially affect the scope of services to be performed, or the solicitation process will be answered within the question / answer feature provided by the City's on-line strategic sourcing platform and shall be for clarification purposes only. Material changes, if any, to the scope of services or the solicitation process will only be transmitted by official written addendum issued by the City and uploaded to the City's on-line strategic sourcing platform as a separate addendum to the RFP. Under no circumstances shall an oral explanation given by any City official, officer, staff, or agent be binding upon the City and should be disregarded. All addenda are a part of the competitive solicitation documents, and each firm will be bound by such addenda. It is the responsibility of each to read and comprehend all addenda issued.

### **2.3 Changes and Alterations**

Proposer may change or withdraw a Proposal at any time prior to Proposal submission deadline; however, no oral modifications will be allowed. Modifications shall not be allowed following the Proposal deadline.

### **2.4 Proposer's Costs**

The City shall not be liable for any costs incurred by Proposers in responding to this RFP.

### **2.5 Pricing/Delivery**

All pricing should be identified on the Cost Proposal page provided in this RFP. No additional costs may be accepted, other than the costs stated on the Cost Proposal page. Failure to use the City's Cost Proposal page and provide costs as requested in this RFP may deem your proposal non-responsive.

Contractor shall quote a firm, fixed price for all services stated in the RFP. All costs including travel shall be included in your proposal. The City shall not accept any additional costs including any travel associated with coming to the City of Fort Lauderdale.

All pricing must include delivery and installation and be quoted FOB: Destination.

### **2.6 Price Validity**

Prices provided in this Request for Proposals (RFP) shall be valid for at least One Hundred and Twenty (120) days from time of RFP opening unless otherwise extended and agreed upon by the City and Bidder/Proposer. The City shall award contract within this time period or shall request to the recommended awarded vendor an extension to hold pricing, until products/services have been awarded.

### **2.7 Invoices/Payment**

The following payment schedule shall apply:

- 10% at Contract execution.
- 10% at delivery of inventory by the City or their designee of radio equipment and accessories to the City's designated location(s).



- 10% at successful completion of radio acceptance testing.
- 10% upon issuance of the portable radio equipment including completion of applicable training.
- 10% upon installation of the mobile radio and control station equipment including completion of applicable training.
- 45% upon Final Acceptance
- 5% upon receipt of Documentation.

Payment terms will be considered Net 45 days after the date of satisfactory delivery at the place of acceptance and receipt of correct invoice at the office specified, whichever occurs last, in accordance with the Florida Local Government Prompt Payment Act. Proposer may offer cash discounts for prompt payment, but they will not be considered in determination of award.

## **2.8 Related Expenses/Travel Expenses**

All costs including travel are to be included in your bid. The City will not accept any additional costs.

## **2.9 Payment Method**

The City of Fort Lauderdale has implemented a Procurement Card (P-Card) program which changes how payments are remitted to its vendors. The City has transitioned from traditional paper checks to payment by credit card via MasterCard or Visa. This allows you as a vendor of the City of Fort Lauderdale to receive your payment fast and safely. No more waiting for checks to be printed and mailed. Payments will be made utilizing the City's P-Card (MasterCard or Visa). Accordingly, firms must presently have the ability to accept credit card payment or take whatever steps necessary to implement acceptance of a credit card before the commencement of a contract. See Contract Payment Method form attached.

## **2.10 Mistakes**

The proposer shall examine this RFP carefully. The submission of a Proposal shall be prima facie evidence that the consultant has full knowledge of the scope, nature, and quality of the work to be performed; the detailed requirements of the specifications; and the conditions under which the work is to be performed. Ignorance of the requirements will not relieve the consultant from liability and obligations under the Contract.

## **2.11 Acceptance of Proposals / Minor Irregularities**

**2.11.1** The City reserves the right to accept or reject any or all proposals, part of proposals, and to waive minor irregularities or variances to specifications contained in proposals which do not make the proposal conditional in nature and minor irregularities in the solicitation process. A minor irregularity shall be a variation from the solicitation that does not affect the price of the contract or does not give a respondent an advantage or benefit not enjoyed by other respondents, does not adversely impact the interests of other firms, or does not affect the fundamental fairness of the solicitation process. The City also reserves the right to reissue a Request for Proposal.

**2.11.2** The City reserves the right to disqualify Proposer during any phase of the competitive solicitation process and terminate for cause any resulting contract upon evidence of collusion with intent to defraud or other illegal practices on the part of the Proposer.

## **2.12 Modification of Services**

**2.12.1** While this contract is for services provided to the department referenced in this RFP, the City may require similar work for other City departments. Successful Proposer agrees to take on such work unless such work would not be considered reasonable or become an undue burden to the Successful Proposer.

**2.12.2** The City reserves the right to delete any portion of the work at any time without cause, and if such right is exercised by the City, the total fee shall be reduced in the same ratio as the estimated cost of the work deleted bears to the estimated cost of the work originally planned. If work has already been accomplished and approved by the City on any portion of a contract resulting from this RFP, the Successful Proposer shall be paid for the work completed on the basis of the estimated percentage of completion of such portion to the total project cost.

**2.12.3** The City may require additional items or services of a similar nature, but not specifically listed in the contract. The Successful Proposer agrees to provide such items or services and shall provide the City prices on such additional items or services. If the price(s) offered are not acceptable to the City, and the situation cannot be resolved to the satisfaction of the City, the City reserves the right to procure those items or services from other vendors, or to cancel the contract upon giving the Successful Proposer thirty (30) days' written notice.

**2.12.4** If the Successful Proposer and the City agree on modifications or revisions to the task elements, after the City has approved work to begin on a particular task or project, and a budget has been established for that task or project, the Successful Proposer will submit a revised budget to the City for approval prior to proceeding with the work.

**2.13 Non-Exclusive Contract**

Proposer agrees and understands that the contract shall not be construed as an exclusive arrangement and further agrees that the City may, at any time, secure similar or identical services from another vendor at the City's sole option.

**2.14 Sample Contract Agreement**

A sample of the formal agreement template, which may be required to be executed by the awarded vendor can be found at our website: <https://www.fortlauderdale.gov/home/showdocument?id=1212>

**2.15 Responsiveness**

In order to be considered responsive to the solicitation, the firm's proposal shall fully conform in all material respects to the solicitation and all its requirements, including all form and substance.

**2.16 Responsibility**

In order to be considered as a responsible firm, firm shall be fully capable to meet all of the requirements of the solicitation and subsequent contract, must possess the full capability, including financial and technical, to perform as contractually required, and must be able to fully document the ability to provide good faith performance.

**2.17 Minimum Qualifications**

Proposers shall be in the business of Project 25 (P25) radio communications and telecommunications equipment and must possess sufficient financial support, equipment, and organization to ensure that it can satisfactorily perform the services if awarded a Contract. Proposers must demonstrate that they, or the key staff assigned to the project, have successfully provided services with similar magnitude to those specified in the scope of services to at least one entity similar in size and complexity to the City of Fort Lauderdale or can demonstrate they have the experience with large scale private sector clients and the managerial and financial ability to successfully perform the work.

Proposers shall satisfy each of the following requirements cited below. Failure to do so may result in the proposal being deemed non-responsive.

**2.17.1** Proposer or principals shall have relevant experience in radio communications and telecommunications equipment. Project manager assigned to the work must have experience in successful implementation of a P25 700/800 MHz Digital Simulcast Trunked radio network and have served as project manager on similar projects.

**2.17.2** Before awarding a contract, the City reserves the right to require that a Proposer submit such evidence of qualifications as the City may deem necessary. Further, the City may consider any evidence of the financial, technical, and other qualifications and abilities of a firm or principals, including previous experiences of same with the City and performance evaluation for services, in making the award in the best interest of the City.

**2.17.3** Firm or principals shall have no record of judgments, pending lawsuits against the City or criminal activities involving moral turpitude and not have any conflicts of interest that have not been waived by the City Commission.

**2.17.4** Neither firm nor any principal, officer, or stockholder shall be in arrears or in default of any debt or contract involving the City, (as a party to a contract, or otherwise); nor have failed to perform faithfully on any previous contract with the City.

## **2.18 Lobbying Activities**

ALL CONTRACTORS PLEASE NOTE: Any contractor submitting a response to this solicitation must comply, if applicable, with City of Fort Lauderdale Ordinance No. C-11-42 & Resolution No. 07-101, Lobbying Activities. Copies of Ordinance No. C-11-42 and Resolution No. 07-101 may be obtained from the City Clerk's Office on the 4th Floor of One East Broward Boulevard, Suite 444, Fort Lauderdale, Florida. The ordinance may also be viewed on the City's website at:  
<http://www.fortlauderdale.gov/home/showdocument?id=6036>.

## **2.19 Local Business Preference – N/A**

## **2.20 Disadvantaged Business Enterprise Preference – N/A**

## **2.21 Protest Procedure**

**2.21.1** Any Proposer who is not recommended for award of a contract and who alleges a failure by the city to follow the city's procurement ordinance or any applicable law, may follow the protest procedure as found in the city's procurement ordinance within five (5) days after a notice of intent to award is posted on the city's web site at the following link.

<https://www.fortlauderdale.gov/government/departments-a-h/finance/procurement-services/notices-of-intent-to-award>

**2.21.2** The complete protest ordinance may be found on the city's web site at the following link:

[https://library.municode.com/fl/fort lauderdale/codes/code of ordinances?nodeId=COOR CH2 AD ARTVFI DIV2PR S2-182DIREPRAWINAW](https://library.municode.com/fl/fort%20lauderdale/codes/code%20of%20ordinances?nodeId=COOR_CH2_AD_ARTVFI_DIV2PR_S2-182DIREPRAWINAW)

## **2.22 Public Entity Crimes**

Proposer, by submitting a proposal, certifies that neither the Proposer nor any of the Proposer's principals has been placed on the convicted vendor list as defined in Section 287.133, Florida Statutes (2018), as may be amended or revised. A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, sub-contractor, or consultant under a contract with any public

entity; and may not transact business with any public entity in excess of the threshold amount provided in s. 287.017 for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted vendor list.

## **2.23 Subcontractors**

**2.23.1** If the Contractor proposes to use subcontractors in the course of providing these services to the City, this information shall be a part of the bid/proposal response. Such information shall be subject to review, acceptance, and approval of the City, prior to any contract award. The City reserves the right to approve or disapprove of any subcontractor candidate in its best interest and to require Contractor to replace subcontractor with one that meets City approval.

**2.23.2** Contractor shall ensure that all of Contractor's subcontractors perform in accordance with the terms and conditions of this Contract. Contractor shall be fully responsible for all of Contractor's subcontractors' performance, and liable for any of Contractor's subcontractors' non-performance and all of Contractor's subcontractors' acts and omissions. Contractor shall defend, at Contractor's expense, counsel being subject to the City's approval or disapproval, and indemnify and hold harmless the City and the City's officers, employees, and agents from and against any claim, lawsuit, third-party action, or judgment, including any award of attorney fees and any award of costs, by or in favor of any Contractor's subcontractors for payment for work performed for the City.

**2.23.3** Contractor shall require all its subcontractors to provide the required insurance coverage as well as any other coverage that the contractor may consider necessary, and any deficiency in the coverage or policy limits of said subcontractors will be the sole responsibility of the contractor.

## **2.24 Proposal Security**

**2.24.1** A proposal security payable to the City of Fort Lauderdale shall be submitted with the proposal response in the amount of five percent (5%) of the total proposed amount. A proposal security can be in the form of a bid/proposal bond or cashier's check. Proposal security will be returned to the unsuccessful contractor as soon as practicable after opening of proposals. Proposal security will be returned to the successful Proposer after acceptance of the Payment and Performance Bond, if required; acceptance of insurance coverage, if required; and full execution of contract documents, if required; or other conditions as stated in Special Conditions or elsewhere in the RFP.

**2.24.2** The Proposer shall deliver the original, signed and sealed bid/proposal bond within five (5) business days from the solicitation end date, or it will be determined as non-responsive. A bid/proposal security in the form of a cashier's check must be an original document and must be submitted at time of the bid/proposal due date. If choosing the cashier's check method, plan in advance to send via United States Postal Service or air freight carrier to ensure cashier's check arrives on or before bid opening/proposal closing deadline.

**A.** Deliver via United States Postal Service or air freight carrier to City of Fort Lauderdale, Procurement Services Division, 101 NE 3rd Avenue, Suite 1650, Fort Lauderdale, FL 33301.

**B.** Include company name, solicitation number and title clearly indicated outside of the envelope.

**2.24.3** Failure of the successful Proposer to execute a contract, provide a Performance Bond, and furnish evidence of appropriate insurance coverage, as provided herein, within thirty (30) days after written notice of award has been given, shall be just cause for the annulment of the award and the forfeiture of the proposal security to the City, which forfeiture shall be considered, not as a penalty, but as liquidation of damages sustained.

## **2.25 Payment and Performance Bond**

- 2.25.1** A Payment Bond in the amount of one hundred percent (100%) of the Contract price would likewise be required. The Payment Bond must be from a surety company authorized to do business in the State of Florida with a rating of A- or better in the most current edition of the A.M. Best Insurance Report. The cost of the Payment Bond shall be the responsibility of the Contractor.
- 2.25.2** A Performance Bond in the amount of one hundred percent (100%) of the Contract Price shall be provided by the Contractor in the event a contract is subsequently awarded through either a sole-source or competitive procurement process. The Performance Bond shall be exercised by the Customer for failure of the Contractor to perform according to the terms of the Contract, i.e., an uncured default condition that results in Contract Cancellation. The Performance Bond shall be in place prior to a notice to proceed. The cost of the Performance Bond shall be the responsibility of the Contractor. The Performance Bond must be executed by a surety company or recognized standing to do business in the State of Florida and having a resident agent.
- 2.25.3** The Proposer must have a Financial Size Categories (FSC) rating of no less than "A-" by the latest edition of Best's Key Rating Guide, or acceptance of insurance company that holds a valid Florida Certificate of Authority issued by the State of Florida, Department of Insurance, and are members of the Florida Guarantee Fund. Acknowledgement and agreement is given by both parties that the amount herein set for the Payment and Performance Bond is not intended to be nor shall be deemed to be in the nature of liquidated damages nor is it intended to limit the liability of the Contractor to the City in the event of a material breach of this Agreement by the Contractor.

## **2.25 Insurance Requirements**

- 2.26.1** As a condition precedent to the effectiveness of this Agreement, during the term of this Agreement and during any renewal or extension term of this Agreement, the Contractor, at its sole expense, shall provide insurance of such types and with such terms and limits as noted below. Providing proof of and maintaining adequate insurance coverage are material obligations of the Contractor. The Contractor shall provide the City a certificate of insurance evidencing such coverage. The Contractor's insurance coverage shall be primary insurance for all applicable policies. The limits of coverage under each policy maintained by the Contractor shall not be interpreted as limiting the Contractor's liability and obligations under this Agreement. All insurance policies shall be through insurers authorized or eligible to write policies in the State of Florida and possess an A.M. Best rating of A-, VII or better, subject to approval by the City's Risk Manager.
- 2.26.2** The coverages, limits, and endorsements required herein protect the interests of the City, and these coverages, limits, and/or endorsements shall in no way be relied upon by the Contractor for assessing the extent or determining appropriate types and limits of coverage to protect the Contractor against any loss exposures, whether as a result of this Agreement or otherwise. The requirements contained herein, as well as the City's review or acknowledgement, are not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by the Contractor under this Agreement.
- 2.26.3** The following insurance policies and coverages are required:

### **Commercial General Liability**

Coverage must be afforded under a Commercial General Liability policy with limits not less than:

- \$1,000,000 each occurrence and \$2,000,000 aggregate for Bodily Injury, Property Damage, and Personal and Advertising Injury
- \$1,000,000 each occurrence and \$2,000,000 aggregate for Products and Completed Operations

Policy must include coverage for contractual liability and independent contractors.

The City, a Florida municipality, its officials, employees, and volunteers are to be included as an additional insured with a CG 20 26 04 13 Additional Insured – Designated Person or Organization Endorsement or similar endorsement providing equal or broader Additional Insured Coverage with respect to liability arising out of activities performed by or on behalf of Contractor. The coverage shall contain no special limitation on the scope of protection afforded to the City, its officials, employees, and volunteers.

#### **Professional Liability**

Coverage must be afforded for Wrongful Acts in an amount not less than \$1,000,000 each claim and \$2,000,000 aggregate.

Contractor must keep the professional liability insurance in force until the third anniversary of expiration or early termination of this Agreement or the third anniversary of acceptance of work by the City, whichever is longer, which obligation shall survive expiration or early termination of this Agreement.

#### **Crane and Rigging Liability**

If contractor is going to be utilizing crane and rigging, coverage must be afforded for any crane operations under the Commercial General or Business Automobile Liability policy as necessary, in line with the limits of the associated policy.

#### **Business Automobile Liability**

Coverage must be afforded for all Owned, Hired, Scheduled, and Non-Owned vehicles for Bodily Injury and Property Damage in an amount not less than \$1,000,000 combined single limit each accident.

If Contractor does not own vehicles, Contractor shall maintain coverage for Hired and Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Liability policy.

#### **Workers' Compensation and Employer's Liability**

Coverage must be afforded per Chapter 440, Florida Statutes. Any person or entity performing work for or on behalf of the City must provide Workers' Compensation insurance. Exceptions and exemptions will be allowed by the City's Risk Manager, if they are in accordance with Florida Statute.

Contractor waives, and Contractor shall ensure that Contractor's insurance carrier waives, all subrogation rights against the City, its officials, employees, and volunteers for all losses or damages. The City requires the policy to be endorsed with WC 00 03 13 Waiver of our Right to Recover from Others or equivalent.

Contractor must be in compliance with all applicable State and federal workers' compensation laws.

### **2.26.4 Insurance Certificate Requirements**

- a. The Contractor shall provide the City with valid Certificates of Insurance (binders are unacceptable) no later than ten (10) days prior to the start of work contemplated in this Agreement.
- b. The Contractor shall provide to the City a Certificate of Insurance having a thirty (30) day notice of cancellation; ten (10) days' notice if cancellation is for nonpayment of premium.
- c. In the event that the insurer is unable to accommodate the cancellation notice requirement, it shall be the responsibility of the Contractor to provide the proper notice. Such notification will be in writing by registered mail, return receipt requested, and addressed to the certificate holder.

- d. In the event the Agreement term or any surviving obligation of the Contractor following expiration or early termination of the Agreement goes beyond the expiration date of the insurance policy, the Contractor shall provide the City with an updated Certificate of Insurance no later than ten (10) days prior to the expiration of the insurance currently in effect. The City reserves the right to suspend the Agreement until this requirement is met.
- e. The Certificate of Insurance shall indicate whether coverage is provided under a claims-made or occurrence form. If any coverage is provided on a claims-made form, the Certificate of Insurance must show a retroactive date, which shall be the effective date of the initial contract or prior.
- f. The City shall be named as an Additional Insured on all liability policies, with the exception of Workers' Compensation.
- g. The City shall be granted a Waiver of Subrogation on the Contractor's Workers' Compensation insurance policy.
- h. The title of the Agreement, Bid/Proposal/Contract number, event dates, or other identifying reference must be listed on the Certificate of Insurance.

The Certificate Holder should read as follows:

City of Fort Lauderdale  
401 SE 21st Street  
Fort Lauderdale, FL 33316

- 2.26.5** The Contractor has the sole responsibility for all insurance premiums and shall be fully and solely responsible for any costs or expenses as a result of a coverage deductible, co-insurance penalty, or self-insured retention; including any loss not covered because of the operation of such deductible, co-insurance penalty, self-insured retention, or coverage exclusion or limitation. Any costs for adding the City as an Additional Insured shall be at the Contractor's expense.
- 2.26.6** If the Contractor's primary insurance policy/policies do not meet the minimum requirements, as set forth in this Agreement, the Contractor may provide evidence of an Umbrella/Excess insurance policy to comply with this requirement.
- 2.26.7** The Contractor's insurance coverage shall be primary insurance as respects to the City, a Florida municipal corporation, its officials, employees, and volunteers. Any insurance or self-insurance maintained by the City, a Florida municipal corporation, its officials, employees, or volunteers shall be non-contributory.
- 2.26.8** Any exclusion or provision in any insurance policy maintained by the Contractor that excludes coverage required in this Agreement shall be deemed unacceptable and shall be considered breach of contract.
- 2.26.9** All required insurance policies must be maintained until the contract work has been accepted by the City, or until this Agreement is terminated, whichever is later. Any lapse in coverage shall be considered breach of contract. In addition, Contractor must provide to the City confirmation of coverage renewal via an updated certificate should any policies expire prior to the expiration of this Agreement. The City reserves the right to review, at any time, coverage forms and limits of Contractor's insurance policies.
- 2.26.10** The Contractor shall provide notice of any and all claims, accidents, and any other occurrences associated with this Agreement shall be provided to the Contractor's insurance company or companies and the City's Risk Management office as soon as practical.
- 2.26.11** It is the Contractor's responsibility to ensure that any and all of the Contractor's independent contractors and subcontractors comply with these insurance requirements. All coverages for

independent contractors and subcontractors shall be subject to all of the applicable requirements stated herein. Any and all deficiencies are the responsibility of the Contractor.

**2.27 Award of Contract**

A Contract (the "Agreement") may be awarded by the City Commission. The City reserves the right to execute or not execute, as applicable, a contract with the Proposer(s) that is determined to be in the City's best interests. The City reserves the right to award a contract to more than one Proposer, at the sole and absolute discretion of the City.

**2.28 Unauthorized Work**

The Successful Proposer(s) shall not begin work until a Contract has been awarded by the City Commission and a notice to proceed has been issued. Proposer(s) agree and understand that the issuance of a Purchase Order and/or Task Order shall be issued and provided to the Successful Proposer(s) following Commission award; however, receipt of a purchase order and/or task order shall not prevent the Successful Proposer(s) from commencing the work once the City Commission has awarded the contract and notice to proceed is issued.

**2.29 Damage to Public or Private Property**

Extreme care shall be taken to safeguard all existing facilities, site amenities, irrigation systems, vehicles, etc. on or around the job site. Damage to public and/or private property shall be the responsibility of the Contractor and shall be repaired and/or replaced at no additional cost to the City.

**2.30 Safety**

The Contractor(s) shall adhere to the Florida Department of Transportation's Uniform manual on Traffic Control for construction and maintenance work zones when working on or near a roadway. It will be the sole responsibility of the Contractor to make themselves and their employees fully aware of these provisions, especially those applicable to safety.

**2.31 Uncontrollable Circumstances ("Force Majeure")**

The City and Contractor will be excused from the performance of their respective obligations under this agreement when and to the extent that their performance is delayed or prevented by any circumstances beyond their control including, fire, flood, explosion, strikes or other labor disputes, act of God or public emergency, war, riot, civil commotion, malicious damage, act or omission of any governmental authority, delay or failure or shortage of any type of transportation, equipment, or service from a public utility needed for their performance, provided that:

**2.31.1** The non-performing party gives the other party prompt written notice describing the particulars of the Force Majeure including, but not limited to, the nature of the occurrence and its expected duration, and continues to furnish timely reports with respect thereto during the period of the Force Majeure;

**2.31.2** The excuse of performance is of no greater scope and of no longer duration than is required by the Force Majeure;

**2.31.3** No obligations of either party that arose before the Force Majeure causing the excuse of performance are excused as a result of the Force Majeure; and

**2.31.4** The non-performing party uses its best efforts to remedy its inability to perform. Notwithstanding the above, performance shall not be excused under this Section for a period in excess of two (2) months, provided that in extenuating circumstances, the City may excuse performance for a longer term. Economic hardship of the Contractor will not constitute Force Majeure. The term of the agreement shall be extended by a period equal to that during which either party's performance is suspended under this Section.



### **2.32 Canadian Companies**

In the event Contractor is a corporation organized under the laws of any province of Canada or is a Canadian federal corporation, the City may enforce in the United States of America or in Canada or in both countries a judgment entered against the Contractor. The Contractor waives any and all defenses to the City's enforcement in Canada, of a judgment entered by a court in the United States of America. All monetary amounts set forth in this Contract are in United States dollars.

### **2.33 News Releases/Publicity**

News releases, publicity releases, or advertisements relating to this contract, or the tasks or projects associated with the project shall not be made without prior City approval.

### **2.34 Manufacturer/Brand/Model Specific Request**

This is a manufacturer/brand/model specification. No substitutions will be allowed.

### **2.35 Contract Period**

The initial contract term shall commence upon date of award by the City and shall expire five (5) years from that date. The City reserves the right to extend the contract for three (3), additional five (5) year terms, providing all terms conditions and specifications remain the same, both parties agree to the extension, and such extension is approved by the City.

In the event services are scheduled to end because of the expiration of this contract, the Contractor shall continue the service upon the request of the City as authorized by the awarding authority. The extension period shall not extend for more than 270 days beyond the expiration date of the existing contract. The Contractor shall be compensated for the service at the rate in effect when this extension clause is invoked by the City.

### **2.36 Cost Adjustments**

Prices quoted shall be firm for the term of the contract.

### **2.37 Service Test Period – N/A**

### **2.38 Contract Coordinator**

The City may designate a Contract Coordinator whose principal duties shall be:

- Liaison with Contractor.
- Coordinate and approve all work under the contract.
- Resolve any disputes.
- Assure consistency and quality of Contractor's performance.
- Schedule and conduct Contractor performance evaluations and document findings.
- Review and approve for payment all invoices for work performed or items delivered.

### **2.39 Contractor Performance Reviews and Ratings**

The City Contract Coordinator may develop a Contractor performance evaluation report. This report shall be used to periodically review and rate the Contractor's performance under the contract with performance rating as follows:

Excellent	Far exceeds requirements.
Good	Exceeds requirements
Fair	Just meets requirements.

Poor	Does not meet all requirements, and contractor is subject to penalty provisions under the contract.
Non-compliance	Either continued poor performance after notice or a performance level that does not meet a significant portion of the requirements. This rating makes the Contractor subject to the default or cancellation for cause provisions of the contract.

The report shall also list all discrepancies found during the review period. The Contractor shall be provided with a copy of the report and may respond in writing if he takes exception to the report or wishes to comment on the report. Contractor performance reviews and subsequent reports will be used in determining the suitability of contract extension.

#### **2.40 Substitution of Personnel**

It is the intention of the City that the Contractor's personnel proposed for the contract will be available for the contract term. In the event the Contractor wishes to substitute personnel, he shall propose personnel of equal or higher qualifications and all replacement personnel are subject to City approval. In the event substitute personnel are not satisfactory to the City and the matter cannot be resolved to the satisfaction of the City, the City reserves the right to cancel the Contract for cause. See Section 5.09 General Conditions.

#### **2.41 Ownership of Work**

The City shall have full ownership and the right to copyright, otherwise limit, reproduce, modify, sell, or use all the work or product produced under this contract without payment of any royalties or fees to the Contractor above the agreed hourly rates and related costs.

#### **2.42 Condition of Trade-In Equipment**

It shall be the sole responsibility of the Contractor to inspect the trade in equipment or to assure himself of their condition. No variation in trade in credit shall be permitted based upon a claim of ignorance. Submission of a bid/proposal will be considered evidence, by the City, that the Contractor has familiarized himself with the condition of the trade in equipment.

The City understands that the condition of the equipment may change prior to shipment or pick up of the equipment by Contractor. No warranty or guarantee of the condition of the equipment is offered or implied. The Contractor agrees to take the equipment, at the trade in credit price bid/proposal, in the condition the equipment is at the time it leaves the City. The only commitment the City makes is to continue the same (whichever is applicable) maintenance service, operational standards, or storage conditions from the time the solicitation is issued until trade in equipment shipment or pick up by Contractor.

#### **2.43 Conditions of Trade-In Shipment and Purchase Payment**

Awarded Contractor is required to make all arrangements for pick-up and freight/transportation and assumes any and all costs related to transporting to their facility.

No City release of trade in equipment will be allowed prior to receipt and acceptance of purchased equipment unless prior arrangements have been made with the City Agency and approved by the Procurement Services Division.

#### **2.44 Verification of Employment Status**

Any Contractor/Consultant assigned to perform responsibilities under its contract with a State agency is required to utilize the US Department of Homeland Security's E-Verify system (per Executive Order Number 11-02) to verify the employment eligibility of: (a) all persons employed during the contract term by the Contractor to perform employment duties within Florida; and (b) all persons (including subcontractors)

assigned by the Contractor to perform work pursuant to the contract with the State agency.

E-VERIFY Affirmation Statement must be completed and submitted with Proposer's response to this RFP.

**2.45 Service Organization Controls**

The Contractor should provide a current SSAE 18, SOC 2, Type I report with their proposal. Awarded Contractor will be required to provide an SSAE 18, SOC 2, Type II report annually during the term of this contract. If the Contractor cannot provide the SSAE 18, SOC 2, Type I report at time of proposal submittal, a current SOC 3 report will be accepted.

**2.46 Warranties of Usage**

Any estimated quantities listed are for information and tabulation purposes only. No warranty or guarantee of quantities needed is given or implied. It is understood that the Contractor will furnish the City's needs as they arise.

**2.47 PCI (Payment Card Industry) Compliance - N/A**

**2.48 Remedies**

Remedies shall be part of any Contract awarded and negotiated with the Successful Vendor.

**2.48.1** The scope of these remedies will become part of a negotiated contract and shall minimally include a graduated set of monetary penalties for unexcused late or delayed performance by the Contractor.

**2.48.2** The project schedule's indicated completion date shall be the basis for assessment of completion remedies.

**2.48.3** Remedies shall be applied as follows:

**2.48.3.1** Unexcused project completion delays of between 1 day and 30 days beyond the Contract's indicated completion date shall be assessed a penalty of \$1,000 per day.

**2.48.3.2** Unexcused completion delays that extend from Day 31 through Day 70 beyond the Contract's indicated completion date shall be assessed with a penalty of \$1,500 per day.

**2.48.3.3** Unexcused completion delays beyond 70 days shall be assessed as a remedy of \$2,000 per day.

**2.48.3.4** Any unexcused project completion delay that exceeds 180 days from the Contract's indicated completion date shall trigger an automatic default of the Contract.

**2.48.3.5** If the Contractor is unable to cure the reason for its completion failure within 45 additional days, the Contract will self-cancel and the Owner will initiate action against the Contractor's performance bond unless some acceptable accommodation is reached by the Contractor with the Owner. During the 45-day default period, remedies will be assessed at the rate of \$3,000 per day. Remedies shall also apply to warranty repair service.

**2.48.3.6** The RFP and its subsequent contract with the Successful Vendor will include a mandatory warranty period where repair services performed in the field will be necessary. This RFP contains response time periods within which the Contractor is required to provide services and materials. A failure to perform on the part of the Contractor to meet its contracted response time requirements shall result in a financial penalty of the scope and amount indicated by this RFP or as modified during contract negotiations.

## **SECTION III - TECHNICAL SPECIFICATIONS/SCOPE OF SERVICES**

### **3.1 Project Requirements**

#### **3.1.1 Project Manager**

**3.1.1.1** City will assign a Project Manager as a single point of contact between the City and the Consultant. Proposer's Project Manager shall be approved by the City or designee prior to assignment.

\*Attach supporting Project Manager documentation for this section.

**3.1.1.2** The City reserves the right to require replacement of the Proposer's Project Manager or its Sub-Contractors at any time during the project should those party's specific workmanship fall below Industry-accepted levels and/or where mandatory project submittals are deficient, are of poor quality or are materially delayed.

#### **3.1.2 Project Team**

**3.1.2.1** The vendor shall provide resumes of all project team members assigned to this project.

\*Attach Project Team Members supporting documentation for this section.

#### **3.1.3 Subcontractors**

**3.1.3.1** It is intended that a single City have total turnkey responsibility for the subsequent City project so as to ensure a successful radio deployment project.

**3.1.3.2** Therefore, any Vendor desiring to use Sub-Contractor (s) must include within their response a list and description of potential, qualified Sub-Contractors).

**3.1.3.3** The City requires documentation and references to ensure the qualification of a proposed Sub-Contractor.

\*Attach Subcontractor Description and Qualifications Documentation: File Attachment

\*Attach Subcontractor Disclosure Form.

#### **3.1.4 Vendor Standards**

**3.1.4.1** The Vendor must have manufactured, delivered and installed at least three projects including radio equipment of comparable technology (700/800 MHz Project-25 TDMA), having comparable size, scope, and with similar features.

**A.** These three radio deployments shall be described with enough information that the City and its Consultant can reasonably determine their project equivalency.

**B.** RFP responses must include a detailed summary of the radio deployment and its significant operational features/components, as well as a current Contractor contact, including name, address, and phone number, title, department, and their responsibility.

\*Attach Information on Project 1.

\*Attach Information on Project 2.

\*Attach Information on Project 3.

**3.1.4.2** Vendors will likewise be required to provide sufficient information necessary to support claims that proposed radio equipment will be functionally and operationally compatible

with public safety 700MHz channels (764-767MHz and 773-776MHz, paired with 794-797MHz and 803-806MHz, respectively) as well as the newly configured 800MHz NPSPAC channel plan as a result of FCC-Ordered 800MHz Rebanding.

- A.** Failure to propose equipment capable of operations on this new spectrum and/or unable to support Project-25 Phase 1 and Phase 2 operations shall be considered non-responsive, and that Vendor's response shall be given no further consideration.

\*Attach Required Documentation.

1. The following standards shall apply, as a minimum, to all equipment, installation methods and materials:
  - a. EIA/TIA-Electronic/Telecommunications Industry Association
  - b. NEC - National Electric Code
  - c. NEMA - National Electrical Manufacturer's Association
  - d. IEEE - Institute of Electrical and Electronic Engineers, Inc.
  - e. FCC - Federal Communications Commission
  - f. FAA - Federal Aviation Administration
  - g. NFPA - National Fire Protection Association
  - h. International Building Codes for State where project is located
  - i. OSHA - Occupational Safety and Health Administration
  - j. (R56) Motorola Standards and Guidelines for Communications Sites or equivalent
  - k. ISO - International Organization for Standards
- B.** A factory authorized service center that is fully staffed and trained to support the proposed radio equipment, and all related features, and accessory equipment, must be located within a 120-minute (2 hour) response time of the City to be considered adequate to satisfy initial installation, configuration, warranty and ongoing maintenance needs.

\*Attach Information about service and support.

1. The Contractor and all envisioned subcontractors, if any, must be able to legally conduct business within the State of Florida.

### **3.1.5 Warranty / Ongoing Maintenance and Support**

**3.1.5.1** Fort Lauderdale requires, at a minimum, a three-year (36-month) comprehensive warranty (maintenance and support) on all infrastructure and end-user equipment required by the new P25 radio system.

- A.** The Warranty term will commence upon Final System Acceptance.
- B.** Ongoing Maintenance and Support will commence upon expiration of the initial three-year comprehensive warranty period and will continue in conjunction with the remainder of the first five (5)-year term and renewable with the remaining three (3) five (5)-year terms.

\*Attach Maintenance Program Description and Timeline

### **3.1.6 Warranty of Performance**

**3.1.6.1** The Vendor acknowledges by submitting a response, that it has carefully reviewed the functional requirements and warrants that the proposed radio features shall function according to equipment specifications, industry standards, and the minimum operative

characteristics specified herein in this RFP.

- 3.1.6.2** Radios certified by the factory shall be tested in the field for all relevant operations based on the features and functions included in the proposal response.

### **3.1.7 Workmanship**

- 3.1.7.1** All proposed workmanship supportive of the RFP must conform to normal and accepted standards for the telecommunications industry.
- 3.1.7.2** All electrical wiring, antennas, mounts, etc. are to be installed by or under the supervision of the Contractor.
- 3.1.7.3** The Contractor must completely remove and properly dispose of residue due to its work, return the vehicles and site to a usable state each day and will be responsible for the cost of repairing all damage caused by the Contractor or its Sub-Contractors during equipment installation.
- 3.1.7.4** The City and/or its Consultant reserves the right to halt any radio equipment or civil installation process due to poor workmanship, housekeeping, scheduling, work interruptions, etc.
- 3.1.7.5** Work halts that are the result of poor workmanship would not relieve the Contractor of their responsibility to conform to the installation time requirements as stated by Contract.

### **3.1.8 Project Timeline**

- 3.1.8.1** The Project's anticipated time frame for completion is no greater than eighteen (18) months from a formal Notice to Proceed.
- 3.1.8.2** The Project will not be deemed completed until all radio equipment has been installed; all training has been completed; receipt of configuration documentation has occurred; and a Certificate of Substantial Completion has been issued by the City for any remaining punch list items.

\*Project Timeline: Summary

\*Project Timeline: Full

### **3.1.9 Materials**

- 3.1.9.1** All equipment, except with the expressly written permission of the City and its Consultant, must be new and unused, meet telecommunications industry standards, and, where applicable, be registered with and approved by the Federal Communications Commission.

- A.** The City and its Consultant reserve the right to reject and require the return, at the Contractor's expense, of any defective components that fail to comply with this RFP or lack FCC type approval.

- B.** Rejections of material for cause would not provide an extension of time to the Contractor in the performance of contracted requirements. Such rejections or returns will neither validate nor invalidate the remainder of any Contract

\*FCC Type Acceptance for Proposed Equipment

- 3.1.9.2** Vendors must indicate any special requirements, i.e., architectural, mechanical, electrical, including electrical grounding, civil or structural modifications, that their equipment may need at either City-owned or non-City-owned locations or in vehicles

that are intended to have new equipment installed.

- A. Costs for these special requirements shall be clearly identified and disclosed in the RFP Response.
- B. Failure to ask questions on special requirements or provide costs can result in a proposal being scored down.

\*List of Special Requirements

### **3.1.10 Parts Availability**

- 3.1.10.1** All proposed radio equipment and antennas and repair parts shall be commercially available for at least fifteen (15) years from the date of Final Acceptance.
- 3.1.10.2** All proposed system and backbone infrastructure components, inclusive of microwave/backhaul equipment and repair parts shall be commercially available for at least fifteen (15) years from the date of Final System Acceptance.

### **3.1.11 Decommissioning of Old Equipment**

- 3.1.11.1** The Contractor must remove the existing system, backhaul, and user subscriber radios as approved by the Customer.
- 3.1.11.2** These costs and related engineering services must be included in the RFP Response Pricing Pages.

### **3.1.12 Training:** The City considers training to be of paramount importance.

- 3.1.12.1** Telecommunicator training shall be more extensive and will involve all designated regular and relief telecommunicators employed by the City at the time of system operational testing.
- 3.1.12.2** Administrative and telecommunicator training shall be completed onsite by the Contractor's personnel.
- 3.1.12.3** The Contractor shall provide administrative training for five (5) Communication Network Managers.
- 3.1.12.4** Software training shall be provided which will enable these personnel to perform functionality/feature changes to fixed site equipment and portables/mobiles, poll the network diagnostics perform traffic and feature usage studies, etc.
- 3.1.12.5** It is the desire of the City and Partner Agencies, Wilton Manors Police Department and Oakland Park Public Works, that such training commences within 60 days upon completion of contract approval by the Fort Lauderdale, FL Board of Commissioners and final execution, and be completed prior to Fort Lauderdale, FL Comprehensive Design Review (CDR) meeting or a suitable time as desired by the City.
- 3.1.12.6** Refresher training shall be offered prior to system cut-over as required by the City. This cost shall be included in the pricing pages. Cost of unused training shall be applied as a credit to the contract after final system acceptance.
- 3.1.12.7** Additionally, the Vendor shall develop and train radio system telecommunicators in the proper operation of radio console and backup control station equipment, as is necessary

to operate the new P25 trunked radio system.

- 3.1.12.8** The Vendor shall coordinate all training, and all sessions must be approved by the City.
  - A.** Vendor shall work with City staff on training room availability on City property first before reserving off campus facilities.
- 3.1.12.9** Administration, maintenance personnel, and network manager follow-up training shall be provided and scheduled no more than sixty (60) days after project completion for the purpose of training reinforcement.
- 3.1.12.10** All training costs, direct or indirect, such as meeting rooms, instructor travel, lodging and transportation, must be included in the final proposed price.
- 3.1.12.11** Additionally, the Vendor must provide comprehensive maintenance training for five (5) people, whereby the City's service/support personnel are qualified in the proper diagnostic, maintenance and repair service skills needed to quickly resolve 700/800MHz communications equipment malfunctions as well as microwave backhaul operational problems.
- 3.1.12.12** The Vendor is required to provide operational and full maintenance training for all City service/support personnel, either on site or at remote factory locations.
- 3.1.12.13** This level of training will be essentially equivalent to the level of service training required by the Vendor for its employed maintenance providers.
- 3.1.12.14** Additionally, the Vendor must develop and train City service/support personnel in those aspects of maintenance necessary to ensure the highest availability and reliability of infrastructure resources.
- 3.1.12.15** The Vendor shall be responsible for all travel related costs associated with vendor and City service/support personnel traveling outside of the service area for training.
- 3.1.12.16** Preventative maintenance training shall encompass all elements of proposed infrastructure equipment, inclusive of base stations, trunking controllers, network switches, microwave backhaul, standby generator equipment, battery plants, battery charging systems, tower light systems, site grounding systems, alarm systems and all other subsystems directly or indirectly related to infrastructure reliability and operations.
- 3.1.12.17** This maintenance alternative should also include a full complement of test equipment to provide the services as required by the maintenance training.

### **3.1.13 Parallel Implementation**

- 3.1.13.1** In developing RFP responses, Vendors must consider that the new land mobile radio system must be installed in parallel with the existing radio system.
- 3.1.13.2** The current system is the Customer's only Public Safety Voice communications system and must operate 24/7/365.
- 3.1.13.3** No interruptions in service of any duration may be allowed without prior approval of the City or their designee.
- 3.1.13.4** Therefore, fully duplicated voice radio systems will coexist for some time
- 3.1.13.5** Remedies similar to those listed in section 2.28 in this RFP apply if radio operation is disrupted beyond scheduled installation services.



### **3.1.14 Acceptance Testing Process**

**3.1.14.1** Acceptance testing procedures will be defined during Contract Negotiations.

**3.1.14.2** These procedures shall test and verify the performance of the hardware/software features; coverage performance on the existing system; reliability and interoperability with neighboring jurisdictions.

- A.** A field certification completed prior to deployment run on the same equipment expected to be used for preventative maintenance during the warranty and maintenance periods of the contract.
- B.** The field certification shall include 100% of radios included in the proposal response. This includes an auto test and auto tune.
  - 1.** Vendor shall provide documentation on each radio upon completion of field certification.
  - 2.** Vendors shall include in their sample test plan attached to this section, the minimum data points they will document as part of this acceptance test plan.
- C.** System Acceptance Test shall minimally include:
  - 1.** A Factory Staging Verification of System and network functionality;
  - 2.** An installed determination of compliance with Industry standards and published RFP requirements of the various equipment elements provided under the Contract;
  - 3.** Functionality of standby power systems;
  - 4.** Functionality and path reliability of microwave link segments and the overall network as a whole;
  - 5.** A successful completion of a set of voice quality and signal level coverage tests of sufficient scope to confirm that the outdoor, in-vehicle and in-building coverage required by the Contract has been achieved;
  - 6.** Completion of a mandatory 30-day reliability burn in absent of any major network failures (i.e., loss of tower site, loss of 25% of network capacity, unreliable m/w functionality, etc.). All major failures will result in a restart of the 30-day reliability burn. Restart of burn in test shall commence within thirty (30) days of failure.
- D.** The Radio Acceptance Test shall minimally encompass:
  - 1.** A bench test of all required functions and features listed in this RFP.
  - 2.** An installed determination of compliance with Industry standards and published RFP requirements of the various radios provided under the Contract;
  - 3.** Functionality of various charging systems;
  - 4.** A successful completion of a set of voice quality and signal level coverage tests of sufficient scope to confirm that the outdoor, in-vehicle and in-building coverage has not been negatively impacted by the new equipment;
  - 5.** Test of accessory equipment

\*Attach Sample Acceptance Test Plan

## **3.2 Identified User Needs and Requirements**

### **3.2.1 General**

- 3.2.1.1 The intent of this RFP is to provide a P25 700/800 MHz Digital Simulcast Trunked Mobile Radio System that shall include multiple tower sites provided with equipment shelters, generators, and additional site hardware, including HVAC to support the Vendor's proposed infrastructure.
- 3.2.1.2 New buildings must accommodate all proposed radio/microwave equipment, battery plants, DC power supplies, and ancillary equipment as necessary.
- 3.2.1.3 The Vendor shall be responsible for conducting tower and foundation or rooftop structural analysis and reinforcement as necessary to any of the existing radio towers in use by the City. This includes structural analysis of any rooms inside existing buildings that may be used to store equipment operating on the roof of the building.
- 3.2.1.4 Vendors are required to propose a comprehensive set of equipment and services that satisfy this RFP's minimum requirements and are encouraged to describe specific areas within their proposal solutions that materially exceed these minimum objectives.
- 3.2.1.5 Since the existing radio system exhibits a lack of reliable portable in-building radio coverage Citywide, the Vendor shall propose new tower sites (in addition to the current locations) as necessary to satisfy the coverage requirements listed within this document.
- 3.2.1.6 Section 3.38 Site Work Requirements, provides for specific workmanship standards for communications facilities that must be met by the Contractor in the course of constructing the system.
- 3.2.1.7 This RFP provides a baseline of technical requirements coupled with functional objectives that must be considered by responding Vendors.
- 3.2.1.8 RFP allows flexibility in the selection of sites and antenna placements by responding Vendors such that their response fully addresses the coverage reliability/audio quality requirements contained in Section 3.13 Coverage Criteria.

### 3.2.2 Current Usage Requirement

- 3.2.2.1 A comprehensive radio system study has been previously undertaken.
- 3.2.2.2 A summarized detail of user needs, and expectations follows:

#### A. Improved Coverage

1. The greatest area of concern communicated during the various user interviews was the lack of coverage being provided to support operations. Mobile and portable radio coverage deficiencies are reported by the users to exist in multiple areas throughout the customer service area defined in section 3.15 Service Area.
2. The Customer desires that the radio system coverage be improved to meet best practices in Public Safety. Vendors can find a complete list of the coverage requirements in Section 3.13 Coverage Criteria.

#### B. Current Operable Aspects

1. City's agencies utilize the existing Land Mobile Radio System for daily communications as defined in **Appendix A: Current Infrastructure**.
2. The dispatch center consoles are identified in **Appendix A: Current Infrastructure**.
3. Interoperability requires sharing radios with neighboring agencies such as mutual aid, city, county, and state agencies.
  - a. An ISSI gateway connects the current P25 system to the dispatch consoles.

This functionality must be maintained by the proposed system.

- b. The subscriber radios used by the end users are identified in **Appendix A: Current Infrastructure**.

**C. Typical Current Radio User Configuration**

1. Most users are equipped with hand-carried portable radios. These radios are operated on-hip, some with an accessory speaker-microphone device installed. While a leather carry case is sometimes used, most simply clip the radio to their belts. This configuration allows good positioning flexibility yet exposes the radio to more physical damage as compared to radios holstered into leather carry cases.
2. Historically, radios have been without a preventative maintenance plan and are repaired on a 'break-fix' basis only.
3. Radio ergonomics are important to users, which is one reason why an electrically shortened antenna configuration for portable radio units has been defined in Section 3.13 Coverage Criteria.
4. Feature available for use by the system already enabled in the radio subscribers includes:
  - a. Emergency Button

**3.2.3 System General Objective**

**3.2.3.1 Talk Paths**

- A. Each of the agencies operable within the current LMR radio system utilize individual talk paths that are used for existing operations.
- B. Additional information may be obtained from **Appendix B: Existing Channel Structure**.
- C. The Vendor shall ensure the P25 radio talk path needs for the system will include triple (3x) those of the existing configuration, plus a net 25% growth/expansion potential of actual in-service talk paths shall be made available.
- D. The current radio configuration's talk-group structure is described in **Appendix B: Existing Channel Structure**.

**3.2.3.2 Call Privacy**

- A. The replacement P25 Land Mobile Radio System shall include voice-layer encryption (described herein).
- B. This provision must offer sufficient flexibility such that the desirable features of monitoring shall be retained while permitting privacy to confidential conversations.
- C. The new network should be software-configurable to support the P25 control channel encryption standard as developed by TIA. ANSI/TIA 102.AABB, P25 Trunking Control Channel Formats, May 2002.
- D. This document defines the format of trunking control channel transmission for P25 systems.
- E. The formats are compatible with the Common Air Interface defined by ANSI/TIA/EIA102.BAAA and both encrypted and non-encrypted formats are defined.
- F. Vendor shall describe the scope and operation of such provisions inherent or planned within their solution that prevents the types of undesired radio monitoring

discussed above.

#### **3.2.3.3 Voice Encryption**

- A.** Digital voice 256-bit Advanced Encryption Standard (AES) encryption, using Advanced Multi-Band Excitation +2 (AMBE+2 or newer) vocoder technology coupled, shall be included in the system. Encryption shall be FIPS 140-3 compliant.
- B.** Three modes of encrypted digital voice operation expected are:
  - 1.** Unit-to-unit, where conversations transacted in an encrypted talk group are secure. These cannot be monitored at a dispatch or control point;
  - 2.** Telecommunicator-to-unit, where conversations between the Customer's dispatch center(s) and field units.
  - 3.** P25 Smartphone Application call transactions (via commercial cellular and FirstNet) to typical field/telecommunicator operations within the system.
- C.** The enhanced P25 System shall provide encrypted transmission functionality so that user radio access delays are equal to those in the clear (non-encrypted) mode to comply with published TIA P25 standard specifications.
- D.** Encrypted transmissions shall not degrade the operation of clear-voice features nor lengthen system access or audio transport delays to other users.
- E.** Encryption shall not impair the range of coverage to any level less than that for typical P25 clear-mode digital performance.

#### **3.2.3.4 End User Equipment**

- A.** Requirements for end-user equipment and training is detailed in Section 3.43 Minimum Subscriber Requirements and Price Considerations.

#### **3.2.3.5 Gateway and ISSI Interfaces**

- A.** The utilization of gateway technology is necessary for the System and provides a useful and important function in the integration of outside trunked and non-trunked radio systems. Interoperability.
- B.** Further requirements are provided in **Appendix I: Interoperability Needs**.
- C.** Base Station Gateway technology shall be provided to interface both analog and digital land mobile radio base stations, on a talkgroup or channel basis, within the P25 trunked solution.
- D.** By so doing, it would then be possible for radio users equipped with P25 radios operable on the System to select, monitor and individually control these various link-radio resources.
- E.** Broadband Gateway functionality shall be provided within the System to permit selected outside third-party Smartphone users equipped with the appropriate application software to communicate with users/agencies via allowed System talkgroups.
- F.** Inter RF Sub-System Interface (ISSI) technology shall be provided which allows P25 core controllers of disparate radio systems to transact communications across systems/technologies.
- G.** Customer requires the implementation of each of these gateway technologies as part of the Vendor's proposed configuration as further described by RFP Section 3.9 Minimum Equipment Requirements.

### **3.2.3.6 Roaming**

- A.** The Vendor's solution shall support future seamless agency user roaming across jurisdictional boundaries via ISSI connections.
- B.** Functionally, a field radio user who initiates and is in communication with telecommunicators or others on a specific talkgroup within a specific P25 radio system must remain affiliated with those parties while driving across the coverage footprint of ISSI-linked P25 systems.
- C.** This roaming feature must operate automatically without the need for field users to physically change systems/talk-groups while traversing across tower site/system coverage zones.
- D.** The Vendor shall describe radio user roaming functionality within its proposal. This description shall include an explanation of the process used by user radios to determine when to transition onto the next system, in conjunction with an explanation of radio availability while this ongoing adjacent-system availability determination is underway. Next systems are defined as the same manufacturer P25 cores with similar or different software/hardware revisions to other manufacturers P25 cores.
- E.** The need for a radio user to manually transition between tower site/system coverage zones within a Vendor's proposed network configuration is unacceptable. A manual approach shall be down-graded during the proposal evaluation.

## **3.3 Infrastructure System Configuration**

### **3.3.1 General**

- 3.3.1.2** The Customer has valid licenses for its current radio and microwave network, as outlined in Appendix E: FCC License.
- 3.3.1.3** The Contractor will be required to undertake necessary FCC license modifications, as required, to accommodate the modernized/expanded System.
- 3.3.1.4** Any frequency modifications and site additions will be coordinated with the Regional Planning Committee.

### **3.3.2 System Configuration**

- 3.3.2.2** The Vendor is required to provide a comprehensive, functional and technical solution for a new P25-compliant System. The new digital radio configuration shall utilize the necessary number of infrastructure sites, as determined by the Vendor, to meet the Customer's expressed coverage requirements as described in the Coverage Criteria section.
- 3.3.2.3** The system must be designed and deployed to utilize both P25 Phase 1 FDMA & P25 Phase 2 TDMA modulation formats.
- 3.3.2.4** In addition, the system shall be capable of a five-channel 700/800MHz NPSPAC analog conventional mutual aid subsystem having the capability of being electronically patched to the system's 700/800MHz talk-groups via conventional base station gateway interfaces with the coverage requirements described the Section 3.13 Coverage Criteria.
- 3.3.2.5** The proposed system shall utilize both existing and Vendor-recommended radio infrastructure sites and shall include, minimally, a primary and secondary/ redundant network controller.
- 3.3.2.6** These network controllers shall be located at sites that provide a geo-redundant

configuration to be mutually agreed between the Vendor and the Customer.

- 3.3.2.7** The Vendor shall indicate a guaranteed level of portable and mobile area coverage and delivered audio quality indicative of their designed solution.
- 3.3.2.8** The Customer recognizes that portable radio coverage to the same degree as required for mobile operations increases system complexity.
- 3.3.2.9** These requirements are outlined in Section 3.13 Coverage Criteria.
- 3.3.2.10** Physical plant modifications to newly-proposed tower sites, rental sites, existing Customer-owned sites, or the dispatch center(s) as necessary to accommodate the Vendor's proposed system configuration shall be the responsibility of the Contractor and must be clearly identified and factored into the Vendor's Cost Proposal.
- 3.3.2.11** The Vendor's failure to disclose physical plant modifications (and cost) is contrary to the Customer's turnkey project requirement and shall result in an unfavorable grade of the Vendor's proposal.
- 3.3.2.12** The Vendor shall provide all pertinent information concerning their equipment, relative to electrical, mechanical, structural and physical space requirements.
- 3.3.2.13** The Vendor must consider enhanced physical security, cybersecurity, and environmental issues in preparing their response.
- 3.3.2.14** It shall be the responsibility of the Contractor to provide a turnkey system and to install Industry-accepted standard electrical grounding systems and lightning protection devices to protect proposed equipment from damage due to electrical transients on antenna systems, power, telephone and/ or control cables including upgrading existing facilities if the Contractor plans on reuse of any of those facilities in their proposal.
- 3.3.2.15** These facilities include all tower and dispatch center sites. This includes the ANSI/TIA/EIA222-H standard.
- 3.3.2.16** Sites determined by the Vendor to be potentially prone to flooding must be so noted in the Technical response.
- 3.3.2.17** Engineering remedies must be based on 100-Year flood plain data.
- 3.3.2.18** Remedies shall include elevated equipment shelters as needed to ensure such new equipment is no less than 24-inches above FEMA-predicted 100-year flood plain levels.
- 3.3.2.19** The delivery and installation of equipment shelters, security systems, standby and emergency power systems, towers, antenna systems, electrical grounding systems, lightning protectors, transmission lines, cable attachment hardware, transmission line shields, tower-to-building cable tray hardware, and all necessary permitting is part of this project and must be furnished by the Vendor.
- 3.3.2.20** All transmit/receive site-related equipment is to be backhaul-connected via digital microwave linkages to be supplied by the Contractor.
- 3.3.2.21** This microwave backhaul layer shall be configured as a monitored hot-standby loop-protected ring(s) that encompass radio tower sites, simulcast control points, dispatch centers, and network controller locations.
- 3.3.2.22** The new microwave back-haul layer shall operate principally at 6 GHz.
- 3.3.2.23** 11 GHz microwave link segments are permissible only for path segments that are less than 4-miles in length.
- 3.3.2.24** The Contractor shall furnish and install all radios, antennas, wiring, wiring hardware,

interface electronics and materials necessary, and at no additional cost than that identified in their Contract, to complete the successful implementation and operation of this system and its related equipment groupings.

### **3.3.3 System Planning and Capacity**

- 3.3.3.1** The system shall support the Customer's current user capacity, three times the current channels/talkgroups plus no less than a 25% growth in net traffic.
- 3.3.3.2** This will include all necessary, hardware, software, and frequencies.
- 3.3.3.3** Please refer to Appendix B: Existing Channel Structure for details.
- 3.3.3.4** The Contractor shall utilize best engineering practices in selecting the system's frequency plan to maximize the effectiveness of channel resources.
- 3.3.3.5** The proposed hardware and frequency plan must ensure that frequencies installed at sites cause no adverse receiver desensitization because of intermodulation products and, further, that the Contractor's frequency plan complies with FCC regulations with respect to co-channel and adjacent-channel interference protection criteria.
- 3.3.3.6** The Vendor's Technical Response must fully describe its frequency engineering process and must include an initial frequency plan for its proposed configuration (since differences between the Vendor's plan and the existing-system's frequency plan are anticipated).
- 3.3.3.7** The Vendor must describe its best-practice approach to the monitoring of noise floor levels/degradation at radio tower sites and the steps it would undertake to identify and resolve interference issues, both internal to the radio system's infrastructure, as well as external.
- 3.3.3.8** The Vendor must provide a contingency plan, should the initial frequency plan not be available for implementation.

\*Attach Contingency Plan

### **3.4 Major System Equipment Groupings**

- 3.4.1** The Vendor shall provide and shall describe, minimally, the following major equipment groupings as contained within the proposed configuration:
  - 3.4.1.1** Radio Network Controller (Primary and Secondary)
  - 3.4.1.2** Auxiliary power generators
  - 3.4.1.3** Interoperability Link Base Stations
  - 3.4.1.4** ISSI Gateways
  - 3.4.1.5** Base Station Gateways
  - 3.4.1.6** Broadband Device Gateways
  - 3.4.1.7** Contractor shall furnish and install all wiring hardware, cable trays, interface electronics, terminal blocks, and materials necessary to complete the successful implementation and operation of this site and its equipment groupings.
  - 3.4.1.8** Infrastructure equipment proposed for the Control Point must meet the minimum requirements specified by Section 3.9 Minimum Equipment Requirements.
  - 3.4.1.9** The Vendor is required to incorporate a dual primary / redundant, geographically

separated network control point design into its proposed infrastructure solution.

- 3.4.1.10** This requirement is mandatory and an RFP Response failing to include such a dual-site redundancy configuration will be considered as being non-responsive.
- 3.4.1.11** This redundancy requirement also applies to the simulcast control point.
- 3.4.1.12** The Vendor shall describe its network controller and simulcast control point redundancy configuration scheme and, if virtualized controller/control point configurations are proposed, the number of such configurations allowable within the proposed solution.
- 3.4.1.13** The Vendor shall describe the method used to automatically transition to such backup configurations and the transitional latency such transitions apply to the radio network, in seconds or milliseconds.
- 3.4.1.14** This description shall include the time necessary for the proposed system to sync to the network controller or the simulcast control point, should a system failure require it.

### **3.4.2 Typical Infrastructure Site Deployment**

- 3.4.2.1** The Contractor is required to supply a turnkey solution to include: all technical support, equipment, material and labor necessary to develop each proposed infrastructure radio site into a functional P25 digital radio facility, fully incorporated.
- 3.4.3** A typical P25 radio infrastructure site equipment shelter shall contain, minimally, the following major equipment groupings:
- 3.4.3.1** 700/800MHz P25 Phase 1/Phase 2 Base Stations
  - 3.4.3.2** Infrastructure equipment proposed for all radio sites must meet or exceed the Characteristics, and 3.13 Minimum Equipment Requirements.
  - 3.4.3.3** GPS-Disciplined Frequency Standard (Redundant)
  - 3.4.3.4** Transmitter Combiner System
  - 3.4.3.5** Transmitter Antenna Systems
  - 3.4.3.6** Receiver Multi-Coupler System
  - 3.4.3.7** Antenna System
  - 3.4.3.8** Remote Site MPLS Microwave Linkage
  - 3.4.3.9** Local Area Network Equipment
  - 3.4.3.10** 700/800MHz Mutual Aid Subsystem
  - 3.4.3.11** Mutual Aid Antenna System
  - 3.4.3.12** Conventional Base Station Gateway
  - 3.4.3.13** Site Alarm Equipment
  - 3.4.3.14** Battery Plant & Charger Systems
  - 3.4.3.15** Standby Generator Transfer Switch
  - 3.4.3.16** Infrastructure equipment proposed for all radio sites must meet or exceed the minimum requirements specified by Sections 3.7 Minimum Operative Characteristics and 3.13 Minimum Equipment Requirements.



### **3.4.4 Tower Site Equipment Configuration**

- 3.4.4.1** The P25 simulcast configuration and conventional radio base stations shall operate from a 48 VDC battery-based power source, sized for no less than 8-hours of uninterrupted operation at 100% duty cycle of proposed equipment.
- 3.4.4.2** The battery system shall utilize sealed, long-life lead-calcium, or similar modern cells and 100% redundant battery charger components rated for telecommunication service.
- 3.4.4.3** An automatic, low voltage disconnect device shall be provided to protect the battery plant from discharge-related damage.
- 3.4.4.4** Electrical power switching/disconnect capability shall exist at all sites such that rectifiers, batteries as well as commercial power sources may be separately isolated in a way each component may be serviced safely.
- 3.4.4.5** This switching/disconnect capability shall be designed and configured such that radio network operation is otherwise unimpaired and uninterrupted during any repair or maintenance cycle.
- 3.4.4.6** Base stations shall be housed in open equipment racks. Racks shall be free standing and incorporate drilled rails to accept standard 19" rack panels. At sites with shared equipment rooms, locking cabinets are required.
- 3.4.4.7** A minimum of six (6), but no more than twelve (12) DC-operated base stations should be located within a single equipment rack.
- 3.4.4.8** Each equipment rack shall incorporate a circuit-breaker power distribution panel incorporating protection for power amplifier, exciter and receiver groupings.
- 3.4.4.9** Individual base station ventilation fan(s), if required, shall be DC powered, thermostatically controlled, internally installed, and shielded.
- 3.4.4.10** Each equipment rack shall be protected by a DC-power circuit breaker, sized for nominal load plus 35% overload factor.
- 3.4.4.11** The primary battery chargers, low-voltage disconnect equipment, and a primary DC circuit breaker panel shall be installed in a freestanding enclosed cabinet unit.
- 3.4.4.12** Likewise, the network's primary/backup controllers and related LAN switch/router devices shall be housed in freestanding equipment racks like those used for repeater stations providing for security of the equipment inside rooms with multiple entities having access.
- 3.4.4.13** Auxiliary tower site electrical loads essential to proper system operation (i.e. tower top preamp, redundant GPS reference oscillators and receiver multi-coupler) shall be interconnected directly to the site's battery system.

### **3.4.5 Infrastructure Functionality**

- 3.4.5.1** The system shall:
  - A.** Utilize the TIA specified P25 Common Air Interface (CAI) digital control channel scheme, in which user-initiated feature requests and talk-group/working channel assignments are processed digitally over site-specific control channels.
  - B.** Ensure the remaining channels at sites shall operate as working channels for digital voice traffic.
  - C.** Utilize an interference-monitored control channel scheme with a level of redundancy that is sufficient to meet the overall requirements and intent of this RFP for a no-

break, life-critical, radio communications system.

- D. Ensure the control channel configuration will automatically rotate to other channels, in sequence, should an abnormal number of carrier hits occur on the pre-set control channel.

### **3.4.6 Failover Scenario Equipment Descriptions**

- 3.4.6.1 The Vendor shall furnish a description of the effect each of the below listed failure modes would have on their proposed P25 system configuration.
- 3.4.6.2 The Vendor shall also describe appropriate mitigation/restoration steps to return the system to full operational capability in response to each of the below listed failure conditions, and the time required to achieve restoration.
- 3.4.6.3 Loss of transmitter(s) operation
- 3.4.6.4 Loss of receiver(s) operation
- 3.4.6.5 Failure of console/audio interface
- 3.4.6.6 Failure of tower site controller
- 3.4.6.7 Commercial power failure
- 3.4.6.8 Site generator failure
- 3.4.6.9 Failure of entire tower site
- 3.4.6.10 Loss of Control Channel(s)
- 3.4.6.11 Loss of Control Point/Prime Site
- 3.4.6.12 Loss of Secondary Control Point/Prime Site
- 3.4.6.13 Loss of Primary Network Controller
- 3.4.6.14 Loss of Redundant Network Controller
- 3.4.6.15 Loss of single/multiple microwave path connectivity
- 3.4.6.16 Loss of ISSI, Base Station or Broadband Gateway Devices

### **3.4.7 Tower Site Antenna Systems**

- 3.4.7.1 The Contractor shall:
  - A. Furnish and install antenna systems designed to meet the coverage requirements and objectives described by Section 3.13 Coverage Criteria.
  - B. Equip all antenna transmission lines with gas tube lightning arrestor devices (Polyphaser or equivalent).
  - C. Ensure all coaxial cable elements used as interconnecting jumpers for outdoor-mounted equipment or indoor transmitter/receiver components are 1/2" Andrew FSJ4-50B or equal.
  - D. Furnish and install hot dip galvanized side mount hardware sufficient to extend the transmitter and receiver antennas a minimum of 60-inches from the nearest tower-structure element.
  - E. Ensure transmission lines are grounded at the antenna, at 200-foot tower intervals, at the topmost part of the tower location, at the midpoint (for all towers greater than 200-feet in height), at the location where the transmission lines enter the cable bridge and at the equipment shelter's transmission line copper entry port.
  - F. Utilize only manufacturer-approved grounding strap kits for the type of transmission

line installed.

- G. Ensure all connecting hardware will be a hanger block type of a size designed for the cable. No tie wraps or electrical tape will be allowed for attaching cables to towers.
- H. Utilize antenna system mounting brackets, components and associated transmission line attachment hardware that are either stainless steel or hot-dipped galvanized steel.

### **3.4.8 Network/Audio Control Scheme**

- 3.4.8.1 The Vendor shall provide detailed descriptions of how the system incorporates high levels of redundancy to ensure continued trunked system operation.
- 3.4.8.2 To provide the highest level of trunked reliability, site/system control schemes shall be IP-based, fully redundant and utilize distributed processor technology to the maximum extent possible.
- 3.4.8.3 Primary/Redundant Network and Site control schemes must include protected, redundant power supply units so that the loss of a single power supply will not interrupt control scheme operations.
- 3.4.8.4 Radio site controllers shall minimally provide the following features:
  - A. Working channel assignment.
  - B. Verification of user identification.
  - C. Assignment of call priority.
  - D. Electronic tracking of call type, caller/called, call time, channel assignment, etc.
  - E. Monitor/control of special system features.
  - F. Ability to disable/enable call access to specific field units.

### **3.4.9 Radio Network Alarm System**

- 3.4.9.1 The Contractor shall furnish and install an automatic alarm system to monitor and alert, at a minimum, operational status (per site) for the following parameters:
  - A. The following Major Alarm Conditions (Defined as a condition that could lead to equipment failure in less than 2 hours).
  - B. Primary Network Controller Failure
  - C. Network Controller Failure
  - D. Simulcast Control Point/Prime Site
  - E. Secondary Simulcast Control Point/Prime Site
  - F. Site Channel Failure
  - G. Channel Failure
  - H. Console/Audio Controller Failure
  - I. ISSI/Base Station Gateway Failure
  - J. Receive Multi-coupler Failure / Tower Top Amplifier
  - K. AC Power Failure
  - L. High Reflected Power - TX Antenna

- M. Battery Charger Failure
- N. Major Generator Failure/Shutdown
- O. Tower Light Failure
- P. Over/Under Temperature Alarm (HVAC failure)
- Q. Low Transmitter Output (each transmitter)
- R. Microwave Link Failure

**3.4.9.2** The Contractor shall furnish and install an automatic alarm system to monitor and alert, at a minimum, operational status (per site) for the following parameters:

- A. The following Minor Alarm Conditions (Defined as a condition that has little, to no risk of leading to equipment failure prior to arrival of technical staff).
  1. Generator Running
  2. Door Alarm
  3. Tripped DC Breakers(s)
  4. Battery Charger Failure, Minor
  5. Low Fuel

**3.4.9.3 Alarm Monitoring**

- A. The use of a software-based alarm network scheme is desired since this would allow for off-site maintenance personnel to interrogate the system in response to agency/user-reported operational deficiencies.
- B. Designated personnel should be able to log in to view alarms remotely.
- C. In addition, the Contractor shall provide:
  1. A summed major/minor alarm indication should be displayed on each alarm system terminal position.
  2. These alarm positions will be located at both network controller locations and the Customer dispatch location.
  3. This alarm indication should appear as both an audible alert and a flag at a conspicuous area on the flat-screen display field.
  4. Determination of specific alarm point conditions shall be obtainable from any dedicated alarm system terminal position.
  5. These alarms must be capable of email or other common messaging alert to the Customer-designated or proper technical personnel.
  6. This solution shall allow for a view of individual component functionality and status involving, at a minimum, base stations, controllers, gateways, charging systems, GPS timing equipment, and other devices essential to the System's operation.
- D. Vendor shall include, as an optional service, Network Operation Center (NOC) monitoring of the system.
- E. The Vendor shall include a description of this service as part of their Response.

**3.4.10 Regional Interoperability**

- 3.4.10.1** Customer has a frequent need to communicate with the neighboring agency systems that may utilize their own P25 system or are a part of a regional P25 radio system including the State of Florida's Statewide Law Enforcement Radio System SLERS.
- 3.4.10.2** Seamless interoperability between the P25 digital voice radio networks is a requirement. The ability to monitor and/or patch to the VHF or UHF systems is also desired.
- 3.4.10.3** The Customer will use subscriber equipment to operate on these neighboring systems directly where possible and through a gateway otherwise.
- 3.4.10.4** In preparation for such regional interoperability, the Customer requires the capabilities outlined in 3.4.11, 3.4.12 and, 3.4.13

#### **3.4.11 ISSI Gateway**

- 3.4.11.1** Vendors shall describe how the proposed System can be interfaced to other regional P25 radio networks now in operation, under development or procurement planning.
- 3.4.11.2** Further, the Vendor shall describe each operational feature that is supported by its proposed ISSI technology.
- 3.4.11.3** A minimum of four (4) ISSI connections with twenty talk paths each shall be provided and installed by the Contractor as part of this project's implementation.
- 3.4.11.4** Vendors shall propose as an option a redundant gateway configuration that will automatically become operable should the primary gateways sustain an electronic/functional failure.
- 3.4.11.5** The Vendor shall describe its planned ISSI redundancy scheme and functionality.

#### **3.4.12 Base Station Gateway**

- 3.4.12.1** It is important for The Customer to be able to include effective radio interoperability linkages to external radio systems operated by federal, state, and other non-public safety agencies in the future.
- 3.4.12.2** The Vendor shall provide:
  - A.** Base Station Gateway devices shall be located at the radio tower sites and allow the interconnection of legacy analog, and other digital radio systems onto the new radio network.
  - B.** The location of the gateways should be part of the vendor's design and located to best serve the interoperability requirements of Customer.
  - C.** The Base Station Gateway shall additionally facilitate appropriate Radio-to-IP interfaces and Four-Wire 'Ear and Mouth' (4W E/M) interfaces that are compatible with new radio system's infrastructure and dispatch center configuration.)
  - D.** The furnished Gateway shall provide the below-listed functionality:
    - 1.** Base Station Gateway shall allow System users to initiate and drop appropriate control link/base stations via talk-group selection on appropriately-programmed System user radios.
    - 2.** Any control station or radio device that is interfaced to the Base Station Gateway shall be steerable to a minimum of sixteen (16) channels or talkgroups.

3. Users shall be able to monitor traffic on the external radio systems, via the Base Station Gateway device.
4. The Customer radio telecommunicators shall have the ability to patch the System's Base Station Gateway channel traffic onto other P25 network talkgroups on an ad-hoc, as-needed basis.

### **3.4.13 Broadband Gateway Solution**

**3.4.13.1** The ubiquitous use of commercial broadband Smartphone devices presents new opportunities for providing P25 radio access to those entities having the need for communications with The Customer's user agencies.

**3.4.13.2** Vendor shall provide:

- A. Furnish and install a Broadband Gateway solution designed to support connectivity with outside cellular device users.
- B. The Broadband Gateway Solution shall be located in conjunction with both the primary and redundant Network Controllers.
- C. Each Gateway shall, as an option, be configured as an "automatic-protected" from whereas if the primary Broadband Gateway at a Network Controller site should fail, the equipment would "self-heal" and automatically transition to the backup, redundant Gateway device.
- D. The Vendor shall identify the required smartphone and licensing for Broadband users. The Vendor shall provide the capability and quantity of users that are included with the design.
  1. The quantities for additional user licensing and increments shall also be estimated at quantity of 3000.
- E. The Broadband Gateway Solution shall support normal P25 voice radio user functionality, inclusive of AES 256-bit encryption.
- F. The Vendor shall provide a functional description of its proposed Broadband Gateway platform or solution, including automatic failure-recovery modes and alarm notification processes.

\*Attach functional description of proposed Broadband Gateway platform or solution

- G. This Broadband Gateway Solution shall be required to interface with FirstNet as well as other commercial cellular carriers utilized by the Customer.

### **3.4.14 System Voice Encryption**

**3.4.14.1** The following components, at a minimum, require system voice encryption:

- A. Each of the network's P25 trunked digital RF channels shall be equipped to support voice encryption using the Advanced Multiband Excitation +2 (AMBE+2) or newer vocoder.
- B. Encrypted mobile and portable units shall be of the same physical size and general configuration as non-encrypted units.
- C. Encrypted units shall be certified for FIPS 140-3 along with any associated equipment to support the functionality.

- D. Accessory equipment shall be compatible with both types of units.
- E. Proposed Phase 1, or Phase 2, radio coverage throughout the area defined in Section 3.13 Coverage Criteria, in the digital encrypted mode, shall be equal to that in the digital clear mode.
- F. The System shall be configured and include both Over-the-Air-Programming (OTAP) and Over-the-Air-Rekeying (OTAR) of user radio equipment as an option. Both of these configurations must include the server to accommodate this functionality.

### **3.4.15 NPSPAC 800MHz Mutual Aid Sub-System**

- 3.4.15.1** If NPSPAC channels are utilized in the proposed system, the Vendor shall describe in detail the configuration of its NPSPAC 800MHz Mutual Aid subsystem that is optimized to provide mobile radio coverage and conforms to the following requirements:
- 3.4.15.2** The mutual aid subsystem will be comprised of five duplex channels that conform to the National Plan, as follows:
  - A. 8CALL90 - 851/806.0125MHz
  - B. 8TAC91 - 851/806.5125MHz
  - C. 8TAC92 - 852/807.0125MHz
  - D. 8TAC93 - 852/807.5125MHz
  - E. 8TAC94 - 853/808.0125MHz
  - F. All channels use CTCSS 156.7Hz
- 3.4.15.3** Contractor shall interconnect these various mutual aid base stations into the P25 trunked radio network via site-located conventional base station gateway devices. Radio tele-communicators shall be capable of monitoring each of these various mutual aid channels.
- 3.4.15.4** The Vendor shall provide a description of its proposed mutual aid subsystem configuration, inclusive of coverage maps depicting VHF, UHF and 700/800 MHz mobile coverage as applicable.
- 3.4.15.5** Further refinement of the mutual aid subsystem is anticipated and may be undertaken by the Customer as part of the project's design review meeting process.

\*Attach any Configuration Diagrams and Coverage Maps

## **3.5 Physical Security**

- 3.5.1** The Vendor shall propose a comprehensive set of physical and cybersecurity safeguards to protect the integrity of the new system.
- 3.5.2** The physical portion of the furnished communications network shall include:
  - 3.5.2.1** Video surveillance of fixed remote infrastructure sites.
  - 3.5.2.2** Storage of the video surveillance footage shall be stored internally to the cameras for a minimum of 90 days.
  - 3.5.2.3** A mechanical keylock set and a keycard system shall be supplied for each of the remote tower site facilities.

- 3.5.3** The Customer currently uses a Honeywell ProWatch for keycard access.
- 3.5.4** The Vendor should provide a standalone Honeywell ProWatch keycard system for access to the proposed shelters. As an option, the Vendor is requested to use the existing Honeywell ProWatch system and provide proper connectivity and the interface. Vendor to determine versions and compatibility with the City's existing infrastructure.

### **3.6 Cybersecurity**

- 3.6.1** The system may contain various entry points that include ISSI/CSSI and Broadband gateway connections to external radio communications facilities operated by others and the accessibility of the radio system to technical and engineering resources via the Internet. Each of these points must be appropriately secured using firewalls, data encryption, and other means to prevent intentional hacking of critical information or installing viruses and malware that could inhibit or disrupt mission-critical communications.
- 3.6.2** The Vendor shall provide, within its Technical Response, a detailed description of the various cybersecurity measures it would employ to protect the proposed new System, both initially and throughout the warranty and post-warranty maintenance periods.
- 3.6.3** The system and all of its associated equipment, connected either directly or indirectly, shall be SOC 2 Compliant where applicable. The Vendor shall supply certifications validating this compliance within their response.

### **3.7 Minimum System Operative Characteristics**

#### **3.7.1 General**

- 3.7.1.1** In this Section, channel usage characteristics for agencies now operable on the Customer's legacy radio system are presented. From this information, the Vendor can better determine the channel capacity (and subsequently the channel plan) needed to satisfy talk-group structure requirements for this project.

#### **3.7.2 Minimum System Performance**

- 3.7.2.1** The Vendor should assume that the current talk-group assignment/usage will be replaced with a P25 digital radio overlay having a similar trunked radio talk-group structure.
  - A.** Appendix B contains a detail of the current talk-group structure now being utilized.
- 3.7.2.2** The Vendor can use this information and other statistics or information to structure capacity studies and related technical considerations necessary to develop a radio frequency channel/capacity plan for the system.
- 3.7.2.3** The minimally-acceptable Quality of Service Objective for the system shall be a call blocking rate of no more than 1%, with the delay for such calls that are queued to be no greater than 0.5 seconds.
- 3.7.2.4** The Vendor shall describe in the response:
  - A.** Typical call setup times for trunked radio calls, which in no case shall exceed 0.5-seconds.
  - B.** Typical audio processing delays, due to vocoding and digital signal processing, within the Vendor's specific radio technology solution. These delays shall be described for Emergency Calls, Group Calls, Patched Calls, ISSI Calls, Base Station Gateway Calls and Broadband Gateway Calls.



- C. The various levels of call transaction priority as assigned to: Emergency Calls; Group Calls; Fleet Calls; Patched Calls; ISSI Calls; Base Station Gateway Call transactions and Broadband Gateway Calls.
- D. How these various call transaction delays can potentially impact site capacity loading, and how does the Vendor mitigate this in the design process.

### **3.8 System Fleet/Talkgroup Requirements**

- 3.8.1** Contractor shall assist the Customer and various user agencies in determining user identification and talk path assignments.
- 3.8.2** Contractor shall program all portable, mobile and control station radios, all System or site controllers and all other equipment to operate on the FCC-licensed operating frequencies and determined talk path profiles.
  - 3.8.2.1** This includes existing equipment that is capable, and may operate on the System, at the time of cutover, supplied by other P25 subscriber manufacturers.
- 3.8.3** Contractor shall prepare and furnish to the Customer "as programmed" records for each control station radio and pager placed on the System.
- 3.8.4** Contractor shall provide training for System/Network Managers sufficient to permit the Customer's prime agencies to add users, create new, or delete obsolete talk paths and to access all other System software-controlled features.
- 3.8.5** Provisions shall be incorporated into the system to allow the Contractor, from its home office, to remotely interrogate the operating system, provide remote technical assistance and install software patches if requested by The Customer.
- 3.8.6** Contractor must provide eight (8) sets of radio and equipment programming software, appropriately equipped laptop/desktop computers, and all other support equipment and special cables necessary to program all control stations and dispatch consoles supplied by the Contractor.

### **3.9 Minimum Infrastructure Equipment Requirements**

#### **3.9.1 General**

- 3.9.1.1** This Section describes minimally-acceptable requirements for fixed-site radio equipment.
- 3.9.2** All radio equipment installed or provided by the Contractor shall be FCC type accepted under Part 90 of the FCC Rules and Regulations. All supplied equipment shall be in current production and shall meet or exceed the requirements of this Section.
- 3.9.3** Base station/repeaters shall support P25 Phase 1 and Phase 2 modulation formats and shall support P25 trunked data technology.

### **3.10 Base/Repeater Stations**

- 3.10.1** All Base/Repeater P25 radios proposed shall:
  - 3.10.1.1** Meet APCO minimum recommendations and EIA/TIA standards for P25 Public Safety digital trunked/conventional radio systems (depending upon application within sites).
  - 3.10.1.2** Furnished equipment must be capable of operation as a combined Phase 1 and Phase 2 infrastructure.

- 3.10.1.3** Be designed for 100% continuous-duty operation at full manufacturer specification.
- 3.10.1.4** In P25 multi-site and simulcast configurations, base stations shall utilize linear RF power amplifiers and function in a linear simulcast mode that minimizes to the greatest extent possible destructive time-delay interference within site coverage-overlap regions and minimizes digital modulation distortion, termed modulation fidelity.
- 3.10.1.5** Modulation fidelity, for this RFP, is a measurement of the degree of closeness that the transmitted modulation matches the ideal theoretical modulation for P25 Phase 2 waveforms.
- 3.10.1.6** Incorporate site monitor and infrastructure alarm systems having the ability to report major/minor infrastructure functionality alarms on multiple dispatch-located alarm console display devices. Additionally, the alarm reporting system shall have the capability of being remotely accessed for the monitoring and remote-interrogation of field/site related alarms, using a laptop configuration from any node within the network.
- 3.10.1.7** Utilize the proposed 48 VDC battery backup subsystem.
- 3.10.1.8** Include a "Fail-over/Fail-Soft" trunking scheme designed to maintain network performance as critical site components fail. System must be fault tolerant with redundant levels of computer hardware/software, as necessary, to maintain trunked operation during equipment failures.
- 3.10.1.9** Support special services, i.e. encrypted voice, data transmission, multiple Computer Aided Dispatch (CAD) system interfaces, Automatic Vehicle Location (AVL) interfaces, audio recording of talk groups, and collection of system operational data.

**3.10.1.10** 700/800MHz P25 Repeater station specifications are as follows:

\*Attach supporting documentation for this section.

**3.10.1.11 General Specifications:**

- A.** Frequency Range: 764-776MHz, 851 to 870MHz
- B.** Number of Frequencies: One transmit; one receive
- C.** Channel Spacing: 25/12.5KHz
- D.** Channel Capacity: 10, minimally
- E.** Input Voltage: 48 VDC operation
- F.** Temperature Range: '-30°C to +60°C
- G.** Humidity: 90 % relative humidity at 50°C (typical)

**3.10.1.12 Transmitter specifications are as follows:**

- A.** Output Impedance: 50 Ohms
- B.** Power Output: 100 watts
- C.** Stability: 0.01 PPM from -30 °C to +60 °C ambient, when referenced to site-based GPS-disciplined frequency standard.
- D.** Emission: 8K30F1W; 8K70D1W; 9K80F1D; 11K2F3E; 9K80F1D, 9K80D7W or comparable Phase 2 Emission
- E.** Modulation Deviation: +/-2.5KHz (12.5KHz), +/- 4KHz (NPSPAC)
- F.** Channel Spacing: 25KHz; 12.5 KHz

- G. Audio Distortion: 2% at 1KHz
- H. Audio Response: Within +1, -3db of 6dB/octave per EIA
- I. Spurious/Harmonic: -65dB

**3.10.1.13 Receiver specifications are as follows:**

- A. Frequency Range: 792-825MHz
- B. Modulation Acceptance: 1KHz off channel
- C. Selectivity: -70dB
- D. Sensitivity: 0.25uv
- E. Intermodulation: -80dB
- F. Spurious/Image: -85dB
- G. Frequency Stability: 0.01-PPM (GPS standard)
- H. Channel Spacing: 12.5KHz
- I. Audio Distortion: 2% at rated audio line level (600-Ohm)
- J. Audio Response: Within +1/-3dB of 6dB/octave per EIA
- K. Duty Cycle (EIA): Receiver 100%

**3.10.1.14 General Specifications** Minimum 800MHz Analog Base/Repeater station specifications:

- A. Frequency Range: 806 to 869MHz
- B. Number of Frequencies: One transmit; one receive
- C. Channel Spacing: 25/12.5KHz
- D. Channel Capacity: 10, minimally
- E. Input Voltage: 48 VDC operation
- F. Operating Temperature: -30°C to +60°C
- G. Humidity: 90 % relative humidity at 50°C (typical)

**3.10.1.15 Transmitter specifications are as follows:**

- A. RF Output Impedance: 50 Ohms
- B. Power Output: 100 watts
- C. Frequency Stability: 0.01 PPM from -30 °C to +60 °C ambient, when referenced to site-based GPS-disciplined frequency standard.
- D. Modulation Deviation: 0 to +/- 5KHz (25KHz), 0 to +/- 4KHz (NPSPAC)
- E. Modulation Type: Analog FM 16K0F3E
- F. Channel Spacing: 25KHz; 12.5 KHz
- G. Audio Distortion: 2% at 1KHz
- H. Audio Response: Within +1, -3db of 6dB/octave per EIA
- I. Spurious/Harmonic: -65dB

**3.10.1.16 Receiver specifications are as follows:**

- A. Frequency Range: 806-825MHz
- B. Modulation Acceptance: 1KHz off channel
- C. Selectivity: -70dB (-80db for 25KHz channel)
- D. Sensitivity: 0.25uv 5.2.10.3.5. Intermodulation: -80dB
- E. Spurious/Image: -85dB
- F. Frequency Stability: 0.01-PPM 5.2.10.3.8. Channel Spacing: 12.5KHz
- G. Audio Distortion: 2% at rated audio line level (600-Ohm)
- H. Audio Response: Within +1/-3dB of 6dB/octave per EIA
- I. Duty Cycle (EIA): Receiver 100%

### **3.11 Fixed Microwave Equipment Requirements**

- 3.11.1** The microwave network shall adhere to The Customer's network management plan as defined in Appendix G: Network Management Requirements.
- 3.11.2** Digital voice/data technology shall be used to minimize audio-phase delays and/or incompatibility of audio levels within the proposed network solution.
- 3.11.3** Where VoIP techniques are used to interconnect infrastructure sites, in lieu of traditional PCM multiplex channel schemes, a robust means shall be provided thereby assuring that the highest priority possible is given to voice packet delivery.
- 3.11.4** Redundant transmit, receive, and baseband equipment for each site, configured for automatic hot standby operation, shall be provided by the Vendor. This redundant equipment will automatically switch to the hot standby component(s) upon failure of the primary equipment.
- 3.11.5** A Microwave Alarm System shall be provided by the Vendor to monitor microwave site functions and to provide alarm status of abnormal operational parameters of equipment associated with the microwave system. Microwave major alarms shall be integrated within the radio alarm packaged supplied by the Vendor.
- 3.11.6** An orderwire channel with 4 wire E&M output and individual site handsets will be provided to link all microwave locations for testing and troubleshooting.
- 3.11.7** A separate 48 VDC microwave standby battery system will be provided and sized for 48-hours of continuous microwave equipment operation at each infrastructure site.
  - 3.11.7.1** An automatic low-voltage disconnect system will be employed to protect the battery plant from deep-cycle discharge damage.
- 3.11.8** Microwave system availability shall be no less than 99.999%. 6GHz path segments longer than 12-miles must utilize space-diversity. The system shall be loop-configured with hitless directional switching.
- 3.11.9** Microwave antennas, radomes, and antenna mounts supplied and installed will be capable of surviving wind speeds of up to 150mph and maintaining reliable operations during sustained storm force winds of up to 125mph.
- 3.11.10** Each furnished antenna system will be equipped with dual stiff arms/ruggedized mounts to limit antenna vibration and flexing during high wind events.

\*Attach supporting documentation for this section.

**3.11.11** Minimum operational service parameters of each microwave link are as follows:

**3.11.11.1** Unfaded Bit Error Rate (BER): Not Less Than 10<sup>-10</sup>

**3.11.11.2** Calculated RF Link Fade Margin: Not Less Than 40dB

**3.11.11.3** Link Outage Level: To coincide with 10<sup>-3</sup> BER, to occur at a signal level not less than 3db in excess of the calculated RF link fade margin.

**3.11.12** Microwave system shall incorporate a quadrature amplitude modulated adaptive protocol that automatically adjusts protocol to maintain critical communications during abnormally faded conditions.

**3.11.12.1** This technique is intended to extend the microwave system's functionality to beyond that of the normal 40db flat fade margin.

**3.11.13** Vendors may use high-power amplifiers (i.e., 36dBm to 39dBm), as may be necessary, to achieve the best balance between antenna size versus the 40db flat fade margin requirement.

**3.11.14** In no case should antennas larger than 8ft. in diameter be considered for this project unless high-performance antennas are required due to interference mitigation requirements as noted by the Frequency Coordinator.

**3.11.15** The Contractor shall be responsible for the engineering and filing costs for microwave system frequency coordination, prior coordination notification, FCC license application preparation and submittal of necessary microwave licensing documents on behalf of the Customer.

### **3.12 Additional Submittal Requirements:**

**3.12.1** The Vendor is not required to present a detailed fixed path design of the proposed microwave subsystem for the purpose of the Technical response, as such work is dependent upon exact antenna placements that will be resolved by the Vendor during the various design review meetings to be held prior to system construction.

**3.12.2** The Vendor shall provide the following information as part of the Technical proposal:

**3.12.2.1** Technical specification literature for its proposed microwave radio, antenna and related equipment.

\*Attach supporting documentation for this section.

**3.12.2.2** A sample path profile analysis indicative of the scope to be used during the actual microwave analysis process.

**A.** The sample analysis shall include all of the tower sites that encompass the Vendor's proposed radio infrastructure configuration.

\*Attach supporting documentation for this section.

**3.12.2.3** A sample test and alignment verification process, to be used during the commissioning of the new microwave subsystem.

\*Attach supporting documentation for this section.

**3.12.2.4** The Vendor may reuse/reconfigure the Customer's existing microwave equipment as this equipment if it is supported and is expected to have operational value within the new P25 System.

**3.12.2.5** The Vendor will provide the bandwidth provided by the proposed microwave system.

- A. This information should include the amount of bandwidth for all portions of the radio system and any other equipment/systems integrated in the proposed network.
- B. It should also include any additional bandwidth that could be used by the Customer and the interface at each site for the additional bandwidth.

\*Attach supporting documentation for this section.

### **3.13 Coverage Criteria**

#### **3.13.1 General**

- 3.13.1.1** The System's P25 digital trunked radio network shall be designed to support portable hand-carried radio subscriber equipment on the hip with a speaker microphone, operated on-street, at physical locations throughout the identified service area.
- 3.13.1.2** The Vendor must fully determine and guarantee the coverage predicted for the proposed solution, as per the functional and operational requirements of this RFP.
- 3.13.1.3** The Vendor shall provide within the response a sample Coverage Test and Acceptance Plan that encompasses the elements described as follows.

#### **3.13.2 Coverage parameters**

- 3.13.2.1** The Vendor must consider the following operating parameters in the development of their coverage guarantee:
  - A. Shoulder/microphone units without antennas will be used with portable radio units in most instances and shall be the normal configuration considered for coverage design.
  - B. Body and obstruction losses must therefore be considered in the proposed network design for both talk-in/talk-out coverage analyses.
  - C. Flexible, quarter wavelength antennas shall be required for portable units. Coaxial-skirt type or  $\frac{1}{2}$  wave antennas are not acceptable due to size and other mechanical/ergonomic limitations.
    - 1. User operations and portable subscriber configurations do not relieve the vendor of system design and testing requirements to a  $\frac{1}{4}$  wave portable antenna.
  - D. Mobile unit configurations shall utilize low profile 3db gain 700/800MHz antennas. These antennas shall be located on the vehicle's trunk, having an average base level height of 3.5 feet.
  - E. All Loss factors for portable loss factors and testing will be clearly identified in contractor's response.
    - 1. Failure to provide these loss factors will result in a lower score or consideration of the proposal being non-responsive.

#### **3.13.3 Noise Floor & Interference**

- 3.13.3.1** It is the intent and requirement that the system shall be designed such that the indicated coverage goals and requirements herein be met irrespective of external noise and interference.
  - A. It is essential that the Contractor undertake whatever measurements, surveys, and studies as necessary such that the state of the noise and interference environment is quantified prior to the system's final design.

- ### 3.14 Intermodulation Study Requirement

- ### 3.15 Service Area

- CAM #25-0889  
Exhibit 1  
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including Wilton Manors and Oakland Park, and one-mile outside of Fort Lauderdale at Delivered Audio Quality (DAQ) 3.4 and -95 dBm.

**3.15.2** The system shall support mobile radio user coverage throughout the City and two miles outside of the City at 97% coverage at Delivered Audio Quality (DAQ) 4.0.

**3.15.2.1** Portable radio coverage within buildings is required.

**3.15.2.2** The system shall support no less than 95% coverage/DAQ-3.4 within residential structures and Law/Fire/EMS facilities and municipal buildings throughout all areas of the Customer.

**3.15.2.3** Residential structure is described as a **single-story** house based on local building codes with a minimum typical loss of 8 db.

**3.15.2.4** Structures greater than one-story shall require coverage on all floors above grade.

**3.15.2.5** In addition, portable radio coverage to this same or greater reliability and audio quality is required within a specific set of critical building locations and critical areas, as listed in **Appendix D** Critical Building/Area List.

**3.15.3** The system shall support no less than 95% coverage within critical buildings and other type 20dB structures within the city limits of the following cities plus one mile outside the border and along the corridor of major roads with a one-half mile boundary on either side.

**3.15.4** The vendor should put an emphasis on providing reliable coverage in all schools regardless of the loss factor for each school.

**3.15.5** The vendor will guarantee coverage in all schools at no less than 95% coverage at 25db.

**3.16** All references to coverage reliability in this RFP refer to statistical area reliability.

**3.16.1** For example, the phrase "95% coverage" indicates that the total area described shall exhibit at least 95% statistical probability that coverage areas, if tested, would be found to support electrical performance which equals or exceeds that minimum signal level necessary for that Contracted delivered audio quality.

**3.16.2** Use of cellular capabilities will not be permitted in order to successfully pass a coverage grid. Only LMR coverage will be permitted.

**3.16.3** It will not be acceptable to provide a coverage guarantee which includes a relatively large number of failed points within any single vicinity, while still meeting the overall goal of 95% coverage.

**3.16.4** It will not be acceptable to have a failure of six or more contiguous test points/grids.

### **3.17 Propagation Analysis**

**3.17.1** The Vendor shall provide written descriptions of the processes and propagation models used to calculate proposed area coverage objectives.

**3.17.2** Coverage maps and other pertinent calculations must be submitted with the following minimum information clearly defined for each map or submittal:

**3.17.2.1** Transmitter site power output.

**3.17.2.2** Antenna gain and type (Include transmission line losses).

**3.17.2.3** Effective signal level necessary, at both infrastructure and user radio antenna ports, to produce DAQ 3.4 delivered audio quality in the typical land mobile radio environment (inclusive of noise floor degradation, if any).



- 3.17.2.4** Antenna height.
- 3.17.2.5** Portable unit effective radiated power.
- 3.17.2.6** Portable unit effective receiver sensitivity.
- 3.17.2.7** Transmitter site talk out range, individual sites as well as composite coverage.
- 3.17.2.8** Portable unit talk-in range, individual sites as well as composite coverage.
- 3.17.2.9** A statement defining the percentage of land area covered shall be provided for each submitted map configuration.
- 3.17.2.10** Okamura modeling should be used for propagation projection.

### **3.18 Radio System Coverage Acceptance Criteria**

- 3.18.1** Verification of the installed system's coverage is a component part of the Test and Acceptance criteria described in Section 3.45 Phased Implementation.
- 3.18.2** Vehicular coverage testing (performed within a road vehicle during terrestrial coverage testing or watercraft when performing river or lake coverage testing) shall be done with computer-controlled test equipment.
  - 3.18.2.1** This equipment shall automatically record the position of the test vehicle (by means of GPS positioning) at the time of a reading and records the signal strength of at least 200 signal samples over a 40-wavelength period for each reading taken within a test grid. Signal strength measurements shall be made continuously along the drive route.
- 3.18.3** Test grid sizes within all city limits shall utilize grid sizes no greater than 1320 feet x 1320 feet (1/4 mile). Grids sizes within rural areas shall be 2640 feet x 2640 feet (1/2-mile).
- 3.18.4** A minimum number of accessible grids, sufficient to provide statistical accuracy of results in the order of 1.25db or less, shall be tested.
- 3.18.5** The Customer and the Contractor shall mutually determine the size/location of grids and a suitable drive route that encompasses the entirety of accessible grids. This testing shall apply to any area capable of being traversed by a 4x4 vehicle. Inaccessible grids will be excluded from the coverage result calculations.
- 3.18.6** Field strength test results obtained throughout the coverage area, in accordance with minimally required reliability percentages, shall be of sufficient level to produce a Delivered Audio Quality (DAQ) rating of 3.4 or higher where required (see below - Figure 1 Chart) throughout the predicted service area to be considered passing.

#### **3.18.6.1 Figure 1 Chart**

DAQ Rating	Explanation
5	Reception is very clear, and the message is perfectly readable. No background noise is present, and every word is understood.
4	Reception is clear, but with slight background noise. Message is readable, and every word is understood.
3.4	Reception is clear, but with slight background noise. Message is readable and understood with few/occasional missing syllables.

3	Background noise is evident. Message is readable and understood even with missing syllables.
2	Background noise is prevalent. Message is readable with difficulty and requires repetition.
1	Evidence that transmission is being made. Voice message is barely discernible, and no words are understood. Unusable.
0	No transmission is heard. No activity on the channel is evident.
Notes	CPC is set to the midpoint of the Range. SINAD values are NOT to be used for system performance assessment.

- 3.18.7** Mobile radio signal strength measurements shall be made from either a terrestrial (land) vehicle moving at approximately 35 mph, or a watercraft (river/lake/ocean/waterway) vehicle traveling at approximately 20-knots.
- 3.18.8** The device used to measure field intensity shall be stable and have a dynamic range suitable for the conditions under test.
- 3.18.9** Prior to the execution of these test activities, all test equipment and data gathering equipment to be used shall be fully certified by an independent testing laboratory having calibration tools traceable to the National Institute of Standards and Technology. These certification documents shall be presented to the Customer's project staff prior to coverage testing.
- 3.18.10** The test output shall be retained by a laptop computer or an equivalent computer device. The Contractor shall submit a written and/ or graphical report containing an analysis of the test results to the Customer daily, and a formal report at the end of the test.
- 3.18.11** The Contractor's analysis shall include maps of the coverage area divided into grids, with the test results for drive tests displayed in each grid on a separate map.
- 3.18.12** All test data, in its raw form, shall be made available for independent inspection.
- 3.18.13** The Customer reserves the right to reject any instrumentation or procedures.
- 3.18.14** During these tests, the system's P25 transmitter(s) output power shall be monitored by the Customer and no adjustments shall be made to the base station(s), antenna system(s), transmitter(s), portable/mobile radio units or test instrumentation after appropriate calibration of all involved equipment.
- 3.18.15** Optimization data for the infrastructure will be provided to the Customer prior to the commencement of these tests.
- 3.18.15.1** Optimization data will include at a minimum, antenna sweeps, TX power measured at the base station output and the combiner output, receive sensitivity, and any other data deemed necessary to prove the system is optimized and ready for testing.
- 3.18.16** Should The Customer reject any portion of the test, the Contractor shall correct the errors and omissions as defined by the Customer at no additional cost.

### **3.19 Audio Quality Test Process**

- 3.19.1** In addition to the signal level collection method described above, the Contractor shall be required to conduct a voice audio quality test of the system.

- 3.19.2** The P25 digital portion of the new radio system shall encompass an automated BER Test for both in-bound and outbound transmission pathways.
- 3.19.3** The Contractor shall, as part of its Acceptance Test, produce a BER Test Report that correlates actual BER to predicted results.
- 3.19.4** Of those accessible grids evaluated because of the field-testing process, no fewer than 95% shall achieve a BER that is directly correlated to DAQ-3.4, as defined by EIA/TIA TSB-88D, as depicted by Figure 1.
- 3.19.4.1** A call transmission failure in either direction shall be considered a failure of the tested grid.
- 3.19.5** The BER test shall encompass the same grid structure as devised for the signal level test process.
- 3.19.6** A manually-conducted voice quality test simulating in-residence portable radio operations shall also be conducted.
- 3.19.6.1** In conducting portable voice quality testing, vehicular-mounted mobile radios and proposed portable radios will be utilized in Contractor-equipped vehicles, but with appropriate transmission line attenuators installed to replicate outdoor portable radio operations.
- 3.19.6.2** The Customer's service area shall be comprised of test grids equal to those used in BER testing.
- 3.19.6.3** Test calls for each grid will be transacted, as required vehicle-to-base/console and base/console-to-vehicle or portable-to-base/console and base/console-to-portable, with the results for each call segment scored as per TSB-88D recommendations.
- 3.19.6.4** No fewer than 97% of the total number of grids tested in this manner shall be ranked as achieving DAQ-3.4 audio quality, or higher.
- 3.19.6.5** A failure in either call direction shall be considered as a failure of the tested grid.
- 3.19.7** The following voiced audio quality verification process shall apply:
- 3.19.7.1** The portable radio voice quality testing shall be performed using a minimum of ten phonetically balanced phrases, to be supplied by the Contractor.
- 3.19.7.2** A successful test measurement shall be one which requires no repetition, and as defined in Figure 1 to understand the spoken phrase and with a DAQ-3.4.
- 3.19.7.3** A successfully tested grid is defined as one in which communications from a dispatch console to a field radio unit, as well as for the reverse path, are not less than DAQ 3.4 as described above.
- 3.19.8** The Customer shall designate the test team(s) to participate in coverage testing.
- 3.19.9** All test vehicles shall be provided by the Contractor and be off-road capable.
- 3.19.9.1** Where boats are required, these shall be provided by the Customer.
- 3.19.10** Testing shall commence daily at 8:00 AM and will cease at 4:30 PM.
- 3.19.11** At least three teams will conduct the tests in the interest of timely completion.
- 3.19.12** Failure of Contractor test equipment shall not be considered as an acceptable reason for a Contract time extension.
- 3.19.13** The Customer will not pay for retesting caused by delays or equipment failures.
- 3.19.14** Testing will proceed through weekends and during peak foliage until concluded.

**3.19.15** Final System Acceptance shall not be achieved until the constructed system successfully equals or exceeds the coverage performance guaranteed by the Contract.

### **3.20 Critical Building Coverage Test Process**

**3.20.1** Coverage shall be no less than 95% inside of the listing of representative buildings contained in Appendix D Critical Building/Area List.

**3.20.1.1** It is desired that most of these building structures shall be supported by the proposed fixed infrastructure (tower sites).

**3.20.1.2** However, the Vendor shall exercise good judgment in balancing the proliferation of costly infrastructure tower sites with the number of building sites.

**3.20.1.3** The use of building amplifier systems, while necessary in some instances, shall likewise be minimized to the most practical and fiscally responsible extent possible.

**3.20.2** The Vendor shall specifically identify those buildings from that list that are likely to require building amplifier systems in their proposal.

**3.20.3** If any of these representative buildings fail to demonstrate 95% reliable coverage (DAQ 3.4 Audio Quality), the following procedure will be followed:

**3.20.3.1** The Vendor must propose a detailed testing method showing how the failed building will be tested to verify that it does or does not meet the in-building coverage criteria. Testing shall not be limited to the ground floor.

**3.20.3.2** If System radio coverage gaps are identified versus Vendor as-proposed coverage models, the Contractor will be responsible for modifying the System, at no additional cost to the Customer, to achieve the required coverage within the failed building.

**3.20.3.3** Remediation may include any or all the following approaches, as mutually agreed by the City and its Consultant:

**A.** Bi-directional amplifier (BDA) system installed in the building.

**B.** Passive repeater systems installed in the building.

**C.** Satellite receiver systems in or near the building.

**D.** Modifying/adjusting repeater site antenna systems.

**3.20.3.4** The determination to utilize a BDA within any structure shall be engineered as a part of a comprehensive system design.

**A.** The Contractor shall not install any BDA system in structures that shall introduce interference into the overall P25 System operation.

**3.20.3.5** If any changes are made to the fixed sites (such as re-orienting antenna patterns) in order to resolve building coverage failures, then a complete re-test of coverage shall be required at no additional cost to the Customer.

### **3.21 Dispatch Console Requirements**

**3.21.1** The Customer requires new Dispatch Consoles as part of this project.

#### **3.21.2 Parallel Implementation**

- 3.21.2.1** The vendor shall be responsible for ensuring the Customer's existing/legacy radio configuration remain operationally available during the installation and acceptance phases of the P25 System.
- 3.21.2.2** The Customer will permit the co-location of new dispatch console equipment with this legacy equipment during the project's user migration phase and until project acceptance.
- 3.21.2.3** Any solution that would cause the temporary interruption of the existing radio system for any duration must be reviewed and approved, in advance, by the affected entities and the Customer.

### **3.21.3 Console Locations and Quantities**

- 3.21.3.1** The Customer currently utilizes one dispatch center for 911, Law, Fire, EMS, and other public safety agencies.
  - A.** The dispatch center is located at 1515 W. Cypress Creek Road, Fort Lauderdale, FL 33309
  - B.** There is a quantity of (6) consoles at this location.
- 3.21.3.2** Customer has a backup dispatch center.
  - A.** This backup location will have eight (8) additional consoles.
  - B.** The new location will include a monopole tower if required, microwave connectivity to the P25 radio system, and DC battery backup for the microwave.
  - C.** The backup dispatch center is located at 2200 Executive Airport Way, Fort Lauderdale, FL 33309.
  - D.** There is a quantity of (8) consoles planned for this location.

### **3.21.4 Installation Specifications**

- 3.21.4.1** Vendor shall install new radio dispatch equipment cabling that must, likewise, be completed in a manner that causes no interference with the operation of the existing legacy network.
- 3.21.4.2** Vendor shall carefully evaluate dispatch facilities prior to initial design review to determine the most effective means to install and implement its new dispatch console equipment and associated subsystems.
- 3.21.4.3** The installation of the Video Display(s) used for the radio dispatch positions shall be capable of desk mounted on furniture or dispatch console furniture display arms.
- 3.21.4.4** Contractor-furnished cabling shall be neatly installed and protected from physical damage.
- 3.21.4.5** Installation plans must be reviewed and approved by the Customer prior to physical installation.
- 3.21.4.6** Cable raceways shall be used where possible.
- 3.21.4.7** No cabling shall create a safety or mobility problem for dispatch personnel.

### **3.21.5 Reliability/Resiliency**

- 3.21.5.1** Due to the critical nature of the communications services provided by these public safety dispatch facilities, a high degree of reliability for the new radio dispatch console subsystem is required.

**3.21.5.2** The console subsystem, to the greatest extent possible, shall:

**A.** Be automatically self-correcting.

**B.** Auto Diagnostics/Self-Healing and Diagnostic Features

1. The new dispatch console subsystem shall be equipped with several self-diagnostic elements that continuously monitor and verify the correct operation of each distributed microprocessor, each audio path in the console electronics, and between the console electronics and the system.

\*Attach Self-Testing and Diagnosis Documentation

2. Diagnostic capability shall be distributed among independent and redundant subsystems and shall not rely on one central diagnostic circuit.

\*Attach Distribution of Diagnostics Documentation

3. In the case of voice transactions using the Internet Protocol, specialized coding shall be used to assure the timely delivery of audio packets to destinations such that recovered or transmitted audio is absent of noticeable voice delays or audio truncation.

**C.** Alert the operator in the event of component or sub-system failure.

**D.** Allow continued operation of the remaining consoles in the event of failure to a specific console, through isolation of the defective console device.

**E.** Be of a design that eliminates single points of failure.

**F.** Utilize packet-based, in lieu of traditional circuit-switched, technologies.

**G.** Modularity is likewise envisioned to reduce the number of sub-systems affected by a single component failure.

**H.** Repair of sub-systems without totally disabling multiple radio console positions shall be required, as continued console operation is necessary during repair.

\*Attach Console Modularity / Repair Documentation

### **3.21.6 Console Auxiliary I/O Functions**

**3.21.6.1** All external auxiliary input and/or output (Aux I/O [logic or relay]) functions shall be controlled through an auxiliary interface module.

**3.21.6.2** These functions shall be controlled from the console position as required.

**3.21.6.3** The Aux I/O shall be capable of operating an alternative 3-light status light/alert system, supplied by the Vendor, to indicate each position is operating a radio transmission, or telephone call, on each console position.

### **3.21.7 Console Minimum Features/Functionality**

#### **3.21.7.1 Electronic Specifications**

**A.** Console electronic circuitry shall be housed in an equipment rack/enclosure specific for each dispatch console position.

**B.** When installed by the Contractor, sufficient space for front and rear servicing of this equipment shall be provided.

- C. The use of a centralized console electronic bank that supports audio and control signaling between multiple dispatch console positions is non-compliant and will be rejected.
- D. Console electronic enclosures shall contain the various microprocessors, console interfaces, auxiliary function interfaces and other interfaces needed for radio dispatch operations.
- E. If multiple circuit cards are required within the Vendor's enclosure solution, these shall be of plug-in design and shall be able to be inserted and/or removed with power applied and the location's other dispatch positions/equipment remaining on-line.
  - 1. The digital voice network's radio dispatch subsystem shall include the circuitry required to operate remotely-controlled base stations and the system repeaters as described by this RFP.
- F. At a minimum, each base station interface shall consist of a plug-in circuit card (or the software equivalent) containing VoIP-related circuitry, line driver amplifiers, two-wire and four-wire receive amplifiers, digital automatic level adjustment circuitry and fault diagnostic circuitry.
- G. The interface shall also be capable of remotely controlling base stations via E/M multiplex-channel, and 2175Hz tone-burst signaling, as may be needed for legacy equipment.

**\*Power Supply/Backup Power Attach UPS Documentation**

- 1. It is a critical requirement that power loss or surges shall not affect radio dispatch operations.
  - a. Power loss or surges shall not alter the system software or operating parameters at the radio dispatch positions
  - b. External power to each console shall be supplied by a nominal 120VAC, 60Hz, single-phase power source.
  - c. All dispatch console equipment, in each dispatch facility, shall be connected to an individual outlet on a circuit that is protected by an existing UPS and supported by the site's emergency power generator.
  - d. The Vendor will provide a load study to ensure and validate the UPS and generator are sized to support any new equipment in the dispatch center.

**\*Attach Load Study Documentation**

- H. The proposed UPS will have a graphical display that shows battery life and voltage incoming and outgoing on the device.
- I. All dispatch consoles shall be capable of operation without commercial power for at least 2 hours.

### **3.21.8 Flat Panel Display**

- 3.21.8.1** A state-of-the-art color, non-interlacing minimum 22-inch display shall be provided.
- 3.21.8.2** Each operator shall have the ability to change screen displays to suit operator preferences.
- 3.21.8.3** No less than eight console preferences shall be configurable for each console.
- 3.21.8.4** The screen(s) are required to be touchscreen.

\*Attach Flat Panel Display Documentation

### **3.21.9 Headset Jack**

- 3.21.9.1** All radio consoles shall, at a minimum, accommodate both righthanded and left-handed operators.
- 3.21.9.2** All radio consoles shall be configured for dual headset and local microphone operations.
- 3.21.9.3** Each console shall provide independent transmit audio level settings for audio inputs from the headset microphone and a desktop microphone, such that telecommunicators may freely switch operation without affecting dispatch audio quality.
- 3.21.9.4** Dual headset jacks shall be provided at each position for training and supervisory purposes.

\*Attach Headset Jack Documentation

### **3.21.10 Footswitch**

- 3.21.10.1** The Contractor shall supply and install a switch for each console.
- 3.21.10.2** Each footswitch will operate PTT of the selected channel(s).
- 3.21.10.3** The footswitch shall be heavy duty, rated for constant and continuous use, and shall be designed so as not to skid on a smooth flooring surface.

\*Attach Footswitch Documentation

### **3.21.11 Master Time Source**

- 3.21.11.1** A time generator system shall be provided, by the Contractor, that references the Global Positioning System to synchronize all dispatch clocks and logging recorders at all radio console positions/centers.
  - A.** The use of standard NTP server mechanisms over the internet is not an acceptable solution.
- 3.21.11.2** This time generator system shall be made to fully interface to and control the event-time display of the radio consoles, console audio recorder, radio network management tools, radio network alarm system, and microwave alarm system at each radio dispatch location.
  - A.** The time generator must provide standard NTP server protocol via ethernet for use on the local and wide area network only.
  - B.** Additionally, this time generator must include at least one additional ethernet port for providing an NTP source to an outside network that would not have access to the proposed radio network.

\*Attach Master Time Source Documentation

### **3.21.12 Telecommunicator Headsets**

- 3.21.12.1** Each position shall be capable of utilizing a wireless headset hardware for connectivity into the proposed radio console headset jack hardware.
- 3.21.12.2** The following headsets are currently in use by the Customer and are required to operate with the new dispatch consoles: Poly CA22CD-SC

\*Attach Telecommunicator Headset Documentation



### **3.21.13 Digital Fixed Station Interface**

**3.21.13.1** The console system shall be capable of modern digital fixed-station interface (DFSI) connectivity to base stations and other fixed radios.

### **3.22 Fallback Control Stations**

**3.22.1** Each dispatch and supervisory position shall be equipped with a P25 trunked control station to permit radio dispatch operations to continue in the event of radio console equipment or connectivity failures.

\*Attach Fallback Control Station documentation for this section

**3.22.2** These control stations, in addition to the minimum requirements specified by the Control Station Specifications section of this RFP, must contain an alphanumeric display to provide information on talk-group selection and emergency call alerts.

**3.22.3** Each control station shall be operated either by a stand-alone footswitch and headset jack or be integrated to the console and operate with the console footswitch and headset jack.

### **3.23 Training**

**3.23.1** A comprehensive training program must be established by the Vendor in its Technical Submittal, to be implemented if selected as the Contractor.

**3.23.1.1** This program would include not only familiarize telecommunicators with physical features and functions of assigned Dispatch Console equipment, but also instruction pertinent to the System's talkgroup structure and how the System's infrastructure establishes local, wide-area and outside interoperable call transactions.

\*Attach Telecommunicators Training Documentation

**3.23.2** The Contractor's training program must include the necessary graphics, visual simulations, and printed media tools to establish an appropriate training process for users.

**3.23.3** Training videos must be available to users on a private web-based portal, thereby allowing for individual refresher training.

**3.23.4** The Contractor must also supply technical assistance during the initial warranty period that allows for ongoing modifications to these training resources, to keep them in-step with additions and changes to the operable and interoperable resources within the System.

**3.23.5** The Vendor shall provide a detailed description of its proposed user/infrastructure training program for fallback control stations/portable radios. Examples of training tools developed for similar P25 regional trunked and conventional radio configurations shall be provided within the Vendor's Technical Proposal Submittal.

\*Attach Fallback Training Documentation

**3.23.6** The Customer must approve all training curriculum prior to training.

**3.23.7** The Vendor shall propose training for up to 38 telecommunicators and 4 telecommunicator supervisors.

**3.23.8** The Vendor must provide resumes of professional training staff that will train the telecommunicators on how the Dispatch Console and Fallback radios operate on the proposed system.

\*Attach Trainer Resume Documentation

### **3.24 Logging Recorder Specifications**

**3.24.1** The vendor shall provide a new P25 capable and compatible Logging Recorder to provide capability for recording any talkgroup on the System and other capabilities as listed.

#### **3.24.2 Comments:**

**3.24.2.1** The recorder shall include:

- A.** Capability to record from a standard NG911 Capable Call Handling solution, via IP recording, following the NENA i3 standard. (NENA-STA-010.3b-2021)
- B.** At least twenty-four (24) channel analog recorder inputs for telephone lines, and other analog audio sources. At least twenty-four (24) channel VOIP recorder inputs for telephone lines.
- C.** Screen Capture, Meta Data, & Quality Assurance Capabilities
- D. Capable of being re-keyed via Over The Air Re-Keying (OTAR).**

\*Attach Logging Recorder Documentation

**3.24.3** The vendor shall include any cost for hardware, software, and services to integrate the proposed system to the existing logging recorder.

**3.24.3.1** There is no existing logging recorder.

### **3.25 Dispatch Console Positions Features and Functions**

**3.25.1** Vendor shall replace all existing radio dispatch consoles at the Customer's dispatch center(s) with an IP-based solution and have seamless integration with the newly proposed system radio network.

**3.25.2** Each of the radio dispatch consoles shall include all controls that apply to the various channel/talk-groups and auxiliary functions for the console.

**3.25.3** Each console position shall contain as a minimum:

\*Attach Dispatch Console supporting documentation for this section.

**3.25.3.1** Select Speaker – for audio from selected channels/talk-groups, with volume control.

**3.25.3.2** Unselect speaker – for audio from unselected channels/talk-groups, with volume control.

**3.25.3.3** Resource selectable speaker – Minimum of 1 additional speaker which allow for console audio resources to be dynamically assigned by the operator.

**3.25.3.4** Transmit Function – a color-coded transmit function to control the push to talk (PTT) function for the selected transmitter(s) and/or talk-group(s).

**3.25.3.5** All controls that apply to the various channel/talk-groups and auxiliary functions for the console.

**3.25.3.6** CTCSS Monitor or Disable Function – shall disable the receiver CTCSS decoder of selected conventional base station(s) operating on conventional channels for monitoring purposes.

**3.25.3.7** Clock – shall display time in twenty four-hour formats and shall be synchronized with the time server.

**3.25.3.8** VU Meter or Audio Level Display.

**3.25.3.9** Keypad or screen representation of a keypad for numeric data entry.

- 3.25.3.10** Microphone – desktop microphone type.
- A. This microphone shall be resistant to interference, such as transmitting hum from lights, cathode ray monitors, or other devices used in the proximity of the console.
- 3.25.3.11** Dual Headset Jack – a dual headset jack shall be provided which will allow for use of a headset equipped with RJ-327 type plug with modular adapter.
- A. Separate headset volume controls for radio and telephone audio output shall be provided.
- 3.25.3.12** Intercom – intercom between operator positions shall be provided.
- A. A visual display shall be provided to identify both the calling and called parties by console name.
  - B. Multiple simultaneous intercom conversations between individual consoles shall be possible.
- 3.25.3.13** ID Display on the channel window for standard calls and emergency calls with a minimum of eight alphanumeric characters.
- 3.25.3.14** All Receiver Mute Function – a function, which will mute the received audio from all unselected channels, shall be provided.
- A. This muting function shall be programmable in predetermined increments.
- 3.25.3.15** Simultaneous Select and Instant Transmit Function – controls shall be provided that allows the operator to manually select any combination of console controlled base stations for simultaneous transmissions.
- A. Three selectable combinations shall be allowed at the discretion of the telecommunicator.
  - B. The patch shall utilize a single trunked channel when patching more than one talk group.
  - C. The Vendor will describe how the system will communicate from different type talkgroups or resources integrated to base station gateways.
    1. P25 - P25 Talkgroup
    2. P25 Encrypted Talkgroup - P25 Talkgroup
    3. P25 Encrypted Talkgroup Key 1 - P25 Encrypted Talkgroup Key 2
    4. Conventional - P25 Talkgroup
    5. Conventional - P25 Encrypted Talkgroup
    6. Base State Gateway P25 Talkgroup - P25 Talkgroup
    7. Base Station GW P25 Encrypted Talkgroup - P25 Encrypted Talkgroup
- 3.25.3.16** Emergency/ Reset
- A. Consoles shall receive emergency alerts from the trunked radio system regardless of the status of the channel control window.
  - B. Emergency messages shall be indicated by a flashing ID, emergency ID character and an audible alert.

- C. Telecommunicator acknowledgment of the message shall silence the audible alert and stop the flashing display.
- D. Multiple emergency messages shall be queued in the display stack and the emergency ID character shall continue to flash until all messages have been viewed and subsequently cleared by the telecommunicator.

#### **3.25.3.17 Alert Tones**

- A. The console shall be provided with, at a minimum, three distinct tones used for alerting purposes over the air.
  - 1. Each alert tone shall be immediately broadcast, when activated, on the selected radio channel.
  - 2. Alert 1 – Steady Alert Tone – shall generate a nominal 1000 Hz steady tone.
  - 3. Alert 2 – Warbling Tone – shall generate a warbling tone.
  - 4. Alert 3 – Pulsed Alert Tone – shall initiate an automatic sequence, consisting of a nominal 1000 Hz tone, for a period of two (2) seconds.

**3.25.3.18** Paging Encoders – Each console shall include a multi-tone paging/signaling encoder that is accessible, minimally, through the data entry keyboard.

**3.25.3.19** Call Indication – a color-coded status call indicator shall be provided for each receiver in a channel control window on the display screen.

**3.25.3.20** Individual Volume Adjust – shall be provided for each channel on the console. Associated color-coded status indicators shall continuously show whether the channel is in the full or adjustable volume control shall be automatically bypassed when a channel is placed in select status.

**3.25.3.21** Talk-group/Channel Cross Patch

**3.25.3.22** Channel/Group Name – designated channel/group control modules shall include a minimum of eight-character alphanumeric display symbols to identify the channel/group.

**3.25.3.23** Talk-Group/Channel Busy Indication

**3.25.3.24** NENA interface – Connectivity to existing E911 and future NG911/IP telephony system (provided by others) for single headset operation.

### **3.26 General Equipment and Shelter Requirements**

#### **3.26.1 Shelter Design Considerations**

\*Attach Shelter Design Documentation

**3.26.1.1** Equipment shelters shall be of a concrete floor, bullet-resistant, concrete aggregate type designed to house radio communications, the standby power generator/transfer switch, and sensitive electronic equipment:

- A. The exterior wall measurements shall be no less than 10ft high, 12ft wide and 30ft long. Interior dimensions shall include nominal wall, roof and floor dimensions, to be determined by Contractor.
- B. Equipment shelters must provide an interior climate suitable for the operation of sensitive electronic equipment, that is, it must be dust proof, watertight and airtight.

- 1) Airtightness shall be measured by a door fan test equivalent to that used to pass a dry agent fire suppression pressure test of 10 minutes at 8 feet.
- C. The shelter shall include a separate power generator equipment area that includes a separate access doorway and a fire-barrier separator that isolates the generator area from the HVAC-conditioned radio equipment space.
- D. This generator equipment area shall also be equipped with a ceiling mounted, thermostatically controlled, electrical heater.
- E. Each equipment shelter shall be supported by a reinforced concrete pad with attachment devices appropriate for securing the building assembly to survive hurricane or straight-line type force (no less than 150-mph) winds.
  1. Construction detail for pad and **attachment** must be stamped by a licensed engineer.
- F. Any sites located within a FEMA 100-Year Floodplain shall require elevation due to the increased flood risk. These equipment shelters shall be elevated upon approved concrete piers or galvanized steel framework.

\*Attach FEMA Floodplain documentation for this section.

1. The finished length of piers/framework shall extend, minimally, four feet above ground level but otherwise in accordance with FEMA's 100-Year floodplain elevation height plus a 24-inch contingency margin.
2. Any site located within a FEMA 500-Year Floodplain must be clearly identified by the vendor within the proposal.

\*Attach list of proposed sites with indication of those in the FEMA floodplain.

- G. Any metal components, attachment hardware, cross-braces and lifting eyes shall be hot-dip galvanized metal after fabrication.

### 3.27 Shelter Configuration Details

- 3.27.1 The exterior wall finish shall be exposed aggregate concrete. Seeding of aggregate for an exposed aggregate finish is not acceptable. Exterior walls must be bullet resistant as defined below.
  - 3.27.1.1 The roof shall be a flat, tapered type having a minimum slope of 1/2" per foot from the roof centerline.
  - 3.27.1.2 The roof shall be designed to support a minimum of 100-lbs/sq. ft. distributed load.
  - 3.27.1.3 A roof shield shall be provided and installed by the Contractor, above the equipment shelter and of sufficient size to adequately protect the shelter and personnel from falling materials via the nearby radio site's tower.
- 3.27.2 All exterior wall, floor and roof joints shall be sealed using a compressible, resilient sealant. There shall be no exposed roof-to-wall or wall-to-floor joints.
- 3.27.3 Cement used in concrete shelters shall be standard Portland cement conforming to the requirements of the "Standard Specification of Portland Cement", ASTM Designation C150. Concrete aggregate shall conform to the requirements of the "Specifications for Concrete Aggregates" ASTM C33 and "Specifications for lightweight aggregates for structural concrete" ASTM C330.

- 3.27.4** Exterior concrete surfaces shall be sealed with a minimum of two coats of THOROGLAZE® H Concrete Sealer or approved equal.
- 3.27.5** The shelter's interior floor shall be covered with poured epoxy. It shall be navy in color with red and white flecks
- 3.27.5.1** The subfloor shall be designed to support a minimum of 200 lbs. / sq. ft. distributed floor load, while on foundation, or as needed to support proposed equipment.
- 3.27.5.2** Consideration should be given to the area(s) for the proposed 48VDC battery plant weight load.
- 3.27.6** Walls shall have a minimum thermal insulation factor of R11.
- 3.27.7** The shelter's roof shall have a minimum thermal insulation factor of R19.
- 3.27.8** Interior wall surfaces shall be faced with white vinyl/coated wood paneling.
- 3.27.8.1** The interior ceiling surface shall be white, vinyl coated plywood. Seams in the plywood shall be trimmed with batten strips painted to match the ceiling.
- 3.27.9** Building openings for the door, air-conditioners, transmission line entrance and other entries shall be framed and sealed in such a manner that moisture, nor insects cannot penetrate the insulation within the walls or the interior walls of the structure.
- 3.27.10** Each door measuring 36"W x 84"H x 3" made of thick insulated bullet-resistant steel, and equipped with a three-point latch, shall be provided. All door hardware shall be stainless steel and incorporate three external hinges having non-removable hinge pins. Door shall open outward to maximize internal building utilization.
- 3.27.10.1** The term 'bullet-resistant' is defined, for this RFP, as unable to be penetrated by a .30-06 or .308 commercial cartridge firing a lead tipped, 160-grain projectile, at no more than 2600 fps muzzle velocity. The projectile will be test-fired at a range of 100 yards. The structure/material must not be completely penetrated at that distance.
- 3.27.11** Aluminum exterior awnings shall be provided to protect the door entrance(s) and air-conditioner units.
- 3.27.12** All hardware used on the exterior surfaces of this shelter shall be either hot-dipped galvanized or stainless steel. Wafer, MDF (Medium-Density Fiberboard), or particleboard wood products are not an acceptable construction material for this project.
- 3.27.13** Contractor shall provide detailed fabrication drawings for the concrete foundation (or steel frameworks), designed to adequately support the proposed building structures and wind loads.
- 3.27.13.1** Additionally, the building frame shall be mechanically bonded to the concrete/steel foundation. Strapping and anchor materials shall be hot-dipped galvanized protected.
- 3.27.14** Building, and foundation detail drawings and related calculations must be reviewed, approved and stamped by a licensed Professional Engineer (P.E.), licensed in the State of construction.

### **3.28 Shelter Electrical Requirements**

- 3.28.1** Each shelter shall be equipped with overhead cable trays located above all planned equipment rack groupings.
- 3.28.1.1** Auxiliary cable trays shall be provided to support transmission lines and telecommunications cables, as necessary.

- 3.28.1.2** All cable tray joints shall be electrically bonded using No. 6 AWG copper wire jumpers with approved compression fittings.
- 3.28.1.3** Trays shall be bonded to the interior ground halo.
- 3.28.2** Individual, properly grounded with home run grounds, 120VAC, 20A electrical circuits shall be provided to each of the equipment racks/cabinets.
- 3.28.3** Each shall be terminated as a single, duplex outlet mounted on the cable tray directly above the center of each planned equipment rack.
- 3.28.4** Individual, properly grounded with home run grounds, 240VAC, 30A electrical circuits shall be provided for each battery charger unit.
- 3.28.5** Sufficient flexible conduit shall be provided above the rack to permit interconnection to chargers located at the bottom of the rack.
- 3.28.6** DC wiring for the radio network's battery plant and interconnection to the various equipment groupings shall be furnished and installed, as required.
- 3.28.7** Install eight (8), properly grounded with home run grounds, quad 120VAC convenience outlets, two each on the two longest walls and one each on each of the remaining walls.
- 3.28.8** Install four (4), properly grounded with home run grounds, quad 120VAC convenience outlets shall be installed within the generator space.
- 3.28.9** No fewer than twelve (12) 120VAC ceiling mounted outlet boxes shall be provided, each with one (1) duplex receptacle and home run ground. These receptacles should be spaced according to areas of located 120VAC equipment or future expansion space areas.
- 3.28.10** The Contractor shall furnish and install no fewer than one circuit breaker panel board. Panel board shall be sized for all the indicated branch circuits, equipment loads plus a fifty (50%) growth factor.

### **3.29 Electrical/Transient Grounding System**

- 3.29.1** The Contractor shall furnish and install an interior and buried exterior electrical grounding system and power surge protection for each location, as follows:
  - 3.29.1.1** A single #2AWG copper conductor ground halo shall be installed on all four interior walls, spaced approximately six inches below ceiling level.
  - 3.29.1.2** The halo shall include a twelve-inch gap/break at the furthest point from the single-point ground attachment, which shall coincide with the RF transmission line entrance.
  - 3.29.1.3** Ground halo shall be mounted on six-inch standoffs, located on twelve-inch centers. It shall be affixed to the transmission line ground entry-port buss bar.
  - 3.29.1.4** This ground entry-port buss bar must be equipped with an Alarm, connected to the network's alarming system, to indicate ground failure, tamper, or theft.
  - 3.29.1.5** All equipment cabinets, racks, transmission line entrance and cable trays shall be individually bonded to the halo using #6AWG copper conductors with approved compression fittings.
  - 3.29.1.6** Interior halo shall be bonded to an exterior, buried ground network using low impedance copper conductors.

- 3.29.1.7** Electrical transient protectors shall utilize MOV and avalanche clamp devices such as the Transector Systems Model 1101-808 series or equivalent. This device shall be installed on the commercial power feed as well as the standby generator feed to the power transfer switch.
- 3.29.1.8** A single, stranded #00AWG copper exterior ground system shall be installed about the building and tower perimeter, located below the frost line, as identified locally, and exothermically bonded to the building frame, interior halo, transmission line ladder, generator system, ice shields, and radio tower legs.
- 3.29.1.9** All site grounding practices and methods shall meet a recognized telecommunications standard such as IEEE, Motorola R56 or the current revision of Harris AE/LZT 123 46181/1.

### **3.30 Shelter Lighting Requirements**

- 3.30.1** Install LED light fixtures as necessary to provide effective illumination for each equipment rack, and within the generator room.
- 3.30.2** Install emergency exit and interior lighting as required by fire code.
- 3.30.3** Exterior lights above the door(s) and area lights on each of the exterior shelter corners shall be controlled by, at a maximum, two light switches located just inside the main door opening on the side away from the hinges at shoulder height.
- 3.30.4** LED lights are permitted on exterior walls with prior approval by the Customer.
  - 3.30.4.1** LED lights should be tested to limit interference with system operation. Lighting that causes interference shall be replaced at the expense of the Vendor

### **3.31 HVAC Requirements**

- 3.31.1** The Contractor shall furnish and install a redundant heating and air conditioning system appropriately sized to maintain an average temperature of 70 degrees Fahrenheit and less than 60% relative humidity. Redundancy shall mean that the failure of one air conditioner shall not cause the room temperature to exceed 80 degrees F and/or 75% relative humidity.
- 3.31.2** The HVAC system shall consist of split unit compressors and air handlers to minimize wall penetrations. The air handler units shall include a condensation collection and removal system with an alarm for high water level/pump failure. The alarm will be wired and configured for access by a remote network management client.
- 3.31.3** For heat load calculations, Contractor shall include all continuous duty equipment and assume all transmitters will be operating at a 50% duty cycle. Heat load shall also include a building loss factor appropriate for the location's historical high temperature average (previous 5 years) and the shelter's overall insulation rating. Heat from future growth equipment shall also be included in the initial load. Heat from interior lighting and service outlets may be excluded.
- 3.31.4** The HVAC system shall provide the heating capacity necessary to maintain a room temperature of 60 degrees Fahrenheit with all equipment powered off. Heating capacity shall be based on the shelter's overall insulation rating and an outdoor temperature from the location's historical low temperature average for the previous 5 years.
- 3.31.5** HVAC configuration must include a lead-lag controller to rotate use of the air conditioner units. The lead unit shall be rotated after each cycle. The controller shall support the number of HVAC



units proposed, including any secondary stages, plus 1 additional similar unit for future expansion and redundancy. The controller shall support industry standard wiring used by the leading manufacturers.

**3.31.6** The HVAC Controller shall include the following sensors and alarms:

**3.31.6.1** Indoor Temperature Sensor

**3.31.6.2** Outdoor Temperature Sensor

**3.31.6.3** Indoor Humidity Sensor

**3.31.6.4** Fire Suppression System Shutdown Input

**3.31.6.5** Ethernet Connectivity for Remote Management (wired and configured for remote access)

**3.31.6.6** NO/NC Dry Contact Outputs (wired and configured for remote access)

**A.** Controller Primary Power Fail

**B.** Generator Active

**C.** Controller Failure

**D.** Unit Lock Out (ea.)

**E.** Emergency Shutoff High Temperature (ea. sensor)

**F.** Low Temperature

**G.** High Humidity

**H.** Filter Alarm

**I.** Emergency Ventilation Fan

**J.** Theft Alarm

**3.31.7** Each AC unit shall incorporate circuitry to ensure that multiple compressors do not attempt to restart at the same time.

**3.31.8** The HVAC configuration shall include appropriate sensors to cause multiple air conditioners to run simultaneously, as needed, to reduce the internal temperature more rapidly to a safe operating level.

**3.31.9** Equipment shall be furnished with compressor anti-cycle circuitry to prevent short-cycle starts against high compressor head pressure.

**3.31.10** Equipment shall be furnished with a compressor hot gas bypass (or its equivalent) to minimize electrical power surges because of compressor cycling.

**3.31.11** The design of HVAC system shall take into consideration local environmental conditions and include appropriate coatings where units are exposed to salty air.

**3.31.12** Buildings shall incorporate a thermostatically controlled Emergency Ventilation System (EVS) designed to operate in the event of a total HVAC failure and where the building's interior temperature exceeds 90°F.

**3.31.12.1** The EVS shall be capable of remote activation and deactivation.

**3.31.12.2** When installed in a room with an automatic fire suppression system, the EVS will include circuitry to close all dampers and disable the fan.

- 3.31.13** The EVS shall incorporate appropriate motorized dampers, screens, and filters to limit dust and insect entry into the building.
- 3.31.14** A second EVS shall be installed within the generator room (for indoor generators).
- 3.31.15** Customer requires separate compressors and Air Handler Units (AHU)
  - 3.31.15.1** Compressors shall be mounted on the platform with shelter.
  - 3.31.15.2** AHU's can be ceiling mounted or floor mounted, with alarmed external condensation tray.

### **3.32 Shelter Alarm Systems**

- 3.32.1** The Contractor shall furnish and install an over/under temperature sensor, continuously adjustable over the range of 40°F to 90°F, having independent Form-C output contacts suitable for high/ low temperature alarm activation.
- 3.32.2** The Contractor shall furnish and install a door entry alarm sensor, magnetic type, having a Form-C contact closure output.
- 3.32.3** The Contractor shall furnish and install single-loop smoke/ fire detection system with relay alarms output to the site alarm block independent of any alarms that may be provided by an engineered fire suppression system.
- 3.32.4** Smoke/fire alarm sensors shall be mounted above battery charger equipment, in the generator room, and in vicinity of AC power distribution panel board.
  - 3.32.4.1** Smoke/fire alarm panel shall have visual indicators depicting individual alarm sensor status.
  - 3.32.4.2** Smoke/fire alarm panel shall operate from both 120VAC and 12VDC battery power sources.
  - 3.32.4.3** The Customer's Fire Marshal shall inspect the proposed fire alarm system.
- 3.32.5** All shelters shall be equipped with an inert gas fire suppression system that is environmentally approved and not injurious to communications personnel.
  - 3.32.5.1** The system shall be connected to the shelter fire/smoke system alarms.
  - 3.32.5.2** Trigger of the system causing a gas discharge shall cause the air conditioners and fans to automatically shut off.
- 3.32.6** Where the HVAC equipment is disabled by the Fire Suppression system, a method for remote restarting of the HVAC shall be provided.

### **3.33 Generator Requirements**

#### **3.33.1 LPG Generator Equipment Requirements**

- 3.33.1.1** A standby dual-fuel power generator system shall be furnished by the Contractor for each infrastructure site. For its proposed infrastructure sites, the Vendor shall include:
  - A.** The necessary labor and materials, as required, to furnish and install LPG fuel tanks, automatic transfer switches, manual-operated auxiliary generator connector facilities, alarm functionality and electrical wiring services to provide fully operational standby power systems.

- B. A generator housed inside the provided equipment shelter, in accordance with the manufacturer's specifications for shock and vibration mounting, ventilation, fuel supply and electrical connections.
- C. The radiator air inlet shall incorporate a baffle to protect the radiator core from exterior wind-blown debris damage.
- D. It shall be the responsibility of the Contractor to provide, install and test a complete and operable standby power generator with automatic transfer switch.
- E. Equipment shall be new, factory tested at 0.8 power factor for 3-hours and shall be installed within the required equipment shelters, in accordance with local area building and electrical codes.
- F. The following documentation shall be supplied by the Contractor for the generator set and transfer switch supplied:
  - 1. Specification and data sheets for the exact type and model generator and transfer switch supplied pursuant to this procurement, including all options and accessories included.
  - 2. Manufacturer's certification of prototype testing.
  - 3. Manufacturer's warranty documents.
  - 4. Shop drawings showing plan and elevation views of the equipment.
  - 5. Interconnection wiring diagrams showing all external connections required; with field wiring terminals marked in a consistent point-to-point manner.
  - 6. Manufacturer's installation instructions.
  - 7. Operator's and maintenance manuals that outline routine maintenance and troubleshooting procedures.
  - 8. Transfer switch manual and wiring diagram.
- G. Start-Up Service shall be included with the following requirements:
  - 1. A factory authorized service representative shall provide initial start-up service and shall conduct on-site acceptance testing.
  - 2. The representative must remain until site acceptance is completed, as witnessed by the Customer.
  - 3. Load test records for the installed generator system shall be furnished to The Customer.
- H. The following type of engine configuration will be used:
  - 1. The generator package shall include an LPG configured engine coupled with low reactance, brushless 120/240vac single-phase, 60Hz generator.
- I. The generator package shall be equipped with:
  - 1. A temperature compensated automatic voltage regulator;
  - 2. Under/over-speed protection function;
  - 3. A control panel;
  - 4. Engine block heater;

- 5. High ambient-temperature cooling system.
- J. Output power rating of the generator shall be sized for the full calculated load of the affiliated site, inclusive of a 50% excess load factor.
- K. In no instance shall the proposed generator be configured for less than 45KW output.
- L. The generator shall also be capable of continuous 24-hour operation, full single-phase output at 1.0 pf.
- M. The following specifications shall also apply:
  - 1. Voltage Regulation: Maintained with +/- 2% of rated voltage for constant load between no load and full load.
  - 2. Frequency Regulation: Maintained within 0.5% from steady state no load to steady state rated load.
  - 3. Single-Step Load Pickup: 100% of rated output power, less applicable derating factors, with the engine generator at operating temperature.
- N. The generator shall have the following Set Controls:
  - 1. The generator shall be a remote-start type compatible with the automatic transfer switch to be supplied pursuant to this procurement.
  - 2. Manual starting and stopping shall be provided from the control panel.
  - 3. Cranking control: Shall provide a minimum of three cranking cycles of at least 15-seconds before lockout and activation of an over-crank alarm condition.
  - 4. The generator shall automatically shut down and lock out upon:
    - a. Failure to start (over-crank)
    - b. Over speed
    - c. Low lubricating oil pressure
    - d. High engine temperature
    - e. Low Coolant level
    - f. Other factors that may be harmful to the generator
  - 5. Alarm contacts shall be provided to allow transmission of fault alarms for any of the above conditions, plus low oil pressure pre-warning, high coolant temperature pre-warning, low coolant temperature, low fuel and an alarm indication when the generator set is running.
    - a. These alarm contacts shall be wired into, and shall be reported by, the radio network alarm system.
  - 6. Meters shall be provided and located both at the generator and within the equipment shelter, to indicate output voltage, output current, running time, and frequency/RPM.
  - 7. An AC rheostat (or electronic equivalent) shall be supplied for fine tuning of the generator's output voltage.
  - 8. These devices shall be mounted either on the transfer switch door or a separate, remote panel.

9. Each generator must have the capability to communicate to a central control software terminal, via the IP network, to allow for remote start and other diagnostic capabilities.
10. Each LPG-Generator shall have the following Fuel Supply requirements:
  - a. The Contractor shall supply a new, corrosion-proof, 1,000-gallon LPG storage tank to be installed on a concrete or elevated steel foundation, as dependent upon site flood plain conditions.
  - b. The fuel tank shall provide sufficient fuel to provide ninety-six (96) hours of continuous operation of the generator set at full load under low ambient temperature.
  - c. The fuel tank shall have a shield installed above to prevent debris from the nearby tower puncturing or damaging the tank shell.
  - d. The tank shall be refilled after the conclusion of radio network acceptance tests.
  - e. Fuel lines shall be buried below the frost line, as determined by the location. At any point at which the fuel line exits above grade, the line shall be insulated to reduce condensation at the regulator.
  - f. A low fuel level alarm shall be provided.
  - g. All fuel supply lines will be sized accordingly for the generator running at full load.
  - h. All necessary regulators, drip pots, piping, meters, or other supplies needed for installation that meets local fire and building codes shall be furnished and installed.
  - i. Contractor shall supply a full fuel tank at time of System Acceptance.
  - j. Generator shall be capable of being connected to a natural gas line with constant supply of natural gas rather than the supplied tank with the option to switch to the LPG tank if the natural gas supply is interrupted.
11. A residential-grade exhaust silencer shall be installed on the generator.
12. Battery and Charger specifications are as follows:
  - a. A lead acid starting battery, rated for the engine type to be supplied, shall be furnished and installed with the generator package.
  - b. This battery shall be float charged by a 10-ampere, voltage-regulated charger which is powered by a protected 120VAC source.
  - c. Float, taper and equalize charge settings shall be provided.
  - d. Battery charger shall be physically located within the generator transfer switch enclosure.
  - e. Battery and charger must be able to operate in, as low as, 0 degrees F.
  - f. Form-C charging system alarm contacts shall be provided and connected to the network's alarm system to report loss of AC power, low battery voltage and excessively high battery charging current.
13. The following Cooling System components are required:

- a. A radiator-cooled engine is required.
- b. The radiator shall be filled with a water/coolant mixture in accordance with the engine manufacturer's recommendations.
- c. A thermostatically-controlled water jacket coolant heater shall be provided and installed in accordance with the manufacturer's recommendations.

**14.** The Generator Base shall have the following characteristics:

- a. The generator set shall be mounted on a heavy-duty steel base which is anchored to a Contractor-furnished building foundation.
- b. The base shall maintain alignment between generator set components and shall include vibration isolators.

**3.33.1.2** Customer requires a non-proprietary controller (e.g. Basler or approved equal).

**3.33.1.3** Customer prefers GM 5.7-liter engine.

**3.33.1.4** Customer requires baffling of the hot air exhaust

**3.33.2** The Generator Transfer Switch

**3.33.2.1** An automatic transfer switch which provides switching of the equipment shelter electrical load between commercial power and generator power shall be supplied and installed for each Vendor proposed standby generator.

- A.** Each transfer switch shall be completely factory assembled and shall contain electronic controls designed for surge voltage isolation, with voltage sensors on all phases of both input power sources.
- B.** Permanently attached manual handles shall also be installed on the transfer switch.
- C.** The switch shall provide positive mechanical and electrical interlocking, and mechanically-held contacts.
- D.** Quick-make and quick-break contact mechanisms shall be provided for manual transfer under load.
- E.** Each transfer switch shall be installed in a key locking, UL listed, NEMA rack to be mounted on a wall within the radio equipment shelter.
- F.** The switch shall be fully wired and integrated with the engine generator set in accordance with local electrical and fire codes.
- G.** A manually-operated transfer switch, as well as appropriate power connectorization, shall be provided to allow the interconnection of an auxiliary, trailered generator set should the permanently-located generator fail in operation, utilizing an Appleton plug. Vendor shall include terminals for auto start contact closure for the temporary generator solution.
- H.** All transfer switches and accessories shall be U.L. listed and labeled, tested per U.L. Standard 1008 and CSA Approved.
- I.** Transfer switches shall be double-throw electrically and mechanically interlocked and mechanically-held in both positions.
- J.** Main switch contacts shall be high-pressure silver alloy.

- K.** Contact assemblies shall have arc chutes for positive arc extinguishment. Arc chutes shall have insulating covers to prevent inter phase flashover.
- L.** Form-C contacts shall be provided in each main switch position for alarm reporting purposes.
- M.** These contacts shall be connected to the network's alarm system for reporting transfer status.
- N.** Each transfer switch shall be continuously rated for operation in ambient temperature ranges of -40 to +50 degrees Celsius.
- O.** Transfer switches shall be rated, minimally, to carry the generator's full rated output, inclusive of the 50% added capacity over calculated equipment loading.
- P.** The Line-In, Generator-In and Load side terminations for the automatic transfer switch shall be protected from lightning transients using a combination of Metal Oxide Varistor (MOV) and avalanche Zener diode technologies.
- Q.** All alarm and instrumentation wiring from the generator, that enters the equipment shelter, must likewise include appropriate lightning surge protection in the form of solid-state, fast-acting voltage clamp devices whose clamping voltage is closely matched to normal individual-alarm signal amplitudes.
- R.** Transfer switch control shall be solid state and designed for a high level of immunity to power line surges and transients.
- S.** The device shall be tested in accordance with IEEE Standard 587-1980 (or latest revision).
- T.** Controls shall have optically isolated logic inputs, and isolation transformers for AC inputs.
- U.** Relays shall be installed on all outputs.
- V.** Solid state under voltage sensors shall simultaneously monitor all phases of the standby power source and the commercial power source.
- W.** Pick up and drop out voltage settings shall be adjustable.
- X.** Voltage sensors shall allow for adjustment to sense partial loss of voltage on any phase.
- Y.** Controls shall be provided with solid state over voltage sensors, adjustable from 100-130% of nominal input voltage to monitor the source.
- Z.** An adjustable time delay shall be provided.
- AA.** Automatic controls shall signal the engine generator to start upon signal from normal source sensors.
- BB.** A time delay start, variable from 0 to 5 seconds, shall be provided to avoid nuisance startups.
- CC.** Battery voltage starting contacts shall be gold, dry type contacts which have been factory wired to a field wiring terminal block.
- DD.** The switch shall transfer when the emergency source reaches the set point voltage and frequency.

- EE.** A time delay shall be provided for transfer that shall be continuously variable from 0 to 120 seconds.
- FF.** The switch shall retransfer the load to commercial power after a delay.
- GG.** This time delay shall be variable (adjustable) from 0 to 30 minutes to avoid short engine run times.
- HH.** The retransfer time delay shall be immediately bypassed if the emergency generator fails.
- II.** A control shall automatically signal the engine generator to stop after a time delay, which shall be adjustable from 0 to 10 minutes, the time starting upon return to commercial power.
- JJ.** Power for transfer operation shall be from the source to which the load is being transferred.
- KK.** Diagnostic indicators shall be provided to allow the last successful step in the sequence of control functions to be pinpointed.
- LL.** The present status of the control functions shall also be indicated.
- MM.** These functions, at a minimum, shall include:
  - 1. Source 1 OK
  - 2. Start generator set
  - 3. Source 2 OK.
  - 4. Transfer timing
  - 5. Transfer complete
  - 6. Retransfer timing
  - 7. Retransfer complete
  - 8. Timing for stop
- NN.** A key-operated Front Panel selector switch shall be provided which will provide the following functions:
  - 1. Test to simulate commercial power loss to allow testing of the generator set with or without transfer of the load.
  - 2. Normal - leaves the transfer switch in its normal operating position.
  - 3. Retransfer a momentary position which will provide an override of the retransfer time delay and cause immediate return to the commercial power source (if available).
- OO.** An Exerciser Clock setting shall be included which allows setting the day, time and duration of a generator set exercise/test period. Tests under load or with no load shall be selectable.

### **3.34 Tower Requirements**

- 3.34.1** All vendors shall comply with the Customer tower ordinances and local codes in addition to the requirements listed in this RFP.



### **3.34.2 Basic Design**

- 3.34.2.1** The basic standard for the design of newly required steel antenna towers, wave guide bridges and supporting structures, shall be ANSI/TIA-222-H.
- 3.34.2.2** Towers shall be triangular shaped, solid-rod structure having an overall height to be determined by the Vendor, based on the requirements of area coverage and availability of unobstructed microwave paths for site connectivity.
  - A.** Limits of available space in certain areas may dictate the use of self-supported towers.
- 3.34.2.3** Each tower shall be designed for a minimum sustained 150-mph wind speed with the full complement of necessary antennas and required lights and other Federally-required equipment.
- 3.34.2.4** Antenna loads shall be as determined by Vendor; however, the design shall include a minimum growth factor in the top 1/3 of the tower to support a future 6' high performance microwave dish and 2 antennas comparable to the vendors choice for the coverage design.
  - A.** Vendors are encouraged to investigate local tower code information and respond accordingly.
  - B.** All other loading requirements required by existing codes or lease agreements, shall be in addition to this growth requirement.
- 3.34.2.5** All fabricated tower assemblies and parts shall be hot-dipped galvanized after fabrication per ASTM Standard A123.
  - A.** Hardware shall be galvanized per ASTM Standard A153 and B695. Other types of zinc coating or plating are not acceptable.
- 3.34.2.6** Towers shall be supplied with a full-length transmission line ladder(s) designed to accept transmission lines needed for the proposed design plus one extra 6GHz waveguide and two 1-5/8" coax runs for future growth.
  - A.** Cable ladder future growth area shall be design for unstacked lines.
- 3.34.2.7** Towers shall be equipped with an outside climbing ladder/cable type safety devices and LED lighted in accordance with FAA and current OSHA regulation 29 CFR 1910.27.
  - A.** This device shall not interfere with the ease of climbing from one rung of the ladder to the next.
  - B.** There must be at least two sources of climbing safety belts compatible with the safety climb anti-fall system, as supplied with the tower.
- 3.34.2.8** Tower lighting shall conform to FAA Advisory Circular AC 70/7460-1M, or current revision, Obstruction Marking and Lighting. VHF, UHF and 800 MHz radio equipment may be operational/co-located at the various trunked radio sites.
  - A.** Therefore, it is imperative that only shielded, RFI-conditioned lighting devices be provided.
- 3.34.2.9** The Vendor shall provide detailed tower lighting equipment specification literature in its response sufficient in scope where the Customer can determine the suitability of the proposed lighting system with respect to planned or anticipated radio operations.
- 3.34.2.10** The Contractor shall install tower lighting controls in a temporary fixture adjacent to the tower, operated by a photo control, and provide a Form-C contact wired into the alarm panel.

**A. Note:**

1. This controller device is to be relocated within the site equipment shelter once fully constructed.
2. Please allow sufficient lighting control cable slack to allow for re-installation inside the equipment shelter.

**3.34.2.11** All antennas, tower top amplifier (TTA), and transmission lines specified by the licensed frequencies and Contractor's system design shall be furnished and installed by the Contractor.

**3.34.2.12** A site's Electrical Grounding System shall be furnished and installed by the Contractor in accordance with the following minimum practices:

- A. Install a ground ring around the base of the tower, consisting of 10'x 5/8" ground rods driven to a depth necessary to meet the required resistance measurement of the specifications, adjacent to the foundation of the tower at each leg.
- B. Ground rods shall be interconnected by a minimum #00AWG stranded copper wire, which is to be exothermically welded to the top of each ground rod.
- C. Maximum spacing between rods shall not exceed twice the length of the ground rod.
- D. Each tower leg shall be bonded to the ground ring using #00 AWG stranded tinned copper cable, which has been exothermically welded to a flat, 4-inch square solid steel tab located near the base of each tower leg.
- E. Each cable lead will run to the closest ground rod through an insulated sleeve to minimize wire damage.
- F. The upper end of the sleeve should be sealed with a non-shrinking compound such as RTV to prevent water from collecting within the sleeve.
- G. The Contractor shall avoid making any acute bends as the ground wire transitions from the foundation.
- H. Bends should be a minimum of 9-inches in radius.
- I. To complete the exothermic welding process, attachment area on the tower tab shall be cleaned and coated with a cold galvanizing compound.
- J. The ground bar must be tamper and theft resistant. The wire lead must be sleeved so that it is protected from physical damage.
- K. Like above, the upper end of the sleeve shall be sealed with a non-shrinking compound like RTV to prevent water from entering and collecting within the sleeve.
- L. This ground wire lead shall be installed at the time the tower ground ring is installed.
- M. The ground rod/ring system shall extend around the perimeter of the equipment shelter, transmission line copper entrance port into the shelter and to the perimeter fence.
- N. Ground system ring around the tower base shall be located a minimum of 36 inches away from the tower foundation.
- O. The tower ground system ring shall be connected to the equipment shelter ground ring in at least two places, on the closest corners of the shelter ring.

- P. The Contractor shall electrically bond all transmission line outer shields to the structure at the top of the tower immediately below the antenna and at the line midpoint if the tower's height is over 200-feet.
- Q. Likewise, bond all transmission line shields near the bottom segment of the tower, approximately one-foot above the bend made to enter the waveguide-bridge and again at the shelter's antenna entry port/panel.
- R. Use only transmission line grounding kits approved by the manufacturer for use on the type and diameter of transmission lines provided. All installed grounding kits shall be weather sealed.
- S. Fencing shall be grounded to the ground ring via #2 AWG solid copper wires, bonded via exothermic welding at each fence post.
- T. Exothermic welds shall be cleaned and protected with a minimum two coats of cold galvanized material. Gates shall utilize braided, flexible straps.
- U. The shelter's interior halo ground and transmission line copper inside entrance port (buss bar) shall exothermically bond to the outdoor ground.
- V. A ground test well shall be provided at a minimum of two locations along the ground loop.
- W. One test well shall be located adjacent to the tower and the other at the far side of the equipment shelter loop.
- X. Each test well shall consist of a minimum 6-inch diameter PVC material that extends down to the depth of two feet and shall allow the attachment of a test wire to measure ground resistance.
- Y. A screw on or drop on cover that is easily removable to allow testing shall be provided.
- Z. Grounding system resistance shall be measured to be 3-ohms or less between any point on the ground system and earth ground.
- AA. Measurement shall be done with a 4-point ground resistance tester and not by a clamp on resistance tester.

**3.34.2.13** Vendors will supply a sample tower design for each type of proposed tower.

\*Attach sample tower design documentation for this section.

### **3.35 Guy Wires**

- 3.35.1** Galvanized guy strand shall conform to the minimum requirements of ASTM Standard A475 Extra High Strength (EHS) or equivalent recognized standard.
- 3.35.2** Preformed guy grips and dead-ends shall be designed specifically for the length, size and type of cable being used. This shall include the size, number, and lay of the wires and electrochemical compatibility of the material.
- 3.35.3** An adequate bend radius shall be provided, as per the manufacturer's recommendations, at the inside of cable attachments consisting of a thimble.
- 3.35.4** Shackles used to connect guy assemblies shall be forged from AISI grade 1035 or 1045 steel or equivalent and suitably heat-treated (quenched and tempered, normalized or annealed).

- 3.35.5** Turnbuckle devices shall be installed at the anchor end of the guy assembly for adjusting the guy tension.
- 3.35.5.1** In initial installations, the minimum take-up adjustment available after the structure is plumb and the guy tensions are set shall be 6 inches for guys with normal diameter of 0.5-inches and 10-inches for guys with normal diameter greater than 0.5 inches.
- 3.35.5.2** All guy wires shall be bonded to ground rods using, minimally, a #2AWG solid, tinned copper wire.
- 3.35.5.3** Bonding shall include use of guy wire grounding clamps that are tin-plated bronze (or similar type material) to prevent electrolysis.
- 3.35.5.4** Grounding attachment clamps shall be installed above the guy wire turnbuckle.
- 3.35.6** Guy wire anchor plates are to be grounded using, minimally, a #2AWG solid, tinned copper wire that is exothermically welded to the anchor plate. Welds shall be cleaned and treated with cold galvanized coatings to prevent rusting.
- 3.35.7** All guy wires shall include ice clips ahead of the preforms.
- 3.35.8** Turnbuckle safety cables must use a "Figure 8" configuration.

### **3.36 Required Tower Submittals**

- 3.36.1** The Contractor shall furnish wind-load stress, geotechnical reports and foundation calculations used in the design of the proposed tower structure.
- 3.36.1.1** Existing towers shall be evaluated for structural, electrical grounding and foundation stability, inclusive of identification/resolution of corrosion within tubular members and the suitability to support additional antenna loads as necessary to accommodate the newly added Contractor-furnished equipment.
- 3.36.2** The Contractor shall furnish documentation approved by a registered professional engineer, licensed in the State of Florida certifying that the proposed new tower(s) and foundation(s), as well as required modifications to be made to existing towers, meet the requirements of EIA/TIA-222-H.
- 3.36.3** Prior to initial design review, Contractor shall perform soil pH value testing at all proposed new tower sites.
- 3.36.4** The Contractor shall furnish written certification that all installed tower components on both new and existing towers have been properly constructed and hot-dipped galvanized.
- 3.36.5** The Vendor shall furnish documentation as to any special condition or restriction applied to the use of materials, products or equipment contained in their response.
- 3.36.6** Contractor shall provide to The Customer, a minimum of three (3) sets of completed "as-builts" on each tower and shelter installed or modified in this project. In the case of new structures, this shall include engineering and design documentation from the tower and shelter manufacturer.
- 3.36.7** Installed structural members or welded structural assemblies, except for standard hardware, shall have a part number.
- 3.36.7.1** The part numbers shall correspond with the Contractor's assembly drawings.
- 3.36.7.2** Part numbers are to be permanently attached (stamped, welded lettering, and/or stamped on a plate that is welded to the member, etc.) before all protective coatings are applied.
- 3.36.7.3** Attached/affixed part numbers shall have a minimum character height of 0.50 inches.

- 3.36.8** The Contractor shall provide a detailed report of electrical ground resistance measurements of the completed, as-installed, electrical grounding system, on a per-site basis with field drawings to indicate the measurement at a specific location.

### **3.37 Identified Candidate Sites for New Towers**

#### **3.37.1 Customer Owned Land**

- 3.37.1.1** Any Customer identified candidate tower sites from customer owned land, that may be proposed by the Vendor, is identified in Appendix C - Tower Candidate Sites List.

#### **3.37.2 Partnership Towers**

- 3.37.2.1** Any Customer identified candidate tower sites made available through partnerships, that may be proposed by the Vendor, are identified in Appendix C - Tower Candidate Sites List.
- 3.37.2.2** The customer has a legacy tower and shelter at the Utilities Site that will be used in the RF design.
- 3.37.2.3** The customer has a planned tower and shelter at the collocated SLERS Site that will be used in the RF design.
- 3.37.2.4** The customer has a legacy tower and equipment room at the Playa del Sol Site that will be used in the RF design.
- 3.37.2.5** The towers will require the vendor to perform a load study to be completed after the removal of the legacy feed horns.
- A.** The vendor will provide pricing as a part of this proposal to remove these feed horns. Should any of the metal have any value from a recycling center, the vendor will reimburse the City as part of the cost to remove the feed horns.
- B.** As an alternative, the City reserves the right to have the contractor leave the metal on site for the City to dispose of the metal with their own disposal process.
- 3.37.2.6** The shelter(s)/equipment room will be considered by the vendor and will be used for the new proposed equipment.
- A.** Any grounding updates for the shelter will be considered and priced as part of this proposal.
- 3.37.2.7** A generator load study will be completed by the vendor and a new generator will be provided per the generator specifications in Section 3.34.
- 3.37.2.8** The vendor should confirm with the customer and the vendor that there will be no leased fees for the identified Partnership towers and land.

### **3.38 Site Work Requirements**

#### **3.38.1 Site Preparation and Sub-grading**

##### **3.38.1.1 General**

- A.** Site clearing, initial earthwork, rough grading, and final grading as needed for installation of towers and equipment shelters is the Contractor's responsibility. The following describes a set of minimum requirements for the execution and completion of site-related construction activities.

##### **3.38.1.2 Dewatering of the Site**

- A. Control grading around excavations to prevent surface water from flowing into excavation areas.
- B. Drain or pump as required, thereby maintaining all excavations, trenches, and pier holes free of water from any source and discharge to approved drains or channels. Commence dewatering action when water first appears and continue until work is complete to the extent that no damage will result from hydrostatic pressure, flotation, or other causes.
- C. Use pumps of adequate capacity to ensure rapid drainage of area, and construct and use drainage channels and sub-drains with sumps, as required.
- D. Remove unsuitable excessively wet sub-grade materials and replace with approved backfill material.

#### **3.38.1.3 Soil Compaction**

- A. Compact sub-grades, fills, embankments and backfills using spreading equipment, tamping rollers, rubber-tired rollers, vibratory compactors, or power tampers, as required to obtain reasonable uniformity.
  - 1. Nuclear soil testing results are required to be provided in a report to the Consultant.
- B. Perform within moisture content range as specified to obtain required results with equipment used.
- C. Achieve minimum densities specified as references to:
  - 1. Cohesive soils - 95 percent maximum density at optimum moisture, AASHTO T99.
  - 2. Cohesionless Soils – 70 percent of maximum relative density.
  - 3. ASTM, STP 479 Bunnister method.
  - 4. USBR - E12 relative density.
  - 5. Relative density, ASTM D204911.2.

#### **3.38.1.4 General**

- A. Extent of Work: Perform all drilling and excavation and supply all labor and materials to construct drilled pier foundations, as necessary.

#### **3.38.1.5 Performance**

- A. Quality Assurance will be met with a field inspection of the Customer's quality control designee.
- B. The Customer's Project Representative will be designated to be responsible for field inspection of the drilled pier foundations.
  - 1. The representative will transmit, in writing, to the consultant and contractor any materials or methods observed that do not conform to this specification and, if required, will not be considered for payment.
  - 2. The Customer's Project Representative must inspect each drilled pier.
  - 3. Specific responsibilities of The Customer's Project Representative will be:
    - a. Observe drilling excavation of drilled pier foundations.

- 1) Ensure the placement of anti-caving physical barriers or the use of special drilling mud to prevent excessive cavitation.
- b. Inspect bearing elevation of drilled piers.
- c. Observe placement of concrete and rebar within the drilled pier foundation to match design specification.
  - 1) Ensure that no excessive earth contamination occurs. Contamination of poured concrete is sufficient to cancel the pour and request engineering inspection.
- d. The Customer's representative shall photograph or film all foundation excavation and pouring activities Contractor's Qualifications.
- e. The Contractor's qualifications must be minimum of two-year's experience in drilled pier construction, including experience with similar subsurface material, water conditions, shaft sizes, and special techniques as required.

#### **3.38.1.6 Drilled Pier Details**

- A. Drilled pier shaft dimensions and top elevations shall be in accordance with foundation design calculations and drawings.
- B. The drilled pier shaft bearing, or bottom elevation shall be at the elevation indicated, unless it is determined by the Customer that the bearing elevation should be adjusted.
- C. The excavated pier shaft shall be drilled to required dimensions and elevations as indicated. Sidewall stability will be maintained during drilling and extend excavation to suitable material.
- D. Inspection of each pier will be by The Customer's Project Representative and Contractor to determine suitability of supporting material for drilled piers.
- E. Remove from bottom of drilled piers, loose material or free water in quantities sufficient to cause settlement or affect concrete strength as determined by the Customer.
- F. Install temporary casing, where required, to prevent caving of drilled pier sides or excessive seepage.
- G. Dewater all drilled pier excavations prior to cleaning, inspection, and placing concrete.
- H. Each drilled pier must be inspected and approved by The Customer's Project Representative before any concrete may be placed.
- I. Dispose of any excavated material at locations approved for that purpose.

#### **3.38.1.7 Reinforcing Steel**

- A. Place reinforcement for drilled piers in accordance with foundation design documents.
- B. Place bars as shown on foundation drawings with concrete cover of not less than 3-inches where exposed to soil.
- C. A reinforcing cage shall be designed as a structural element and braced to retain its configuration throughout the placing of concrete and the extraction of the casing (if used) from the shaft.
- D. Dewater drilled piers and maintain the excavation free of water prior to placing concrete.
- E. Place concrete immediately after final inspection.

- F. Place concrete immediately after completion of excavation and after The Customer's Project Representative has completed his inspection. Do not leave uncased excavations open overnight.
- G. Free fall concrete (not over 6 feet) may be used provided it is directed through a hopper, or equivalent; such that fall is vertical down center of shaft without hitting sides.
  - 1. Vibrate concrete only after casing, if used, has been pulled.
- H. Place concrete in pier in one continuous pour operation from bottom to top.
- I. The Customer's Project Representative will provide inspection during the removal of casing and placing of concrete.
  - 1. Withdraw casing, if used, only as shaft is filled with concrete.
  - 2. Always maintain an adequate head of concrete to balance outside soil and water pressure above the bottom of the casing during withdrawal.
  - 3. Specific procedures that the Contractor will follow to accomplish this objective shall be submitted for approval.
- J. Where the casing is removed, provide specifically designed concrete with a minimum slump of 5-inches and with a retarder to prevent arching of concrete (during casing pulling) or setting concrete until after casing is pulled.
  - 1. Check concrete level prior to, during, and after pulling casing.
  - 2. Pull casing before slump decreases below 5-inches as determined by testing.
- K. During casing extraction, upward movement of the reinforcing steel shall not be permitted. Downward movement should not exceed 2-inches per shaft length.
- L. Remove all water and concrete contaminated with soil, or water before resuming concrete placement.
- M. Center reinforcing cages in the drilled pier excavation and suspend them in an approved manner prior to placement of concrete to the cutoff elevation.
- N. Leave forms on pier for a period of three days.
- O. Set anchor bolts to the manufacturer's required tolerances, using substantial templates or other approved method.

### **3.38.2 Concrete, Forms and Reinforcement**

#### **3.38.2.1 General**

- A. This RFP includes concrete, forms, and steel reinforcement.
- B. This includes drilled pier foundations with square caps for steel structures, concrete pads for transformers and breakers, equipment shelter and tower foundations, and cable trenches.

#### **3.38.2.2 Quality Assurance and Applicable Standards**

- A. American Concrete Institute (ACI)
  - 1. ACI 304 - Recommend Practice for Measuring, Mixing, and Placing Concrete.
  - 2. ACI 305 - Committee Report on Hot-Weather Concreting.



3. ACI 306 - Committee Report on Cold-Weather Concreting.
4. ACI 315 - Manual of Standard Practice for Detailing Reinforced Concrete Structures.
5. ACI 318 - Building Code Requirements for Reinforced Concrete.

**B. American National Standards Institute (ANSI)**

1. B 1 8.2.1 - Square and Hex Bolts and Screws, Including Askew Head Bolts, Hex Screws, and Lag Screws.
2. B 1 8.2.2 - Square and Hex nuts.

**C. American Society for Testing and Materials (ASTM)**

1. Midwest Concrete Industry Board (MCIB)
2. A36 - Structural Steel.
3. A82 - Cold-Drawn Wire.
4. 85 - Welded Steel Wire Fabric for Concrete Reinforcement.
5. A307 - Low-Carbon Steel Externally and Internally Threaded Standard Fasteners.
6. A615 - Deformed Billet Steel Bars for Concrete Reinforcement.
7. C31 - Making and Curing Concrete Compression and Flexure Test Specimens in the Field.
8. C33 - Concrete Aggregates.
9. C39 - Compressive Strength of Cylindrical Concrete Specimens.
10. C94 - Ready-Mixed Concrete.
11. C 143 - Slump of Portland Cement Concrete.
12. C 150 - Portland Cement.
13. C309 - Liquid Membrane-Forming Compounds for Curing Concrete.

**D. Equipment and Materials**

**1. Concrete Materials**

- a. Cement must conform to ASTM C 150.
- b. Portland cement Type 1.
- c. Water shall be clean and free from injurious amounts of oil, acids, alkaline, or other deleterious substances. Any potable drinking water will be acceptable.
- d. Fine Aggregates such as Clean natural sand. Manufactured sand may be used upon written approval of The Customer's designee. They shall Conform to ASTM C33.
- e. Coarse aggregates such as Clean crushed stone or processed gravel, not containing organic materials shall conform to ASTM C33.
- f. 4-6 percent air shall be used in all concrete.
- g. Water reducing admixture shall conform to ASTM C494, Type A.

**2. Concrete Mix**

- a. Ready-mixed Concrete shall meet requirements of ASTM C94, and of materials and proportions specified.
  - b. Ready-mixed concrete plant shall be subject to approval of The Customer's Project Representative.
- 3. Form materials**
  - a. Exterior grade plywood minimum 5/8 inch thick.
  - b. Approved wood fiberboard.
  - c. Dressed lumber, free of loose knots.
  - d. Form ties shall be approved break-back type.
- 4. Steel Reinforcement**
  - a. Reinforcement bars shall conform to ASTM A615, Grade 60 for all bars No. 4 or larger.
  - b. Tie and-all No.3 bars shall conform to ASTM A615, Grade 40.
  - c. Welded wire fabric shall conform to ASTM A185, using bright basic wire conforming to ASTM A82. Wire gauge No. 11 or smaller shall be galvanized.
- 5. Anchor Bolts**
  - a. All anchor bolts required for complete installation shall be provided.
  - b. Anchor bolts and accessories shall conform to ASTM A307 using A36 steel.
  - c. Use hexagonal bolts and nuts conforming to ANSI B 1 8.2.1 and B 1 8.2.2.
  - d. All exposed area of anchor bolts and nuts, plus a minimum of three inches of embedded area, shall be hot-dipped galvanized.
  - e. Install as indicated on foundation drawings.

**E. Performance**

- 1. Field Testing**
  - a. Field testing of concrete and making of the concrete test cylinders will be performed by an independent testing laboratory approved by the Customer's Permit Department.
- 2. Laboratory Testing**
  - a. Laboratory for testing shall be selected and paid by the Contractor.
  - b. Laboratory will furnish cylinder molds with cap seals or adequate means of identification.
  - c. Cylinders shall be tested conforming to ASTM C39.
    - 1) Average strength of two test cylinders (at 28 days) shall be used as result of the test.
    - 2) Break one test cylinder after 7-days curing, one after 14-days, and two after 28-days.
      - a) Results shall be provided to the Project Representative in a formal report. A copy shall be provided to the Consultant and Contractor.
- 3. Low Strength Concrete**

- a. Low strength is defined as concrete whose 7-day and 14-day test (average of 2 cylinders) is less than 70% and 85%, respectively, of the specified minimum 28-day compressive strength.
- b. Concrete shall remain accessible with no other work performed that relates to or depends upon the questionable concrete until a formal decision as to the disposition of the concrete is given by the Customer's Project Representative.
- c. Low strength concrete shall be removed and replaced if requested by the Customer's designee.

#### **4. Preparation and Placing of Concrete**

- a. Clean bonding surfaces free from laitance and foreign materials.
- b. Place concrete on properly prepared and unfrozen sub grade and only in dewatered excavations.
- c. Do not deposit partially hardened concrete or concrete contaminated by foreign materials.
- d. Placing the concrete shall Conform to ACI 304.
- e. Place concrete within 60 minutes after mixing, except The Customer's designee may extend the period to 90 minutes (maximum) dependent upon weather conditions.
- f. Place in horizontal layers not exceeding 18-inches.
- g. Vibrate concrete to produce solid mass without honeycomb or surface air bubbles.

#### **5. Curing of Concrete**

- a. Cure with liquid membrane-forming compound conforming to ASTM C309, Type I. Apply per manufacturer's recommendations.
- b. Apply curing compound to all exposed surfaces immediately after removing form or after finishing concrete.
- c. Keep formwork wet until stripped.
- d. Placing Concrete in Cold Weather
  - 1) Conform to the practice recommended in ACI 306 when the temperature is below 40-degrees F or is likely to fall below 40-degrees F during a twenty-four-hour period after placing.
  - 2) Protect pier caps and other concrete from freezing using insulating blankets.

#### **6. Placing Concrete in Hot Weather**

- a. Conform to practices recommended in ACI 305 when temperature is 90-degrees Fahrenheit or above or is likely to rise above 90-degrees Fahrenheit within a twenty-four-hour period after placing.

#### **7. Concrete Construction Joints**

- a. Locate where indicated. Conform to AC 318.
- b. Clean and break laitance or other foreign material from bonding surface. Bed with 1-inch of grout for bonding in horizontal joints.
- c. Concrete Surface Float Finish

- 1) Compact, accurately screed, and wood float all slabs to a true uniform surface.
- 2) Test surface with straightedge and eliminate high and low spots of more than 1/8-inch in 10 feet.
- 3) Use this finish in addition to the finishes specified below for all surfaces as indicated.
- 4) Use a final finish for footing slabs not exposed.

**8. Concrete Hand-troweled Finish**

- a. Finish surface as in Float Finish and in addition, trowel and steel trowel to obtain a smooth dense finish after concrete has hardened to ring under the trowel.
- b. Use this finish on all floors, slabs, and equipment bases not specifically designated for a different finish.
- c. Concrete Broom Finish
  - 1) Finish surface as in Float Finish and, in addition, draw a stiff bristled broom across the previously floated surface.
  - 2) Corrugations shall be uniform in appearance, not more than 1/16-inch in depth and shall be perpendicular to direction of traffic.
  - 3) Use this finish on all outdoor slabs subject to vehicular or pedestrian traffic and areas to receive grout.

**9. Concrete Burlap Finish**

- a. Apply burlap surface treatment to exposed edges of slabs, curbs and foundations.
- b. Wet and fill all voids using mortar with the same sand-cement ratio as original concrete. Use approximately 20 percent white cement to match concrete color.
- c. Strike off all excess mortar flush with the surface using a burlap or canvas cloth with a circular motion.
- d. Remove all rough spots and rub with cloth to leave a surface of uniform texture and appearance.
- e. Finish shall result in a coating of mortar that will fill all small voids and air holes leaving a smooth surface.
- f. Cure as specified under Curing Concrete.

**10. Defective Concrete Surface Treatment**

- a. After removal of forms, remove all fins, projections and form ties.
- b. Grout and cure all voids, damaged areas, and tie holes.

**11. Concrete Forms**

- a. Treat forms with an approved oil or lacquer prior to placing reinforcement.
- b. Wet forms with clean, clear water prior to placing concrete.
- c. Adequately brace and stiffen forms to prevent deflection and settlement.

**12. Steel Reinforcement**

- a. Place accurately, tie at intersection, and support on chairs. Conform to ACI 318.

- b. Tie securely with 16 gauge or larger annealed iron wire.
- c. Splice steel not less than 30 bar-diameters for A615, Grade 40, and 42 bar-diameters for A615, Grade 60, unless otherwise indicated.
- d. Splice plain bars not less than twice that for deformed bars.
- e. Lap welded wire fabric not less than the length of one mesh.
- f. No.3 bars to be Grade 40, with all others to be Grade 60.
- g. Provide  $\frac{3}{4}$ -inch chamfer for all exposed edges of concrete, vertical and horizontal.

### **3.39 Fences and Gates (Chain-Link Security Type)**

#### **3.39.1 General**

##### **3.39.1.1 Quality Insurance and Applicable Standards**

- A. Federal specification RR-F-191 - Fencing, wire and post, metal and gates, chain-link fence fabric, chain-link and accessories.
- B. RR-F-191 - Fencing, wire and post, metal and gates, chain-link fence fabric, chain-link and accessories.
- C. RR-F-221 - Fencing, wire, barbed wire, woven-wire and netting, fence post and accessories.
- D. All installed fences and gates must meet Category IV wind ratings and be designed by a Professional Engineer.

#### **3.39.2 Requirements**

**3.39.2.1** Manufacturer's standard materials where such materials conform to these specifications or have been approved by The Customer.

**3.39.2.2** Conform to FS RR-F-191 except as indicated or specified otherwise.

**3.39.2.3** Fence height – 8 feet high galvanized chain link with 3-strand barbed wire at top (9½ feet overall height).

**3.39.2.4** Gate widths as indicated on layout drawings.

**3.39.2.5** Finish for fence framework and appurtenances (excluding fabric) – Galvanized with minimum weight for zinc per square foot as follows:

- A. Pipe – 1.8 ounces.
- B. Hardware and accessories – conform to FS RR-F-191.
- C. Barbed wire – 0.80 ounce.

##### **3.39.2.6 Finish for Fence Fabric**

- A. Galvanized per ASTM A392, Class-2 with 1.8-ounce, minimum weight, for zinc per square foot or, aluminum coated per ASTM A491, Class-2 with 0.40- ounce, minimum weight, for aluminum per square foot.
- B. All fence and gates to have 3-strand barbed wire at top.
- C. All materials furnished shall comply with the above requirements.

##### **3.39.2.7 Fence Fabric**

- A. No.9 gauge, 2-inch diamond mesh chain-link fabric.
- B. Top and bottom selvage twisted and barbed.
- C. Fabric fastenings of 9-gauge galvanized wire ties.

#### **3.39.2.8 Post, Top Rail, and Braces**

- A. Post
  - 1. End, angle, corner or pull posts – 3-inches O.D. at 5.79 pounds per foot.
  - 2. Line posts – 2.5-inches O.D. at 3.65 pounds per foot.
- B. Top Rail
  - 1. 1.625-inch O.D. standard weight steel pipe.
  - 2. 18-foot minimum length of each section.
- C. Expansion Type Coupling for Each Joint.
  - 1. Diagonal truss rods 3/8 inch in diameter equipped with truss tightened.
  - 2. Horizontal braces – 1.660-inch O.D. at 2.27 pounds per foot.
- D. Post tops shall be designed as a weather tight closure cap for tubular post.
- E. Top Rail Expansion Type Coupling for Each Joint.
- F. Malleable Iron or Pressed Steel Barbed Wire Supporting Arms
  - 1. Single arm at 45-degrees with vertical, sloping to outside of fence.
  - 2. Constructed for attaching three rows of barbed wire to each arm and designed as a weather tight closure cap for tubular posts.
  - 3. Designed for 200-pound minimum pull-down load.
  - 4. Attached to steel posts or integral with post top.
  - 5. Provided with openings to receive top rail.
- G. Malleable Iron or Pressed Steel Stretcher Bars
  - 1. One-piece, full height of fabric.
  - 2. 3/6-inch x 3/4-inch, galvanized.
  - 3. Bands of galvanized steel or malleable iron.
- H. Malleable Iron or Pressed Steel Bolts
  - 1. Zinc coated.
  - 2. Conform to FS FF-B-575.

#### **3.39.2.9 Barbed Wire**

- A. Two-strand, 12½ gauge wire with 4-point barbs 5 inches O.C.
- B. Conform to FS RR-F-221, Type 1, Style 2.
- C. Three rows required on all fence and gates.

#### **3.39.2.10 Gates**

- A. Framing
  - 1. Frames of tubular members, 2-inch O.D. at 2.72 pounds per foot.
  - 2. Intermediate horizontal and vertical members for proper gate operation and for attachment of fabric, hardware and accessories.

3. Frames assembled by welding or watertight galvanized steel rigid fittings.
  4. Diagonal cross bracing of 3/8 inch diameter adjustable truss rods to provide frame rigidity.
  5. Diagonal cross bracing of 3/8 inch diameter adjustable truss rods to provide frame rigidity.
- B.** Gate hardware hinges shall be of pressed or forged steel, or malleable iron, non-lift-off type, 1 to 1.2 pair per leaf.
- C.** Latches and Gate stops – Double Leaf.
1. Plunger-bar type latch, full gate height, designed to engage gate stop of flush-plate type with anchors.
  2. Locking device and padlock eyes an integral part of latch.
  3. Keeper to automatically engage gate leaf and secure free end of gate in full 90-degrees open position.
- D.** Latches – Single Leaf
1. Forked type to permit operation from either side of gate.
  2. Padlock eye as integral part of latch.

#### **3.39.2.11 Performance and Fence Installation**

- A.** Follow general contour of ground and properly aligned.
- B.** Fence Post
1. Set in concrete retaining wall. Trowel finish tops of footings and dome to direct water away from posts.
  2. Install plumb and in straight alignment.
  3. Temporarily brace until concrete in bases has set.
  4. Spaced 10 feet center-to-center, maximum.
- C.** Post Bracing
1. Installed at each end, at the gatepost, and on each side of corner posts.
  2. Install after the concrete in post base has set.
  3. Install so posts are plumb when diagonal rod is under tension.
- D.** Top Rails
1. Run continuously through post caps or barbed wire supporting arms.
  2. Install expansion coupling at each joint.
- E.** Tension wire shall be weaved through the fabric and tie to each post with minimum 6-gauge galvanized wire.
- F.** Fabric
1. Stretch taut with equal tension on each side of line posts.
  2. Fasten to top rail and steel posts with wire ties.
  3. Space wire ties at 12-inches O.C. maximum on posts and at 24-inches O.C. maximum on top rail.
- G.** Stretcher Bars

1. Thread through or clamp to fabric 4-inches on center.
  2. Secure to posts with metal bands spaced 15-inches on center maximum.
  3. Install at each gate, pull and end post, and each side of corner post.
- H. Barbed Wire
1. Attach three rows to each barbed wire supporting arm.
  2. Pull wire taut and fasten securely to each arm.
  3. Install four rows above fabric and on extended gate end members of gates.
- I. Gates
1. Install plumb, level, and free swinging through full opening without interference.
  2. Install all hardware, including keepers, ground set items and flush plate in concrete to engage gate stop.
  3. Furnish and install gate alarms.
- J. Repairing Damaged Coatings
1. Repair any damaged coating in the shop or field by recoating with compatible and similar coating.
  2. Apply per manufacturer's recommendations.
  3. Furnish and install Danger signs as approved by the Customer's designee.

### **3.40 Crushed Rock Surface**

**3.40.1** This section includes crushed rock surface and method of depositing for the placement of permanent crushed rock surfacing in equipment shelter areas.

#### **3.40.2 Applicable Standards**

##### **3.40.2.1 American Society for Testing and Materials**

- A. C117 – Test for Materials Finer than No. 200 Sieve in Mineral Aggregate by Washing.
- B. C131 – Test for Abrasion of Coarse Aggregates by Use of Los Angeles Machine.
- C. C136 – Test for Sieve or Screen Analysis of Fine and Coarse Aggregates.
- D. D423 – Test for Liquid Limit of Soils.
- E. D75 – Sampling Stone, Slag, Gravel, Sand and Stone Block for Use as Highway Materials.

##### **3.40.2.2 American Association of State Highway and Transportation Officials (AASHTO)**

- A. T99–Test for the Moisture Density Relations of Soils Using a 5.5-Pound Rammer and a 12-Inch Drop.

##### **3.40.2.3 Sample and Testing**

- A. Test to determine conformance with all requirements for material quality and properties specified herein will be performed by an independent laboratory approved by the Customer and compensated by the Contractor.
- B. Obtain representative samples of material in accordance with ASTM D75 for testing. Furnish the Customer's designee sufficient materials for testing from each sample at the time obtained.



- C. Furnish specific schedule for sampling to provide the Customer's designee the opportunity to observe sampling.

**3.40.2.4 Submittals.** Includes, but not limited to, the following:

- A. Test result reports from testing laboratory indicating conformance with the specifications.
- B. Certification of conformance with the specifications.

**3.40.3 Materials**

**3.40.3.1** Crushed rock surface shall consist of  $\frac{3}{4}$ -inch aggregate placed on top of a 6-mil polyvinyl barrier.

**3.40.3.2** Aggregate shall consist of Crushed limestone or crushed natural gravel, free from lumps or balls of clay or other objectionable matter, and reasonably free from thin and elongated pieces of dirt.

**3.40.3.3** Aggregates shall consist of angular fragments, durable and sound, and shall be reasonably uniform in density and quality.

**3.40.4 Performance and General Requirements**

**3.40.4.1 Stockpiles**

- A. Only with approval of the Customer's designee in specified locations.
- B. Clear and level storage sites prior to stockpiling.
- C. Place in a manner and at locations designated by the Customer, providing separate stockpiles for materials from separate sources.

**3.40.4.2 Preparation of Sub-Grade**

- A. Clean off all foreign substances.
- B. Correct any ruts, depressions, or soft yielding spots and areas with inadequate compaction.
- C. Treat all sub-grade areas with soil sterilant.
- D. The Customer's Project Representative will inspect, prior to placing crushed rock surface, for adequate compaction and surface tolerances.

**3.40.4.3 Grade Control**

- A. Establish and maintain by means of grade stakes, properly spaced so string lines may be stretched between stakes.

**3.40.4.4 Placing of Materials**

- A. Deposit and spread material in a uniform lift/layer and compact to the thickness indicated and as specified. Spread material uniformly on the prepared sub-grade from moving vehicles or spreader boxes.
- B. Level material to the required contour and grades.
- C. Remove those portions of the layer, which became segregated or mixed with sub-grade material in spreading and replace with new material as required by the Customer's designee.
- D. Remove and repair sub-grade areas damaged during application of the crushed rock surface.

**3.40.4.5 Shaping and Compacting Materials**

- A. Compact layers no less than 3-inches or more than 6-inches thick.
- B. Roll to specified compaction requirements throughout full depth of layer with power rollers, rubber-tired rollers or combination.
- C. Shape and smooth by blading and rolling with power roller, rubber-tired roller, or both.
- D. Hand tamp in places not accessible to rolling equipment.
- E. Base compaction on weight per cubic foot of material passing ¾-inch sieve and compact to at least 100 percent of maximum density at optimum moisture.
- F. Determine and control compaction in accordance with AASHTO T99.
- G. Surface shall show no deviation in excess of 3/8-inch in any 10 feet when tested with a 10-foot straightened applied parallel with and at right angles to the center lines of the paved area.
- H. Correct any deviation specified in excess of this amount by loosening, adding or removing material, reshaping, watering, and compacting as requested by the Customer's designee.

### **3.41 Herbicide Applications**

#### **3.41.1 Equipment and Materials**

- 3.41.1.1 Sprayers and applicators shall be suitable for intended use.
- 3.41.1.2 Mix herbicide per manufacturer's recommendations.
- 3.41.1.3 Herbicide shall be Krover (1) as manufactured by DuPont, Inc., or approved equal.
- 3.41.1.4 Do not apply herbicide if it is too windy or where other adverse weather conditions exist.
- 3.41.1.5 Apply at a rate of 10 pounds of product per acre, or in accordance with manufacturer's recommendations.

#### **3.41.2 Performance**

- 3.41.2.1 Apply only after final sub-grade has been established.
- 3.41.2.2 Apply before installation of vegetation barrier cloth and placement of crushed rock.
- 3.41.2.3 Follow manufacturer's recommendations on timing of application with respect to weather and barrier/crushed rock placement.

### **3.42 Minimum Subscriber Specifications**

- 3.42.1 A list of radio/subscriber needs by agency is attached.
- 3.42.2 Requirements for Subscriber Equipment: This includes all portable, mobile, and control station equipment.
  - 3.42.2.1 All radio equipment proposed by Vendors and installed by the Contractor shall be FCC type accepted under Part 90 of the FCC Rules and Regulations.
    - A. Vendor shall submit documentation verifying this type of acceptance.

\*Attach FCC Type Acceptance Documentation

**3.42.2.2** All supplied equipment proposed by the Vendor and provided/installed by the Contractor shall be in current production. No equipment announced as "end-of-life" or "end-of-support" are permitted to be proposed. Vendor shall supply a current end-of-support and end-of-life product list.

\*Attach End-of-Support/End-of-Life Product List

### **3.42.3 APCO P25 Related Specifications**

**3.42.3.1** The Vendor shall provide documentation, and demonstrate P25 operational compliancy with, minimally, BK Technologies (RELM), EF Johnson/Kenwood, L3Harris, Motorola Solutions, & Tait portable, mobile, and control station radios. These radios must have been tested and certified to function on its proposed infrastructure technology. Documentation of P25 CAP certification shall be submitted as part of the response.

\*Attach P25 CAP certification documentation

**A.** The Vendor shall also describe those processes and methods it employs to confirm where software releases and hardware changes to its products, included in the proposal, are verified for continued compatibility with P25 equipment manufactured and offered for purchase by others.

\*Attach P25 Compliance Management Documentation

**B.** Allow operations on P25 trunked and conventional (analog/P25) systems with priority scan of talk groups or channels on both system types in the same scan list.

**C.** Must meet APCO minimum recommendations and EIA/TIA standards for P25 Public Safety digital trunked radio systems. Furnished equipment must be operable on conventional and both Phase 1 and Phase 2 infrastructures.

**D.** Offer digital voice, using an Advanced Multi-Band Excitation +2 (AMBE+2) or Newer P25 Phase 1 and Phase 2 vocoder.

**E.** All equipment proposed shall be capable of standards-based voice encryption: federally approved P25 AES 256 coding to provide enhanced security during transmission and reception of sensitive communications; DES-OFB and other modes of voice encryption may be proposed as optional.

**3.42.3.2** Support special services, i.e. encrypted voice, Computer Aided Dispatch (CAD), and Automatic Vehicle Location (AVL).

\*Attach Special Services Documentation

**3.42.3.3** Temperature Range: -30 °C to +60 °C Humidity: 95% relative humidity at 50 °C

**3.42.3.4** All radio units are expected to be equipped with electronic, alphanumeric display(s) of a minimum of eight characters, used to readily identify selected talk groups and operating modes, (i.e. clear voice, encrypted voice, system availability, channel/talk group selection, incoming user ID, call alerts and operational status such as scan and channel busy).

**3.42.3.5** Talk Group Selection must be selectable by a rotary-knob style input. Additional selection types are optional.

**3.42.3.6** Talk Group Capacity: 16 minimum, per system

**3.42.3.7** Channel Capacity: 500 channels (Single band radio), 700 channels (Multi-band radio)

**3.42.3.8** The volume control is expected to be fully adjustable from zero to maximum audio output level.

**3.42.3.9** Radio operating information shall be contained in an electrically erasable memory device. Unit will be fully programmable from a laptop/desktop computer, via the accessory receptacle.

**3.42.3.10** Include transmit time out timer to warn the user that the radio may be transmitting longer than a predetermined time limit and then disable the transmitter.

#### **3.42.4 Programming and Key Loading**

**3.42.4.1** The vendor shall provide to the Customer no less than five sets of radio programming software, appropriately configured laptop computers, and all other support equipment and special cables necessary to program and encrypt (key load) each type of radio and control station equipment/device supplied by the Proposer.

\*Attach Programming Documentation

**3.42.4.2** The vendor shall provide to the Customer no less than one Key Loading device and appropriate cables as are necessary to manage encryption on all proposed equipment.

\*Attach Key Loading Documentation

**3.42.4.3** Radio operating information shall be contained in an electrically erasable memory device.

**A.** Unit will be fully programmable from a laptop/desktop computer, via the accessory receptacle, or remotely over WiFi or Bluetooth.

#### **3.42.5 Portable Radio Equipment Specifications**

**3.42.5.1** Size, Weight, and Durability Specifications

- A.** Small enough to be carried and manipulated with both bare and gloved hands.
- B.** Lightweight enough to limit fatigue while being carried for a full twelve (12) hour shift.
- C.** Include heavy duty construction and weather-sealed cases to meet Military Standards 810 D, E, F and G for shock, vibration, dust, humidity, high/low temperature and blowing rain.

\*Attach MIL-STD Documentation

- D.** Include top mounted rotary controls with positive stops for volume and channel selection. Control placement must allow gloved hand operation, as is typically needed by the fire service or during cold weather events.
- E.** Contain no protruding push-to-talk switch, thereby preventing accidental transmitter operation or potential damage to the switch caused by impact.
- F.** Include a protected emergency button to allow easy access when needed but incorporating an ergonomic design in which the emergency function could not be accidentally activated.

#### **3.42.5.2 Antenna, Accessory, and Carrying Case Specification**

**A.** An accessory receptacle shall be provided for the connection of external devices such as remote microphones or combination remote speaker/microphone units (with or without antenna), vehicular adapters, and mobile data computer equipment.

\*Attach Portable Radio Accessory Documentation

**B.** Radios are expected to be capable of operation with traditional speaker/microphones as well as sub-miniature radio surveillance accessories.

- C. All speaker microphones must have noise cancelling capabilities and 3.5mm jack for the ability to use a Receive-Only earpiece.
- D. Carrying case alternatives should include leather carrying case with swivel mounts, as well as chemical resistant cases (nylon or similar plastic material) for use by hazardous material groups.

\*Attach Portable Radio Carrying Case Option Documentation

- E. The antenna should be physically short and in keeping with the size of the radio package. Units are expected to be operable, within the coverage area using the smallest unity-gain flexible antenna available.

\*Attach Antenna Specifications Documentation

- F. Each Portable radio should be supplied with, at a minimum, a belt clip

### **3.42.5.3 Electrical Specifications**

#### **A. Transmitter specifications are as follows:**

1. Frequency Range: 764 to 870
2. RF Output Impedance: 50 ohms
3. Output Power: 3 W 700/800MHz
4. Frequency Stability: 1.5 PPM from -28°C to +58°C
5. Emissions: 16K0F3E; 11K0F3E; 8K10F1D; 8K10F1E; 9K80F1D, 9K80D7W or comparable Phase 2 Emission
6. Modulation Deviation: +/-2.5KHz for 12.5KHz channel; +/-3 KHz for NPSPAC;
7. Audio Response: +/-3 dB of a 6 dB/octave
8. Audio Distortion: Less than 2% at 1 KHz
9. Spurious/Harmonic: -50 dB 12.2.3.1.10. Hum and Noise: -35 dB 12.2.3.1.11. Duty Cycle: Intermittent

#### **B. Receiver specifications are as follows:**

1. Frequency Range: 764 870MHz
2. Channel Spacing: 12.5/6.25 KHz/NPSPAC
3. Adjacent Channel: -60dB (Single band radio), -65dB (Multi band radio) Rejection
4. Digital Sensitivity: 5% BER: 0.25 µV
5. Intermodulation Rejection: -72 dB (Single band radio) -74 dB (Multi-band radio)
6. Spurious Response Rejection: -72 dB (Single band radio) -70 dB (Multi-band radio)
7. Frequency Stability: 1.5 PPM from -30° to +60°C
8. Audio Output: 1.5 W12.2.3.2.9. Audio Distortion: No more than 2% at 1 KHz12.2.4. Power and Charging Specifications

#### **C. Battery Pack Specifications**

1. Radio unit battery packs are expected to operate to provide sufficient power for a full twelve-hour work period.

\*Attach Power Calculations Documentation

2. Environmental: MIL-STD 810 C, D, E, F and G for shock, vibration, humidity and high/low temperature.
  3. Temperature Range: -30°C to +60°C
  4. Humidity: 95% relative humidity at 50°C
  5. The battery packs should provide a reasonably long-life (i.e., two years) within the typical operational profile of 5% transmit, 5% receive and 90% standby/on.
- D. A range of accessories is expected to be available to support in-field battery charging.
1. Provide single-unit 120VAC rapid charger capable of fully charging a discharged high-capacity battery pack within a one-hour period.
  2. Provide alternative 120VAC multi-bank chargers with a minimum of 6 slots.
  3. Provide optional single-unit 12VDC rapid charger for vehicular operation.

### **3.42.6 Mobile Radio Equipment Specifications**

**3.42.6.1** Front mount and rear mount, dual control-head with single rear mount radio and dual radios with single control-head configurations must be available to meet the needs of the different public safety users. Rear mount radios may require weatherproof control heads, speakers, microphones, hand-held controllers, and other accessories (specific for fire operations).

\*Attach Mounting Options Documentation

**3.42.6.2** Be capable of providing 9.6kb/s data-messaging transmission capabilities.

**3.42.6.3** Primary Input Voltage: 11 to 16 VDC, negative ground Battery Drain: (a) Standby: 1.5 amperes, max. (b) Receive: 4.0 amperes, max. (c) Transmit: 15.0 amperes, max.

### **3.42.7 Electrical Specifications**

#### **3.42.7.1 Transmitter Specifications**

- A. Frequency Range: 764 to 870MHz
- B. RF Output Impedance: 50 ohms
- C. Output Power: 30 W (700MHz)/35W (800MHz) (Single band radio); 50 W (VHF) (Single Band Radio); 35 W (Multi-band radio)
- D. Channel Spacing: 12.5/6.25 KHz/NPSPAC
- E. Spurious/Harmonic: At least 64 dB below carrier
- F. Frequency Stability: 1.5 PPM from -30°C to 60°C
- G. Frequency Speed: 24MHz (700MHz)/18MHz (800MHz)
- H. Emission: 16K0F3E; 11K0F3E; 8K10F1D; 8K10F1E; 9K80F1D, 9K80D7W or comparable Phase 2 Emission
- I. Modulation Deviation: +/- 2.5KHz for 12.5KHz Channel; +/- 3KHz for NPSPAC
- J. Audio Distortion: Less than 5% at 1KHz
- K. Audio Response: +/-3dB of a 6dB/octave pre-emphasis characteristic from 300Hz to 3KHz
- L. Hum and Noise: -45dB

M. Duty Cycle: Transmitter 20%

#### **3.42.7.2 Receiver Specifications**

- A. Channel Spacing: 12.5KHz/6.25KHz; NPSPAC
- B. 0.25  $\mu$ V 5% Bit error Rate (BER)
- C. Adjacent Channel: Rejection: -60dB
- D. Frequency Stability: 1.5 PPM from -30° to 60°C
- E. Frequency Spread: 24MHz (700MHz); 18MHz (800MHz)
- F. Intermodulation: -75dB (Single band radio)
- G. Rejection: -80dB (Multi band radio)
- H. Spurious Response Rejection: -75dB (Single band radio) -80dB (Multi band radio)
- I. Audio Output: 10 W (Single band radio), 12 W (Multi-band radio)
- J. Audio Distortion: No more than 2% at 1KHz
- K. Duty Cycle: Receiver 100%

#### **3.42.8 Control Station Equipment Specifications**

##### **3.42.8.1 Power Specifications**

- A. Available either as an integrated 120VAC powered desktop radio rack or a remotely located, AC powered radio package with separate remote-control unit.
- B. Primary Input Voltage: 120 VAC, 60 Hz, single-phase with 3-conductor grounded line cord.
- C. Control station and control unit shall have an alternative provision to operate from standby 12VDC source upon failure of AC power.
- D. Optional Battery: 12 VDC designed for 8 hrs. of operation

##### **3.42.8.2 Control and Location Specifications**

- A. Alternatives shall be provided for local and remote-control operation of the control station.  
\*Attach Local and Remote-Control Option Documentation
- B. All Control Stations proposed for interoperability solutions must be capable of a minimum of 16 channel/talkgroup steering through the base station gateway by a dispatch console.
- C. Control station packaging shall incorporate sufficient electromagnetic shielding of radio and power supply components to allow multiple control stations to be located at the same site without causing unit-to-unit interference.

##### **3.42.8.3 Electrical Specifications**

- A. Transmitter Specifications
  - 1. Channel Spacing: 12.5/6.25 KHz, NPSPAC
  - 2. RF Power Output: 18 W (700 MHz); 30 W (800 MHz)
  - 3. RF Output Impedance: 50 ohms
  - 4. Spurious/Harmonic: At least 70 dB below

5. Frequency Stability: 1.5 PPM from -25 °C to 60 °
6. Emission: 16K0F3E; 11K0F3E; 8K10F1D; 8K10F1E; 9K80F1D, 9K80D7W or comparable Phase 2 Emission
7. Modulation Deviation: +/-2.5KHz for 12.5KHz channel, +/-4 KHz NPSPAC
8. Audio Distortion: Less than 2% at 1 KHz
9. Audio Response: +/-3 dB of a 6 dB-per-octave pre-emphasis, characteristic, 300Hz to 3KHz
10. Duty Cycle: Transmitter 20-80% 12.4.3.1.11. Hum and Noise: -35dB

#### **B. Receiver Specifications**

1. Channel Spacing: 12.5/6.25 KHz/NPSPAC
2. Adjacent Channel Rejection: -63 dB
3. Digital Sensitivity: 5% BER: 0.35  $\mu$ V
4. Frequency Stability: 1.5 PPM from -25 °C to 60 °C
5. Intermodulation Rejection: -75 dB
6. Spurious Response Rejection: -75 dB
7. Audio Output: Not less than 3W
8. Audio Distortion: No more than 2% at 1 KHz 12.4.3.2.9. Duty Cycle (EIA): Receiver 100%

### **3.42.9 Radio User Training**

**3.42.9.1** A comprehensive training program must be established by the Vendor in its Technical Submittal, to be implemented if selected as the Contractor.

**A.** This program would include not only user familiarization with physical features and functions of assigned radio equipment, but also instruction pertinent to the System's talkgroup structure and how the System's infrastructure establishes local, wide-area and outside interoperable call transactions.

**3.42.9.2** The Contractor's training program must include the necessary graphics, visual simulations, and printed media tools to establish an appropriate training process for users.

**A.** Training videos must be available to users on a private web-based portal, thereby allowing for individual refresher training.

**3.42.9.3** The Contractor must also supply technical assistance during the initial warranty period that allows for ongoing modifications to these training resources, to keep them in-step with additions and changes to the operable and interoperable resources within the System.

**3.42.9.4** The Vendor shall provide a detailed description of its proposed user training program.

**A.** Examples of training tools developed for similar P25 regional trunked and conventional radio configurations shall be provided within the Vendor's Technical Proposal Submittal.

\*Attach Training Description

**3.42.9.5** The Customer must approve all training curriculum prior to training.

**3.42.9.6** The Vendor must provide resumes of professional training staff.



\*Attach Training Staff Resumes

**3.42.9.7** The Vendor shall propose train-the-trainer subscriber training.

**3.42.9.8** Any additional training for specialized radios and equipment including accessories or application-based radios must be provided by the vendor.

**3.42.9.9** The Vendor shall provide training for the programming of all radios and features included in the Proposal.

### **3.43 Installation Guidelines**

#### **3.43.1 Contractor Project Management**

**3.43.1.1** Contractor will assign a Project Manager as a single point of contact between the Customer and the Contractor for the full duration of the project.

**3.43.1.2** The Contractor's PM shall conduct an initial Design Review Meeting whereby the project's order of task progression, site/facility layout details, tower engineering studies, coverage design and related items will be presented to The Customer for review, comment and approval for the Contractor to proceed with production tasks.

**3.43.1.3** During the period prior to the Design Review Meeting, the Contractor will initiate monthly progress meeting with the Customer whose purpose is to update on progress made in preparation for the Design Review Meeting.

**3.43.1.4** The Contractor's PM is responsible for developing and maintaining an updated Project Timeline.

**A.** Project Timeline updates/revisions, commencing with the Customer's official Notice to Proceed to the Contractor, shall be submitted by the PM on the last day of each project-month for review and approval by the Customer.

**B.** The monthly Project Timeline submittal shall depict:

1. Progress made per task in the preceding 30-day period;
2. Work/tasks to be accomplished in the next 30-day period;
3. Identification of critical path items and;
4. Work/tasks to be undertaken by the Customer (if any).

**C.** Coincident with the production of the updated Project Timeline, the Contractor's PM shall identify any known or anticipated issues that will cause a delay to the project's implementation schedule that are not within the Contractor's control.

1. Failure by the Contractor's PM to identify such issues in advance will negate any opportunity for schedule relief to the Contract's specified Project Completion Date.

**3.43.1.5** Failure by the Contractor to produce a monthly updated Project Timeline within the period specified herein will result in an automatic 7-day reduction of the Contract's specified Project Completion Date (or that Project Completion Date as previously modified by The Customer's executed Change Order if any).

**3.43.1.6** Any change in PM, anytime during the full duration of the project, must be approved by the Customer and the new PM shall be selected by the Customer via an interview process.

- 3.43.1.7** The Contractor's Key Personnel shall be approved by the Customer prior to assignment. The Customer reserves the right to require replacement of the Contractor's Key Personnel at any time during the project.

### **3.43.2 Engineering Drawings**

- 3.43.2.1** Contractor shall furnish detailed drawings at the project's initial Design Review Meeting and updated drawings prior to installation of each major portion of the System as follows:
- A.** Transmitter Site(s)
  - B.** Receiver Site(s)
  - C.** Site Antenna and Grounding System(s)
  - D.** Receiver Voter Equipment
  - E.** System Controller Equipment
  - F.** Dispatcher Console Equipment
  - G.** Fiber Optic Equipment Terminal(s)
- 3.43.2.2** Drawings shall, as a minimum, illustrate:
- A.** Relative rack/rack locations
  - B.** Equipment power wiring (primary and emergency)
  - C.** Equipment interconnection wiring (signal and control)
  - D.** Appropriate signal/voltage levels to facilitate alignment of level-sensitive components.
- 3.43.2.3** Civil drawings showing location details of equipment to be placed in existing or new facilities shall be provided by Contractor.
- 3.43.2.4** Contractor shall provide a comprehensive test record of alignment levels, settings and software versions installed in System. In addition, contractor shall provide service manuals for all System equipment furnished.
- 3.43.2.5** In addition, the Contractor shall conduct baseline noise floor site measurements and shall develop, plan and resolve any determination of site/system-induced noise degradation as caused by the Contractor's design or work.
- 3.43.2.6** The scope and detail of the comprehensive equipment test and acceptance plan shall be completed prior to Contract Execution with the Contractor.
- 3.43.2.7** Prior to the commencement of acceptance testing procedures, the Contractor shall ensure that all installed system equipment has been furnished or upgraded to the latest software releases available for those equipment items/groupings.
- 3.43.2.8** Contractor shall supply true copies of Final Project Record Documents, including the Engineering Drawings, software releases, and alignment details listed above, but amended to show system and equipment "as-built" at the time of acceptance by the Customer.
- 3.43.2.9** The documentation package shall include in this document submittal a Permissible Exposure Study, as required by the FCC, for each radio infrastructure site.
- 3.43.2.10** The total number of documentation sets to be provided shall include one site-specific set for each infrastructure site and three comprehensive System documentation sets for the Customer's use.

- 3.43.2.11** Final Project Record Documents must be submitted to the Customer within thirty days after system acceptance testing has been successfully concluded.
- 3.43.2.12** Submissions shall also include electronic versions of all documents submitted.
- 3.43.2.13** Final payment for Contracted services shall not be released by the Customer until this documentation submittal has been successfully completed by the Contractor and reviewed and approved by the Customer.

### **3.43.3 Workmanship**

- 3.43.3.1** All workmanship shall be in accordance with Industry-accepted best practices and the National Electric Code.
- 3.43.3.2** Work areas shall be maintained in a neat, orderly fashion.
- 3.43.3.3** Work sites shall incorporate Contractor-provided trash containers and residue of the work shall be discarded as the work is underway.
- 3.43.3.4** All sites will be cleaned up at the end of each workday, swept clean, tools picked-up, and walkways free of obstacles and obstructions.
- 3.43.3.5** The installation of audio, signal, data and control cables within equipment racks, enclosures, racks and cable trays must be properly routed such that wires/cables do not cross over each within cable bundles.
- 3.43.3.6** Cables must be properly labeled, routed and secured.
- 3.43.3.7** To the maximum extent possible, cables carrying AC power, low-level audio, RF and digital signals must be grouped separately.
- 3.43.3.8** All DC wiring, particularly those areas where battery terminals and power distribution buss bars are located, must incorporate insulation barriers to prevent the accidental short-circuiting of otherwise exposed conductors.
- 3.43.3.9** The Customer shall have the ability to temporarily stop work progress by the Contractor if workmanship falls below acceptable levels and shall have the authority to require the Contractor to remove and/or correct all observed instances of poor wiring practice, inappropriate use of installation materials and other obvious installation defects because of apparently poor workmanship.
- 3.43.3.10** The Customer shall provide the Contractor with approval to resume installation work activities once an agreement is reached to resolve observed workmanship defects.
- 3.43.3.11** The determination of Contractor workmanship acceptability, as well as the suitability of any proposed rework plans offered by the Contractor, shall remain with the Customer.

### **3.43.4 Equipment Storage**

- 3.43.4.1** The Contractor shall provide the necessary storage space and skilled labor needed to receive, inventory and maintain supplies and consumables throughout the term of the contract. Customer reserves the right to inspect and inventory equipment at any time.

### **3.43.5 Factory Staging**

- 3.43.5.1** The Customer shall require a full factory staging of the Contractor's radio configuration within the manufacturing facilities used by the Contractor.



**3.44.1.2** Upon contract award, the Contractor shall provide:

- A.** A detailed time schedule for the training of system managers, telecommunicators, radio managers and other personnel.
- B.** Contractor will supply time schedules for the orderly transfer of departments onto the system and the estimated time-period when the transfer could be completed.
- C.** A detailed repair maintenance training plan for the Customer's in-house technical staff members.
- D.** It shall encompass all operational elements of the System to include:
  - 1.** Network Controllers
  - 2.** Base Stations Gateways
  - 3.** Dispatch Consoles
  - 4.** Radio Control Stations, related appurtenances, and all third-party equipment.
  - 5.** This training shall be completed prior to the System's Acceptance Testing activity and is to be performed in the Customer's selected location.
    - a.** Training locations and dates will be determined between the Customer and the Contractor.
  - 6.** All curriculums for the training plan must be approved by the Customer prior to the commencement of training.
    - a.** The Contractor must provide training and identify necessary tools, to include test equipment and software, to the Customer's technical staff, as they would to their internal or contracted technical staff.
  - 7.** Coordinate the orderly transfer of services to the system network only after having successfully concluded equipment alignment and installation procedures, successful completion of the project's acceptance test, and completion of manager, telecommunicator, user, and staff training programs.

**3.44.1.3** Contractor must not dismantle or modify the existing trunked radio system without prior approval of the Customer.

**3.44.1.4** Some portions of the existing system may remain operational after acceptance of the new system.

**3.44.1.5** The Customer will notify the Contractor when elements of the old infrastructure equipment may be reallocated to meet interoperability needs or otherwise can be decommissioned.

- A.** It is the Contractor's responsibility to remove or relocate all the old infrastructure equipment.
- B.** The Customer desires a trade in value on any existing equipment that is part of current communications system.

**3.44.1.6** Contractor shall assist the Customer in preparing user talkgroups, initial priority levels and shall complete the necessary user equipment installation, programming and record keeping, as required. This activity must be completed prior to service cutover.

**3.44.1.7** All talkgroup structure documentation will be provided to the Customer by the Contractor.

**3.44.1.8** As part of contract negotiations with the successful Vendor, the Customer and successful Vendor will jointly develop a final comprehensive test and acceptance plan that addresses, minimally, the following major functionality and operability issues:

**A. Microwave Network**

1. Provide RF power and Receive measurements for the microwave;
2. Test path fade loss for each direction on each path of the microwave network;
3. Test for proper frequency, modulation, digital signaling and stability;
4. Verify data integrity on the microwave system including network components utilizing BER Testing.

**B. Transmitter Equipment**

1. Provide RF power stage measurements at different levels of the transmitter system such as transmitter, filters, combiner, cable, antenna, etc.;
2. Test RF components for specified insertion loss (i.e., transmission line return loss);
3. Test for proper frequency, modulation, digital signaling and stability;
4. Test and report of delivered audio quality and signal margins throughout proposed service area.

**C. Receiver Equipment**

1. Test of compliance to specifications of equipment provided;
2. Provide log of signal gain or loss to equipment within the receiver system such as antenna, cable, preamp, splitter, or receiver antenna port;
3. Test of audio quality and level (reciprocal of that required for the transmit path) of system balance;

**D. Console Audio/ System Controllers**

1. Test of compliance to manufacturer's published specifications of equipment proposed;
2. Test of audio quality and level;
3. Verification of network failure modes in response to forced failures of individual communications/ control lines and complete site failures complete written explanation is required;
4. Verification of compliance to TIA/EIA P25 ISSI/CSSI Standards that allow for seamless interoperability with P25 radio networks fielded by other manufacturers;
5. Bit error-rate and voiced audio quality testing of System infrastructure, backhaul and site-specific local area networking infrastructure;
6. Fade margin verification of microwave link segments as used to interconnect radio sites, network controllers and radio dispatch facilities;

**E. Dispatch Centers**

1. Provide written results of testing of operational features per dispatch position;
2. Test system operation during simulated failures of system components i.e. console electronics, power loss, etc.

**F. Third Party Vendor Equipment**

1. Provide functional testing and verification of any third-party equipment used;
- G. Contractor shall provide all test equipment, diagnostic services, documentation, software, personnel, vehicles and other items as necessary to test the delivered and installed radio network in accordance with the Contracted Test and Acceptance Plan, inclusive of operational features, to complete a total system functional test.
- H. The Vendor shall disclose test procedures and equipment that will be used to verify radio system coverage as specified in Section 3.13 Coverage Criteria.
- I. The Vendor shall attach to their response a sample test and acceptance plan that is representative of the scope and complexity of the proposed system radio network infrastructure.

\*Attach Sample Test and Acceptance Plan

### **3.44.2 Implementation**

- 3.44.2.1** Contractor is responsible for the provisions and cost of warehousing, insurance, storage and security of radio network infrastructure prior to and during the construction and installation phases of the project.
- 3.44.2.2** Prior to installation of any portion of system, the Customer must approve Contractor furnished detail drawings as specified in Section 3.43 Installation Guidelines.
- 3.44.2.3** Each portion of the P25 System must follow those technical parameters specified in the approved Testing and Acceptance Plan.
- 3.44.2.4** Contractor must supply comprehensive training for system diagnostics, management systems, preventative and routine maintenance and system operation for System Managers and designated Customer staff as required.
- 3.44.2.5** Contractor is responsible for any site modifications required to accommodate infrastructure equipment proposed for location in Customer-owned, as well as in non-Customer-owned properties.
- 3.44.2.6** Contractor shall provide technical support/engineering as required to modify existing FCC licenses or to acquire additional licenses required to facilitate operation of the system.
- 3.44.2.7** This activity shall include all FCC licensing application development, frequency coordination and engineering fees. Any frequency work will be coordinated with the State of Florida Frequency Coordinator.
- 3.44.2.8** Any modification or relocation of existing equipment will require prior approval by Customer. Contractor shall supply "as built" drawings and complete written and electronic documentation of modifications or relocation to existing systems to facilitate maintenance of this equipment in the future.
- 3.44.2.9** The Contractor's PM shall develop, monitor, and adapt/update the project's implementation schedule. The schedule shall be presented using Microsoft Project. Schedule updates must be submitted by the Contractor weekly on days that are approved by the Customer, or sooner if implementation issues require more frequent schedule updates.
- 3.44.2.10** The Contractor's PM shall, in addition to Item 3.45.2.9, prepare and submit, weekly on days approved by the Customer, a project status report that details the anticipated

accomplishments, work to be completed and risks for the period depicted by the revised, updated schedule.

- 3.44.2.11** Specific attention should be made to those items and due dates to be met by the Customer to facilitate the unimpeded completion of the work.
- 3.44.2.12** The Contractor's System Engineer shall develop and submit appropriate block and level diagrams, site-specific configuration drawings, field technician workbooks and other related technical materials necessary for the accurate, timely completion of the work.
  - A.** The Contractor's PM shall present the Contractor's internal Quality Control/Quality Assurance plan that depicts the steps and safeguards being undertaken to eliminate field issues with respect to hardware and software quality.
  - B.** This material and process shall be orally presented by the Contractor as part of its Design Review Meeting with the Customer, prior to the commencement of any field installation activities by the Contractor.

### **3.45 Warranty and Maintenance Guidelines**

#### **3.45.1 Warranty**

##### **3.45.1.1 Equipment Warranty**

- A.** The following conditions shall apply for equipment Warranty:
  - 1.** The Vendor will provide post-warranty maintenance and services comparable to the same services proposed for the warranty period.
    - a.** All warranty and post-warranty services will be clearly identified and provided in a matrix.  
  
\*Attach Warranty and Post-Warranty Matrix
    - b.** All warranty and post-warranty services will cover the entire system, including Vendor provided OEM and third-party equipment.
      - 1)** These services will be priced individually for customer information.
    - c.** The Customer can optionally remove any post-warranty services as determined by the Customer's need to provide in-house or subcontract any of these respective services.
  - 2.** The Vendor shall warranty all provided network equipment furnished as part of the Contract and associated radio infrastructure, related user equipment and software for not less than three years, after the date of Final System Acceptance.
    - d.** This includes, but is not limited to, the P25 Trunking, Microwave, and Mutual-Aid portions of the Contract.
  - 3.** The System Warranty period will commence at the time of Final System Acceptance and the Contractor shall provide all labor and parts for maintenance and repair, including preventative maintenance, of all system equipment provided in the proposed network.
  - 4.** All costs for the three-year warranty services will be absorbed by the Contractor.
  - 5.** Replacement parts must be of new or current manufacture and meet or exceed the specifications of the original supplied equipment (OEM).
  - 6.** Post-warranty replacement parts service for emergency infrastructure equipment repair, not available locally, shall be shipped out on the first available flight. Any



parts required for non-emergency repair that are not available locally should be shipped out for next day delivery.

7. The Contractor shall have factory-trained technicians and system engineers available by telephone 24x7x365.
  - e. The technicians or system engineers must respond by telephone within thirty (30) minutes of observed or reported service outage and be on-site, in response to a reported service outage, within two (2) hours.
  - f. Contractor shall be required to provide a list of certified factory-trained technicians performing maintenance on the system including all sub systems and equipment.
  - g. The Vendor shall provide documentation that supports the current certifications of factory-trained technicians.
    - 1) The Vendor is responsible for keeping all credentials and certifications required to maintain the system current and up to date.
8. Service providers responding to emergency service outages must provide continuous non-stop support until the problem is resolved.
9. Non-critical service requests response will be within one (1) working day.
10. When a critical system failure occurs, more stringent requirements shall be met by the Contractor.
  - a. A critical system failure is defined as a significant reduction in the ability to communicate.
  - b. Examples of such failures are:
    - 1) Site off the air,
    - 2) Dispatch console failure at a location with no backup console available,
    - 3) Primary and Secondary Network Controller failure such as the system does not have the ability to operate on trunked calls,
    - 4) Site link failure due to network equipment,
    - 5) Or 50% or more failed base/repeaters at a radio site.
    - 6) Radio system not simulcasting.
11. In the event of a critical system failure, Contractor will notify The Customer of the failure.
12. Critical failures shall have service restored within six (6) hours or less from notification to the Contractor, via The Customer notifying the Contractor, or monitored software notification.
13. Original Equipment Manufacturers (OEM) shall have a fully qualified, staffed, and equipped service facility positioned and capable of meeting this RFP's response time criteria during the warranty and maintenance agreement periods.
  - a. Any subcontractors used during the warranty and post-warranty maintenance period must be pre-approved by the Customer.

- B. The Vendor will supply as part of the technical response, a list of services and preventative maintenance to be provided during the warranty period as well as a schedule at which these services will occur.
- C. The Contractor must make available replacement parts for all Contractor-manufactured components of the digital radio infrastructure for 15 years following Final System Acceptance.
- D. The Contractor must identify lifecycle and parts availability of all OEM and third-party equipment proposed.
- E. Post-warranty replacement parts service for emergency infrastructure equipment repair, not available locally, shall be shipped out on the first available flight.
- F. Any parts required for non-emergency repair that are not available locally should be shipped out for next day delivery.
- G. Contractor must guarantee the system's operating software, inclusive of user equipment software, for a one-year period following Final System Acceptance.
- H. The Contractor shall provide all system software updates, at no additional cost, for the entire period under which The Customer has committed for Contractor-provided post-warranty maintenance services.
- I. Contractor shall resolve all known software defects or "bugs" to system software during warranty and post-warranty period via patch, or system software updates.
- J. Prior to Final System Acceptance, System shall be updated to the latest system software release that is approved for shipping and generally available.

### **3.45.2 Remedies**

**3.45.2.1** In the event of default on the response time to reported service outages, the Vendor agrees to pay The Customer the following penalties for response remedies:

- A. Contractor shall pay \$250 for each occasion that it fails to meet the response time obligation for a reported infrastructure service outage.
- B. Contractor shall pay \$500 per twenty-four-hour period in which a failed infrastructure site is not restored to operational status.
- C. Should any specific equipment item (such as a repeater station, station circuit board, power amplifier, etc.) be submitted for repair three times during the warranty or post-warranty term, Contractor will replace that equipment item with a new item at no cost to the Customer and warranty the replacement for one additional year from the time of accepted replacement.

### **3.45.3 Maintenance**

**3.45.3.1** During the initial warranty period, the Contractor shall be responsible for:

- A. Annual Preventative maintenance of all proposed System equipment and any supplied equipment;
- B. Repair maintenance of infrastructure equipment, inclusive of antenna systems;

**3.45.3.2** Updates of software, to include, but are not limited to; security updates, firmware updates and any new default features.

**3.45.3.3** Contractor-provided maintenance during the warranty period will be monitored by the Customer.

- 3.45.3.4** The Contractor must supply monthly service logs listing the site(s) where service is performed, the equipment involved and service details.
- 3.45.3.5** Failure of individual units, subassemblies and/or components must be reported in writing to the Customer. This report must, as a minimum, include unit identification (description and serial number), explanation and cause of failure, and corrective action taken.
- 3.45.3.6** Contractor is responsible for all actions of its employees or subcontractors. Any equipment failure(s) caused by any act or omission of Contractor's employee or subcontractor shall be the responsibility of the Contractor.
- 3.45.3.7** The Contractor shall submit a maintenance work plan that identifies the tasks required in accordance with Section 3.1, a listing of Contractor supplied personnel and identification of a 24x7x365 Single Point of Contact (SPOC) responsible for Contractor maintenance issues.
- 3.45.3.8** All required service logs and repair reports must be submitted to the Customer.

#### **3.45.4 Service/Maintenance Software**

##### **3.45.4.1** The Contractor shall provide:

- A.** A suite of software applications for the Customer to be able to view and monitor all alarms and faults on the system, both non-critical and critical.
- B.** The contractor shall provide the Customer with access to an electronic ticketing system for the duration of the warranty and post-warranty maintenance term that gives the Contractor and the Customer the ability to submit and track service/repair tickets along with assets associated with the system.
- C.** Software capable of decoding an encrypted control channel in real-time, over the air, should encrypted control channels be utilized at system acceptance, or a later time during the period of this contract.
- D.** As part of its cost submittal, the Vendor shall provide for optional maintenance services that are equivalent to those provided by the initial warranty. The term of each optional extended maintenance support option shall be five (5) years to be paid annually by the Customer.
- E.** The Customer reserves the right to utilize outside or outsourced contract labor for maintaining its infrastructure equipment and end user devices. For outside contractor needs, the term of this extended maintenance service shall be as long as fifteen years, structured into three 5-year optional service intervals. Vendors shall provide a detailed description of services (along with service exclusions) available for this extended post-warranty maintenance service, including infrastructure software updates, hardware updates required to support newer software, defective parts replacements, and spare parts.
- F.** Contractor shall propose optional cybersecurity services for the System, inclusive of network security monitoring service, system security patch subscription service, security patch installation service (on-site vs. remote), automated antivirus subscription & installation services available to the Customer. Including pricing options for warranty and post-warranty periods.
- G.** Contractor shall propose Network Monitoring services to provide 24x7x365 System surveillance and dispatch services of on-site field maintenance teams during the warranty period and the optional price to extend this service beyond warranty.

- H. The Contractor will supply as part of the technical response, a list of services and preventative maintenance to be provided during the warranty period as well as a schedule at which these services will occur.

### **3.45.5 Spare Parts Support**

- 3.45.5.1** Contractor must provide and maintain a stock of spare parts, as determined necessary by the Contractor, to maintain all components of the System's infrastructure for the warranty period. These spare parts shall be located either at selected System radio infrastructure sites or at the Contractor's local maintenance service facility. A list of these spare parts determined to be necessary by the Contractor shall be provided to the Customer.
- 3.45.5.2** As spare parts are consumed during routine or repair maintenance, the Contractor shall immediately replenish its stock of locally housed spare parts, where necessary.
  - A.** A report of the utilization frequency and rate of all spare materials shall be made available. If at any time the Contractor is aware of any equipment repair or recall notifications, the Contractor shall notify the Customer by electronic and routine mail.
  - B.** Trends of unusual System or component failure shall be brought to the attention of the Customer by the Contractor.
- 3.45.5.3** If spares from the initial list are not available to maintain the proper working order of the proposed System, the Contractor shall add additional spares at no cost to the Customer.
- 3.45.5.4** The spares inventory will be supplied and shipped as part of the required staging event.
  - A.** This applies to all spare parts recommended by the Contractor

16. Infrastructure Pricing Considerations

### **3.45.6 General Pricing Information**

- 3.45.6.1** This equipment-pricing portion of this RFP shall serve as a guide for the Vendor. The necessary information is provided to the Customer to conduct an accurate assessment of the proposed price. This information is illustrative of the detail required for each infrastructure site, inclusive of sites having only dispatch-related equipment.
- 3.45.6.2** Proposers shall provide a per-site granular price detail of proposed equipment, towers, generators, site civil engineering, program management, system engineering, installation services, and maintenance services.

\*Attach Per-Site Granular Detail

- A.** As this is a turnkey project, any pricing omission of a scope typically considered part of a P25 simulcast trunked radio system of this type will be provided for by the Contractor at no additional cost to the Customer.
- 3.45.6.3** The Vendors are required to provide finance pricing options for the infrastructure, subscribers, and maintenance proposed.
  - A.** This information should include at a minimum terms, interest percentages, and payment terms.

### **3.45.8 Site Modification Costs**

- 3.45.8.1** For equipment to be installed at the Customer-owned sites which have requirements for site preparatory work involving architectural, mechanical, electrical, civil or structural construction modifications, a description and cost of the modifications required must be provided by the Vendor for each individually named site.

**3.45.8.2** For newly-added sites, the price provided by the Vendor shall include services typical and customary for the development and commissioning of a new system site, exclusive of access roadway development.

**A.** The Customer will provide site access roadways if the property is the Customer-owned.

### **3.45.9 Lifecycle Costs**

**3.45.9.1** The Customer reserves the right to perform a lifecycle analysis on the proposed system to determine the best price value.

**A.** A critical part of such research involves knowledge of the overall lifecycle of the various OEM and 3rd Party elements making up a Vendor's System solution.

**B.** From general availability to manufacture discontinue and all phases in between, the production age of the proposed system affects the ability to source spare parts, software upgrade, and support services.

**C.** Lifecycle analysis is a critical factor in determining the operational life of the proposed P25 technology and supporting products.

**3.45.9.2** Vendors shall disclose key lifecycle dates of the proposed system, including subscribers, P25 System software, infrastructure, network elements, and 3rd Party supporting equipment. Include general availability (GA) release dates to manufacture discontinue (MD) dates along with important OEM hardware and software support dates for standard, extended and out-of-support milestone dates. Please detail how software support dates/phases affect service availability and pricing.

**3.45.9.3** Vendors shall disclose as part of their Cost Proposal when System was first released for sale to the Public.

**3.45.9.4** Vendors shall also provide a life-cycle roadmap, referenced by year and so depict when any third-party equipment is likely to be discontinued and when parts/software support will cease to be available.

### **3.45.10 Warranty and Post-Warranty Maintenance Costs**

**3.45.10.1** Costs for the initial warranty and extended post-warranty maintenance service, inclusive of infrastructure software updates, hardware updates required to support newer software, defective/failed parts replacements, and spare parts, shall be included as part of the Vendor's cost proposal. Multi-year pricing shall be detailed by the Customer fiscal year (October 1, through September 30).

**3.45.10.2** The Vendor shall provide detailed pricing for all system support services proposed under the post- warranty maintenance timeframe.

**3.45.10.3** Post-warranty maintenance services will replicate all services available during the warranty year period, to include all third-party equipment proposed.

**3.45.10.4** The Vendor will provide post-warranty system services as an extended warranty service from the start of post warranty to 20-years.

**3.45.10.5** The Vendor will provide post-warranty depot services as an annual price from the start of warranty through 20-years.

### **3.45.11 Pricing Summaries**

**3.45.11.1** Pricing Summaries for Infrastructure equipment shall be provided as part of the response.

- A. All summary information will be supported by detailed cost information as detailed further in this Section.

**3.45.11.2 Pricing Summaries shall include;**

- A. Infrastructure Equipment
- B. Project Management, Engineering, & Installation Services
- C. Subscriber radios with options and accessories
- D. Subscriber Programming and Installation Services
- E. Infrastructure Discount
- F. Subscriber Discount
- G. Turnkey Discount
- H. System Maintenance (annual basis, after warranty expiration)
- I. Subscriber Maintenance (annual basis, after warranty expiration)
- J. Total Cost of Ownership at 5, 10, 15 and 20 years (Provide comprehensive breakdown, attached to Section VI: Cost Proposal Page.)

**3.45.11.3 Optional Requests Future Purchase Considerations**

- A. The Customer intends to operate this new radio communications network for, minimally, the next twenty years. Therefore, the Customer must receive reasonable safeguards regarding future Vendor equipment and maintenance services pricing to establish a total long-term cost of ownership.
- B. Include with Cost Proposal Page annual price increase amounts for equipment and maintenance services.

**3.45.12 Immediate Future Discounts**

- 3.45.12.1** For all purchases within five (5) years after the System's acceptance date, the discount percentage received by the Customer will be identical to the discount percentages derived from list-price unit equipment costs and Vendor-submitted unit costs as designated in 3.45.10 I.

**3.45.13 Purchase Price Discount Years 6 – 10**

- 3.45.13.1** For years six (6) through ten (10) after the System's acceptance date,

- 3.45.13.2** The Customer's discount from the manufacturer's published equipment list price, as delivered to their authorized sales agents, shall be as follows:

- A. Fixed Site Equipment
- B. Antenna Related Equipment
- C. Console Equipment
- D. Control Station Equipment
- E. Spare Parts
- F. Managed & Support Services

**3.45.14 Price Discount Years 11 – 15**

**3.45.14.1** For years eleven (11) through fifteen (15) after the System's final acceptance date, The Customer' discount from the manufacturer's published equipment list price as delivered to their authorized sales agents, shall be as follows:

- A. Fixed Site Equipment
- B. Antenna Related Equipment
- C. Console Equipment
- D. Control Station Equipment
- E. Spare Parts
- F. Managed & Support Services

**3.45.15 Price Discount Years 16 – 20**

**3.45.15.1** For years sixteen (16) through twenty (20) after the System's acceptance date, The Customer's discount from the manufacturer's published equipment list price as delivered to their authorized sales agents, shall be as follows:

- A. Fixed Site Equipment
- B. Antenna Related Equipment
- C. Microwave Equipment
- D. Console Equipment
- E. Network Equipment
- F. Control Station Equipment
- G. Spare Parts
- H. Managed & Support Services

**3.45.16 Infrastructure Pricing Analysis Worksheets**

**3.45.16.1** The vendor shall provide pricing worksheets to develop the Infrastructure Price Submittal. These worksheets are indicative of the detail required and may be amended or expanded by the Vendor as necessary. These worksheets shall be provided as part of the bid submittal in Microsoft Excel format.

**3.45.16.2** Any omission or error in developing the pricing proposal, shall be the sole responsibility of the Contractor.

**3.45.16.3** The City reserves the right to ask for additional pricing detail in the pricing worksheets at any time during contract negotiations or any time prior to final acceptance.

**3.46 Additional Requirements**

**3.46.1 Fire/EMS Paging System: Not required for this RFP**

**3.46.2 Alternative Shared System Infrastructure**

**3.46.2.1** The Customer is sensitive to the costly nature of P25 systems. Therefore, vendors are encouraged to submit creative additional proposals that may utilize any or all capabilities, software, and hardware of other systems that are already being provided by the vendor. This may include systems that are currently under construction but can be modified to

accommodate additional equipment added for the purposes of this RFP, or systems that are complete and in normal operation (Further referenced as “existing system”).

**3.46.2.2 Alternative system configuration technical requirements.**

**A. Alternative configurations must have redundant network connection points into the existing system.**

1. Additionally, the proposed optional configuration must be able to continue regular trunking operations and communications in the event of network connectivity failure to the existing system.
2. This includes dispatch consoles having direct network access into the remaining RF sites, or RF connectivity.

**B. Alternative configurations must have redundant network connection points into the existing system.**

1. Additionally, the proposed optional configuration must be able to continue regular trunking operations and communications in the event of network connectivity failure to the existing system.
2. This includes dispatch consoles having direct network access into the remaining RF sites, or RF connectivity.

**C. Alternative System Configuration Pricing Requirements:**

1. Within the pricing proposal of the alternative system configuration, key cost differences (whether savings or additional cost) shall be identified and marked as such for comparison purposes.
2. An example of this is if a specific item is needed in a stand-alone system, but already exists with the alternative solution, the vendor shall highlight this cost savings.
  - a. Within the pricing proposal of the alternative system configuration, key cost differences (whether savings or additional cost) shall be identified and marked as such for comparison purposes.
  - b. An example of this is if a specific item is needed in a stand-alone system, but already exists with the alternative solution, the vendor shall highlight this cost savings.

**D. Alternative System Configuration Submittal Requirements:**

1. Any alternative system configuration proposal must follow all dates and guidelines as prescribed in this RFP, including the separation of its pricing from the technical proposal.
2. Additionally, any alternative system configuration that requires joining an existing system or site, must include written authorization from the owner of the existing system or site.
3. This authorization must be included within the technical proposal submittal for the alternative system configuration.

**E. Additional Connectivity:**

1. Any additional connectivity required by Commercial type service (fiber, etc.) to meet any redundancy requirements must be clearly identified in the proposal with costs listed as an alternative.



## SECTION IV – SUBMITTAL REQUIREMENTS

### 4.1 Instructions

- 4.1.1** The City of Fort Lauderdale uses its own on-line strategic sourcing platform to administer the competitive solicitation process, including but not limited to soliciting proposals, issuing addenda, responding to questions / requests for information. There is no charge to register and download the RFP from the [City's on-line strategic sourcing platform](#). Proposers are strongly encouraged to read the supplier tutorial available in the City's on-line strategic sourcing platform well in advance of their intention of submitting a proposal to ensure familiarity with the use of the [City's on-line strategic sourcing platform](#). The City shall not be responsible for a Proposer's inability to submit a proposal by the end date and time for any reason, including issues arising from the use of the City's on-line strategic sourcing platform.
- 4.1.2** Careful attention must be given to all requested items contained in this RFP. Proposers are invited to submit proposals in accordance with the requirements of this RFP. Please read entire solicitation before submitting a proposal. Proposers must provide a response to each requirement of the RFP. Proposals should be prepared in a concise manner with an emphasis on completeness and clarity. Notes, exceptions, and comments may be rendered on an attachment, provided the same format of this RFP text is followed.
- 4.1.3** All information submitted by Proposer shall be typewritten or provided as otherwise instructed to in the RFP. Proposers shall use and submit any applicable or required forms provided by the City and attach such to their proposal. Failure to use the forms may cause the proposal to be rejected and deemed non-responsive.

**IN THE EVENT OF ANY CONFLICT OR DISCREPANCY BETWEEN BID/PROPOSAL PRICE(S) SUBMITTED BY BIDDER/PROPOSER ELECTRONICALLY INTO THE CITY'S ON-LINE STRATEGIC SOURCING PLATFORM UNIT PRICE FIELD(S), ANY OTHER FORMS OR ATTACHMENTS (WHETHER PART OF THE CITY'S SOLICITATION DOCUMENTS OR DOCUMENTS CREATED AND UPLOADED BY THE BIDDER/PROPOSER), OR ANOTHER SECTION/FIELD OF THE SYSTEM, THE ONLINE UNIT PRICE(S) INPUTTED ELECTRONICALLY INTO THE SYSTEM BY BIDDER/PROPOSER SHALL GOVERN.**

- 4.1.4** Proposals shall be submitted by an authorized representative of the firm. Proposals must be submitted in the business entities name by the President, Partner, Officer or Representative authorized to contractually bind the business entity. Proposals shall include an attachment evidencing that the individual submitting the proposal, does in fact have the required authority stated herein.
- 4.1.5** All proposals will become the property of the City. The Proposer's response to the RFP is a public record pursuant to Florida law, which is subject to disclosure by the City under the State of Florida Public Records Law, Florida Statutes Chapter 119.07 ("Public Records Law"). The City shall permit public access to all documents, papers, letters, or other material submitted in connection with this RFP and the Contract to be executed for this RFP, subject to the provisions of Chapter 119.07 of the Florida Statutes. Any language contained in the Proposer's response to the RFP purporting to require confidentiality of any portion of the Proposer's response to the RFP, except to the extent that certain information is in the City's opinion a Trade Secret pursuant to Florida law, shall be void. If a Proposer submits any documents or other information to the City which the Proposer claims is Trade Secret information and exempt from Florida Statutes Chapter 119.07 ("Public Records Laws"), the Proposer shall clearly designate that it is a Trade Secret and that it is asserting that the document or information is exempt. The Proposer must specifically identify the exemption being claimed under Florida Statutes 119.07. The City shall be the final arbiter of whether any information contained in the Proposer's response to the RFP constitutes a Trade

Secret. The city's determination of whether an exemption applies shall be final, and the Proposer agrees to defend, indemnify, and hold harmless the city and the city's officers, employees, and agent, against any loss or damages incurred by any person or entity as a result of the city's treatment of records as public records. In the event of Contract award, all documentation produced as part of the Contract shall become the exclusive property of the City.

**IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT [PRRCONTRACT@FORTLAUDERDALE.GOV](mailto:PRRCONTRACT@FORTLAUDERDALE.GOV), 954-828-5002, CITY CLERK'S OFFICE, ONE EAST BROWARD BOULEVARD, SUITE 444, FORT LAUDERDALE, FLORIDA 33301.**

Contractor shall:

1. Keep and maintain public records required by the City in order to perform the service.
  2. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes (2024), as may be amended or revised, or as otherwise provided by law.
  3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of this contract if the Contractor does not transfer the records to the City.
  4. Upon completion of the Contract, transfer, at no cost, to the City all public records in possession of the Contractor or keep and maintain public records required by the City to perform the service. If the Contractor transfers all public records to the City upon completion of this Contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of this Contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.
- 4.1.6** By submitting a response Proposer is confirming that the firm has not been placed on the convicted vendors list as described in Section §287.133 (2) (a) Florida Statutes; that the only person(s), company or parties interested in the proposal as principals are named therein; that the proposal is made without collusion with any other person(s), company or parties submitting a proposal; that it is in all respects fair and in good faith, without collusion or fraud; and that the signer of the proposal has full authority to bind the firm.

## **4.2 Contents of the Proposal**

The City deems certain documentation and information important in the determination of responsiveness and for the purpose of evaluating proposals. Proposals should seek to avoid information in excess of that requested, must be concise, and must specifically address the issues of this RFP. The City prefers that

proposals be no more than 100 pages in one complete pdf document. The proposals should be organized, divided, and indexed into the sections indicated herein. These are not inclusive of all the information that may be necessary to properly evaluate the proposal and meet the requirements of the scope of work and/or specifications. Additional documents and information should be provided as deemed appropriate by the respondent in proposal to specific requirements stated herein or through the RFP.

#### **4.2.1 Table of Contents**

The table of contents should outline in sequential order the major areas of the submittal, including enclosures. All pages should be consecutively numbered and correspond to the Table of Contents.

#### **4.2.2 Executive Summary**

Each Offeror must submit an executive summary that identifies the business entity, its background, main office(s), and office location that will service this contract. Identify the officers, principals, supervisory staff, and key individuals who will be directly involved with the work and their office locations. The executive summary should also summarize the key elements of the proposal.

#### **4.2.3 Experience and Qualifications**

Indicate the firm's number of years of experience in providing the professional services as it relates the work contemplated. Provide details of past projects for agencies of similar size and scope, including information on your firm's ability to meet time and budget requirements. Indicate the firm's initiatives towards its own sustainable business practices that demonstrate a commitment to conservation. Indicate business structure, IE: Corp., Partnership, LLC. Firm should be registered as a legal entity in the State of Florida; Minority or Woman owned Business (if applicable); Company address, phone number, fax number, E-Mail address, web site, contact person(s), etc. Relative size of the firm, including management, technical and support staff; licenses and any other pertinent information shall be submitted.

#### **4.2.4 Approach to Scope of Work**

Provide in concise narrative form your understanding of the City's needs, goals and objectives as they relate to the project, and your overall approach to accomplishing the project. Give an overview on your proposed vision, ideas, and methodology. Describe your proposed approach to the project.

As a part of the response, a design plan and diagram(s) shall be presented to the City for approval.

The Proposer shall also propose a scheduling methodology (timeline) for effectively managing and executing the work in the optimum time. The delivery time shall be stated in calendar days from the date of City notification of award or notice to proceed with delivery. Such timeline information and proposed dates shall include, but not necessarily be limited to: delivery, installation, acceptance testing, personnel, and other related completion dates, in accordance with the RFP specifications.

NOTE: The project must be completed and accepted within 120 days from the City Notice to Proceed.

Also provide information on your firm's current workload and how this project will fit into your workload. Describe available facilities, technological capabilities, and other available resources you offer for the project.

Additionally, the proposal should specifically address:

- A. Who
- B. What
- C. When
- D. Where
- E. Why
- F. How

#### **4.2.5 References**

Provide at least three references, preferably government agencies, for projects with similar scope as listed in this RFP. Information should include:

- Client Name, address, contact person telephone and E-mail addresses.
- Description of work.
- Year the project was completed.
- Total cost of the project, estimated and actual.

**Note:** Do not include City of Fort Lauderdale work or staff as references to demonstrate your capabilities. The Committee is interested in work experience and references other than the City of Fort Lauderdale.

#### **4.2.6 Minority/Women (M/WBE) Participation**

If your firm is a certified minority business enterprise as defined by the Florida Small and Minority Business Assistance Act of 1985, provide copies of your certification(s). If your firm is not a certified M/WBE, describe your company's previous efforts, as well as planned efforts in meeting M/WBE procurement goals under Florida Statutes 287.09451.

#### **4.2.7 Subcontractors**

Proposer must clearly identify any subcontractors that may be utilized during the term of this contract.

#### **4.2.8 Required Forms**

##### **A. Proposal Certification**

Complete and attach the Proposal Certification provided herein.

##### **B. Cost Proposal**

Provide firm, fixed, costs for all services/products using the form provided in this request for proposal. These firm fixed costs for the project include any costs for travel and miscellaneous expenses. No other costs will be accepted.

##### **C. Non-Collusion Statement**

This form is to be completed, if applicable, and inserted in this section.

##### **D. Contract Payment Method**

This form must be completed and returned with your proposal. Proposers must presently have the ability to accept these credit cards or take whatever steps necessary to implement acceptance of a card before the start of the contract term, or contract award by the City.

##### **E. E-Verify Affirmation Statement**

This form must be completed and returned with your proposal.

**F. Sample Insurance Certificate**

Demonstrate your firm's ability to comply with insurance requirements. Provide a previous certificate or other evidence listing the Insurance Companies names for the required coverage and limits.

**G. W-9 for Proposing Firm**

This form must be completed and returned with your proposal.

**H. Active Status Page from Division of Corporations – Sunbiz.org**

Provide PDF of current page with your proposal.

*END OF SECTION*

## SECTION V – EVALUATION AND AWARD

### 5.1 Evaluation Procedure

#### 5.1.1 Bid/Proposal Tabulations/Intent to Award

Notice of Intent to Award Contract/Bid/Proposal, resulting from the City's Formal solicitation process, requiring City Commission action, may be found at:

<https://www.fortlauderdale.gov/government/departments-a-h/finance/procurement-services/notices-of-intent-to-award>. Tabulations of receipt of those parties responding to a formal solicitation may be found at: <https://www.fortlauderdale.gov/government/departments-a-h/finance/procurement-services/bid-results>, or any interested party may call the Procurement Services Division at 954-828-5933.

**5.1.2** Evaluation of proposals will be conducted by an Evaluation Committee, consisting of a minimum of three members of City Staff, or other persons selected by the City Manager or designee. All committee members must be in attendance at scheduled evaluation meetings. Proposals shall be evaluated based upon the information and references contained in the responses as submitted.

**5.1.3** The Committee may short list Proposals that it deems best satisfy the weighted criteria set forth herein. The committee may then conduct interviews and/or require oral presentations from the short-listed Proposers. The Evaluation Committee shall then re-score and re-rank the short-listed firms in accordance with the weighted criteria.

**5.1.4** The City may require visits to the Proposer's facilities to inspect record keeping procedures, staff, facilities and equipment as part of the evaluation process.

**5.1.5** The final ranking and the Evaluation Committee's recommendation may then be reported to the City Manager for consideration of contract award.

### 5.2 Evaluation Criteria

**5.2.1** The City uses a mathematical formula to determine the scoring for each individual responsive and responsible firm based on the weighted criteria stated herein. Each evaluation committee member will rank each firm by criteria, giving their first ranked firm a number 1, the second ranked firm a number 2, and so on. The City shall multiply that average ranking by the weighted criterion identified herein to determine the total the points for each Proposer. The lowest average final ranking score will determine the recommendation by the evaluation committee to the City Manager.

#### 5.2.2 Weighted Criteria

Understands the Scope of the Project	10%
References, Past Performance, Years in Business	10%
Technical Merits of the Project, Flexibility of Technology Proposed, Quality of Proposed Equipment	25%
Hardening and Redundancy	10%
Radio Coverage	10%
Total Project Cost	30%
<b>TOTAL PERCENT AVAILABLE:</b>	<b>100%</b>

### **5.3 Contract Award**

The City reserves the right to award a contract to that Consultant who will best serve the interest of the City. The City reserves the right, based upon its deliberations and in its opinion, to accept or reject any or all proposals. The City also reserves the right to waive minor irregularities or variations of the submittal requirements and RFP process.

*END OF SECTION*

**SECTION VI - COST PROPOSAL PAGE**

**Proposer Name:** \_\_\_\_\_

Proposer agrees to supply the products and services at the prices proposed in accordance with the terms, conditions and specifications contained in this RFP.

Cost to the City: Contractor shall quote firm, fixed, costs for all services/products identified in this request for proposal. These firm fixed costs for the project include any costs for travel and miscellaneous expenses. No other costs will be accepted.

See attached Excel document **358 – Pricing Worksheet Template** to provide the comprehensive breakdown of costs including but not limited to labor, equipment, materials, parts, and maintenance.

**Submitted by:**

\_\_\_\_\_  
Name (printed)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title



## **APPENDICIES A - F**

## **Appendix A: Current Infrastructure**

### **Voice System**

Fort Lauderdale currently utilizes a P25 800 MHz Trunking Radio System that is hosted, owned, and operated by Motorola Solutions. This system is utilized by Fort Lauderdale Fire-Rescue, Fort Lauderdale Police, Fort Lauderdale Public Works, Oakland Park Local Government, Oakland Park Police, and Wilton Manors Police. This system is also utilized by Coral Springs, FL and Plantation, FL, however, these jurisdictions are not included in this RFP.

### **Back-haul**

Current system backhaul is licensed microwave which connects each site to the Motorola Solutions hosted core. Backhaul is currently a ring configuration connecting Playa del Sol Site to the microwave only Pompano Site; the Pompano Site connects to the Utilities site; the Utilities site connects to the current PD HQ Site (planned to connect to the Greenfield SLERS co-location site); the Greenfield SLERS co-location site is planned to connect to the Playa del Sol Site; the Ring is connected to the hosted core from the Utilities Site. Microwave traffic will be re-routed to delete the Pompano Site, while maintaining an overall ring topography.

### **Existing Towers**

Currently, Fort Lauderdale utilizes three (3) towers for Radio Frequency voice coverage. These sites are:

- A. Playa del Sol Site: (26°10'17.5"N 80°05'54.5"W)
- B. Equipment room located on the 29th floor
- C. Known grounding issues
- D. Microwave Backhaul
- E. Insufficient UPS for desired backup power
- F. Utilities Site: (26°10'35.6"N 80°09'25.1"W)
- G. On City Public Works property
- H. Known grounding issues
- I. Planned Co-location with Greenfield SLERS Site: (26°07'25.6"N 80°10'20.0"W)
- J. Not completed as of the release of this RFP
- K. Details provided as available

### **Consoles**

Fort Lauderdale is currently dispatched by Broward County dispatch and is connected via an ISSI. Fort Lauderdale plans to add back-up consoles at the EOC and Fort Lauderdale Police Headquarters as part of this RFP.

### **Subscriber Radios**

- A. Fort Lauderdale uses a combination of Motorola Mobile and Portable radios.
- B. APX Mobiles/Portables
- C. XTS Portables
- D. XTL Mobiles

### **Fire Paging**

No fire paging is utilized by Fort Lauderdale.

## Appendix B: Existing Channel Structure – Frequencies and Talkgroups

FL Channel	FCC Channel	BASE/MOBILE
1	16	851.2125/806.2125
2	18	851.2375/806.2375
3	20	851.2625/806.2625
4	32	851.4125/806.4125
5	50	851.6625/806.6625
6	70	851.9125/806.9125
7	90	852.1875/807.1875
8	92	852.2125/807.2125
9	96	852.2625/807.2625
10	122	852.6125/807.6125
11	124	852.6375/807.6375
12	140	852.8375/807.8375
13	142	852.8625/807.8625
14	144	852.8875/807.8875
15	154	853.0375/808.0375
16	158	853.0875/808.0875
17	174	853.2875/808.2875
18	176	853.3125/808.3125
19	178	853.3375/808.3375
20	194	853.5375/808.5375
21	196	853.5625/808.5625
22	198	853.5875/808.5875
23	214	853.7875/808.7875
24	216	853.8125/808.8125
25	218	853.8375/808.8375
26	224	853.9125/808.9125

TALKGROUP ALIAS				
FLL-RS-3	FLL-BZ-TAC2	FLL-SURV-H	PBL-PW-OPS1	FLG-UTILITIES
FLP-IA	FLL-C/H-SEC	FLL-TREATMNT	PBL-PW-SUPV	FLL-BDA
FLP-SID-TAC-1	FLL-CITY-MGMT1	FLL-UT-CONSTN	PBL-RECCOM	FLL-EOC-COMN
FLP-SID-TAC-2	FLL-CITY-MGMT2	FLL-UTIL-DISP	PBL-RECOPS	FLP-C/H SECURITY
FLP-SID-TAC-3	FLL-CODE	FLL-WAST-WTR	PBL-RECSUP	FLP-CID COMN+
FLP-SID-TAC-4	FLL-COM-INSPT	FLL-ZONING	PBL-UT-COMN	FLP-DETV1+
FLP-SID-TAC-5	FLL-CUST-SVC	FLM-GLOBAL	PBL-UT-OPS-1	FLP-DIST1+
FLP-DETV-2	FLL-DOCKS	FLM-P/S-COMN	PBL-UT-SUPV	FLP-DIST2+
FL-PR-EVT1	FLL-ENG-ENV	FLP-EOC-2PD	REFERENCE	FLP-DIST3+
FLF-CALL+	FLL-EOC-3LG	FLP-PKG-ENF	WML-ADMIN	FLP-I-A
FLM-OPS1+	FLL-FAC-MNT	FL-TEST-TG	WML-CITY	FLP-K9+
FLM-OPS10+	FLL-FLEET	OPL-CITYWIDE	WML-INSPT	FLP-MGMT+
FLM-OPS11+	FLL-HSG	OPL-MUNI-OPS	WML-LG-OPS-1	FLP-PACE1+
FLM-OPS12+	FLL-INSPT	OPL-PRK/REC	WML-LG-OPS-2	FLP-PACE2+
FLM-OPS13+	FLL-ITS-DATA	OPL-PW-AG	WMP-EOC	FLP-PROPCTRL+
FLM-OPS14+	FLL-LG-AG	OPL-PW-OPS	ALRM TST1+	FLP-RANGER+
FLM-OPS2+	FLL-LG-COMN	OPL-SOLIDWASTE	ALRM TST2+	FLP-RECORDS+
FLM-OPS3+	FLL-MNT-I/R	OPL-TBA-1	ALRM TST3+	FLP-RP-TAC1+
FLM-OPS4+	FLL-MOT-DR1A	OPL-TBA-2	EOC 1 (FD)+	FLP-RP-TAC2+
FLM-OPS5+	FLL-MOT-FSOA	OPL-TBA-3	EOC 2 (PD)+	FLP-RP-TAC3+
FLM-OPS6+	FLL-PARKING	PBL-AIRPK	FLF-ADMIN+	FLP-SID COMN+
FLM-OPS7+	FLL-PARKS	PBL-AIRTWR	FLF-BAT 16+	FLP-SID-TAC1+
FLM-OPS8+	FLL-PKG-MEC	PBL-AQU-COMN	FLF-BAT 35+	FLP-SID-TAC2+
FLM-OPS9+	FLL-PR-ADM	PBL-AQU-OPS-1	FLF-CHIEFS 1+	FLP-SID-TAC3+
FLM-SE-1+	FLL-PR-AG	PBL-AQU-SUPV	FLF-CHIEFS 2+	FLP-SID-TAC4+
FLM-SE-2+	FLL-PUB-SVC	PBL-BUILDING	FLF-EMS/EVNT+	FLP-SP-TAC1+
FLM-SE-3+	FLL-PW-AG	PBL-CE-AUX1	FLF-MAIN+	FLP-SP-TAC2+
FLP-CALL+	FLL-PW-TAC1	PBL-CE-AUX-2	FLF-OR 1+	FLP-SP-TAC3+
FL-ENG-SVC	FLL-PW-TAC2	PBL-CE-COMN	FLF-OR2+	FLP-SWAT 1+
FL-EV-TAC-F1	FLL-PW-TAC3	PBL-CS-COMN	FLF-SUPRT+	FLP-SWAT 2+
FL-EV-TAC-F3	FLL-RANGER	PBL-CS-SUPV	FLF-TAC B+	FLP-TRFC+
FL-EV-TAC-F5	FLL-RS-1	PBL-ENGR	FLF-TAC C+	FLP-TRNG+
FL-EV-TAC-F7	FLL-RS-2	PBL-EOC-1	FLF-TAC D+	FLP-TRNG2+
FL-EV-TAC-F9	FLL-SANITATN	PBL-EOC-2	FLF-TRNG+	FLR-P25-1+
FLF-EOC-1FD	FLL-SE-PARKS	PBL-EOC-3	FLG-CH-SEC/ITS	FLR-P25-2+
FLF-OR-2	FLL-SNYDER	PBL-EOC-4	FLG-DISPATCH	MOT-FL-P25+
FLF-TACC	FLL-SPC-PROJ	PBL-EOC-5	FLG-DSD-TAM	OPL-EOC
FLL-AIRPORT	FLL-SURV-A	PBL-EOC-6	FLG-EOC3(LG)	OPL-LG-OPS1
FLL-BIZ-TAX	FLL-SURV-AG	PBL-GOLF	FLG-HOUSING	OPL-LG-OPS2
FLL-BLDG	FLL-SURV-D	PBL-LG-AG	FLG-LG-COMN	WMF-INSP
FLL-BZ-COMN	FLL-SURV-E	PBL-LGC	FLG-PKS-FXE	WML-EOC
FLL-BZ-SUPV	FLL-SURV-F	PBL-OCC-LIC	FLG-SANITATION	WML-LEISURE
FLL-BZ-TAC1	FLL-SURV-G	PBL-PW-COMN	FLG-TREATMENT	WML-OPS2
				WMP-TAC-1

## **Appendix C: Tower Candidate Sites List**

The three (3) existing RF Voice sites are all candidates for future use in the proposed new system.

Additionally, Fort Lauderdale desires the use of the Point of America Site: (26°05'47.6"N 80°06'26.0"W)

Other options will be considered as proposed and evaluated for best value.

## Appendix D: Critical Building List

Police Headquarters	1300 W. Broward Blvd.	Fort Lauderdale	FL	33312	26.1213113 -80.158871
Police Headquarters	1350 W. Broward Blvd.	Fort Lauderdale	FL	33312	26.1207644 -80.158817
Police Horse Barn	700 NE 9 Street	Fort Lauderdale	FL	33304	26.135313 -80.135432
Police Internal Affairs Office:	255 NE 3 Avenue	Fort Lauderdale	FL	33301	26.1250362 -80.140827
Police Substation	533 NE 13 Street	Fort Lauderdale	FL	33304	26.1425933 -80.13821
Police Substation	1815 Cordova Road	Fort Lauderdale	FL	33316	26.0981025 -80.131332
Police Substation	1409 NW 6 Street	Fort Lauderdale	FL	33311	26.1295397 -80.160075
Fire Station 2 - Admin./ HQ	528 NW 2nd St.	Fort Lauderdale	FL	33311	26.12332 -80.1493
Fire Station 3	2801 SW 4th Ave.	Fort Lauderdale	FL	33315	26.08853 -80.1472
Fire Station 8	1717 SW 1st Ave.	Fort Lauderdale	FL	33315	26.09991 -80.1431
Fire Station 13	2871 East Sunrise Blvd.	Fort Lauderdale	FL	33304	26.13819 -80.10698
Fire Station 16	533 NE 22nd St.	Wilton Manors	FL	33305	26.15629 -80.13937
Fire Station 29	2002 NE 16th St.	Fort Lauderdale	FL	33304	26.148758 -80.120731
Fire Station 35	1969 East Commercial Blvd.	Fort Lauderdale	FL	33308	26.18975 -80.119753
Fire Station 46	1515 NW 19th St.	Fort Lauderdale	FL	33311	26.145846 -80.16804
Fire Station 47	1000 SW 27th Ave.	Fort Lauderdale	FL	33312	26.109674 -80.177664
Fire Station 49	1015 Seabreeze Blvd.	Fort Lauderdale	FL	33316	26.110665 -80.106197
Fire Station 53	2200 Executive Airport Way	Fort Lauderdale	FL	33309	26.200809 -80.172966
Fire Station 54	3211 NE 32nd St.	Fort Lauderdale	FL	33308	26.16877 -80.102695

## **Appendix E: FCC Licenses**

[See Pages to Follow]

## **Appendix F: Network Management Requirements**

This section provides additional requirements for the management and integration with the City's network.

### **OPTION 1: VENDOR MANAGED NETWORK**

- 1.1. Radio vendor after reserving needed bandwidth will provide to the City an unmanaged RJ45 or Fiber connection to install our own routers and switches at each tower location. All remaining bandwidth will be consumed as the City's discretion.
- 1.2. All egress points into the City's production data networks require firewall or approved access control list for routing that must be approved by
- 1.3. All deployed vendor hardware and software will not be using the default login credentials from the manufacture and must use unique passwords. Passwords will use the minimum following criteria.
  - 1.3.1 At least 12 characters—the more characters, the better.
  - 1.3.2 A mixture of both uppercase and lowercase letters.
  - 1.3.3 A mixture of letters and numbers.
  - 1.3.4 Inclusion of at least one special character, e.g., ! @ # ? ]
- 1.4 Any remote access into the radio systems by devices such as computers, tablets, phones or any other devices will use VPN encryption when possible. Multifactor authentication is strongly recommended.
- 1.5 The Customer will perform a network penetration test looking for security vulnerabilities after the vendor has indicated the build out is complete and ready for production use. The vendor designed and implemented network must pass security review meaning any reasonable vulnerabilities closed and latest security patches applied to any software
- 1.6 Vendor will provide all security login credentials to the City for all equipment and software services configured for the radio system.
- 1.7 All router and switch configurations will be provided to be reviewed by the City but not managed by the country.
- 1.8 Any changes to firewall rules or access control list configurations will be Section G - Network Management Req reviewed and approved by the country prior to implementation.

### **OPTION 2: CITY MANAGED NETWORK**

- 2.1 City will use either EIGRP or OSPF for ring routing collapse protocol based on vendor requirements.
- 2.4 City will provide vendor dedicated isolated VLAN and IP address allocations. All deployed vendor hardware and software will not be using the default login credentials from the manufacture and must use unique passwords. Passwords will use the minimum following criteria.



- 2.4.1** At least 12 characters—the more characters, the better.
- 2.4.2** A mixture of both uppercase and lowercase letters.
- 2.4.3** A mixture of letters and numbers.
- 2.4.4** Inclusion of at least one special character, e.g., ! @ # ? ]
- 2.5** All egress points into the City's production data networks require firewall or approved access control list for routing and must be approved by
- 2.6** Vendor will provide all security login credentials to the City for all equipment and software services configured for the radio system.
- 2.7** Any remote access into the radio systems by devices such as computers, tablets, phones or any other devices will use VPN encryption when possible. Multifactor authentication is strongly recommended.

## Appendix G: Subscriber Radio List

### Portable Radios

Motorola	APX 6000	750
Motorola	APX 6000 XE	358
Motorola	N30	10
Motorola	XTS 1500	98
Motorola	XTS 2500	103
Motorola	XTS 5000	863

### Mobile Radios

Motorola	APX 4500	12
Motorola	APX 6500	177
Motorola	APX 7500	13
Motorola	APX 8500	16
Motorola	XTL 5000	46
Motorola	XTL 2500	91

## **Appendix H: Interoperability Needs**

Fort Lauderdale requires interoperability by ISSI to the following:

- A.** SLERS (State of Florida)
- B.** Broward County
- C.** Motorola HMS
- D.** An open, spare pathway for future use

### Attachment 1 - Compliance - Portable Radio Table

Item	Section	Description	Comply	Comply w/ Clarification	Do Not Comply (Exception)
1	3.42.3.1	The Vendor shall provide documentation, and demonstrate P25 operational compliancy with, minimally, BK Technologies (RELM), EF Johnson/Kenwood, L3Harris, Motorola Solutions, & Tait portable, mobile, and control station radios.  These radios must have been tested and certified to function on its proposed infrastructure technology. Documentation of P25 CAP certification shall be submitted as part of the response.			
2	A	The Vendor shall also describe those processes and methods it employs to confirm where software releases and hardware changes to its products, included in the proposal, are verified for continued compatibility with P25 equipment manufactured and offered for purchase by others.			
3	B	Allow operations on P25 trunked and conventional (analog/P25) systems with priority scan of talk groups or channels on both system types in the same scan list.			
4	C	Must meet APCO minimum recommendations and EIA/TIA standards for P25 Public Safety digital trunked radio systems. Furnished equipment must be operable on conventional and both Phase 1 and Phase 2 infrastructures.			
5	D	Offer digital voice, using an Advanced Multi-Band Excitation +2 (AMBE+2) or Newer P25 Phase 1 and Phase 2 vocoder.			
6	E	All equipment proposed shall be capable of standards-based voice encryption: federally approved P25 AES 256 coding to provide enhanced security during transmission and reception of sensitive communications; DES-OFB and other modes of voice encryption may be proposed as optional.			
7	3.42.3.2	Support special services, i.e. encrypted voice, Computer Aided Dispatch (CAD), and Automatic Vehicle Location (AVL).			
8	3.42.3.3	Temperature Range: -30 °C to +60 °C Humidity: 95% relative humidity at 50 °C			
9	3.42.3.4	All radio units are expected to be equipped with electronic, alphanumeric display(s) of a minimum of eight characters, used to readily identify selected talk groups and operating modes, (i.e. clear voice, encrypted voice, system availability, channel/talk group selection, incoming user ID, call alerts and operational status such as scan and channel busy)			
10	3.42.3.5	Talk Group Selection must be selectable by a rotary-knob style input. Additional selection types are optional.			
11	3.42.3.6	Talk Group Capacity: 16 minimum, per system			
12	3.42.3.7	Channel Capacity: 500 channels (Single band radio), 700 channels (Multi-band radio)			
13	3.42.3.8	The volume control is expected to be fully adjustable from zero to maximum audio output level.			

### Attachment 1 - Compliance - Portable Radio Table

Item	Section	Description	Comply	Comply w/ Clarification	Do Not Comply (Exception)
14	3.42.3.9	Radio operating information shall be contained in an electrically erasable memory device. Unit will be fully programmable from a laptop/desktop computer, via the accessory receptacle.			
15	3.42.3.10	Include transmit time out timer to warn the user that the radio may be transmitting longer than a predetermined time limit and then disable the transmitter.			
	3.42.5.1	Size, Weight, and Durability Specifications			
16	A	Small enough to be carried and manipulated with both bare and gloved hands.			
17	B	Lightweight enough to limit fatigue while being carried for a full twelve (12) hour shift.			
18	C	Include heavy duty construction and weather-sealed cases to meet Military Standards 810 D, E, F and G for shock, vibration, dust, humidity, high/low temperature and blowing rain.			
19	D	Include top mounted rotary controls with positive stops for volume and channel selection. Control placement must allow gloved hand operation, as is typically needed by the fire service or during cold weather events.			
20	E	Contain no protruding push-to-talk switch, thereby preventing accidental transmitter operation or potential damage to the switch caused by impact.			
21	F	Include a protected emergency button to allow easy access when needed but incorporating an ergonomic design in which the emergency function could not be accidentally activated.			
	3.42.5.2	Antenna, Accessory, and Carrying Case Specification			
22	E	The antenna should be physically short and in keeping with the size of the radio package. Units are expected to be operable, within the coverage area using the smallest unity-gain flexible antenna available.			
23	F	Each Portable radio should be supplied with, at a minimum, a belt clip			

# Attachment 2 - 358 - Pricing Worksheet Templates - PrimaryRedundant Site

## PRIMARY/REDUNDANT SITE (Individual Submittals Required)

Equipment Description	Quantity Required	List Unit Cost	Extended Cost	Maintenance Cost
Transmitters		\$ -	\$ -	\$ -
Transmitter Antenna System		\$ -	\$ -	\$ -
Combiner Package(s)		\$ -	\$ -	\$ -
Receiver Antenna System		\$ -	\$ -	\$ -
Multicoupler		\$ -	\$ -	\$ -
Mutual Aid System		\$ -	\$ -	\$ -
Gateway Control Stations		\$ -	\$ -	\$ -
Base Station Gateway		\$ -	\$ -	\$ -
Microwave Interface Equipment		\$ -	\$ -	\$ -
Broadband Gateway		\$ -	\$ -	\$ -
Inter SubSystem Interface (ISSI)		\$ -	\$ -	\$ -
Standby Generator System		\$ -	\$ -	\$ -
Battery Charger System		\$ -	\$ -	\$ -
Site Civil Modifications		\$ -	\$ -	\$ -
Tower		\$ -	\$ -	\$ -
Tower Installation		\$ -	\$ -	\$ -
Equipment Shelter		\$ -	\$ -	\$ -
Shelter Installation		\$ -	\$ -	\$ -
Project Management		\$ -	\$ -	\$ -
System Engineering		\$ -	\$ -	\$ -
		\$ -	\$ -	\$ -
		\$ -	\$ -	\$ -
		\$	-	\$

<b>Subtotal Equipment</b>	\$ -
<b>Subtotal Labor</b>	\$ -
<b>Total Equipment/Labor</b>	\$ -
<b>Total Annual Maintenance Cost</b>	\$ -

## Attachment 2 - 358 - Pricing Worksheet Templates - RADIO SITE (One Per Location)

### RADIO SITE (One Per Location)

Equipment Description	Quantity Required	List Unit Cost	Extended Cost	Maintenance Cost
Transmitters		\$ -	\$ -	\$ -
Transmitter Antenna System		\$ -	\$ -	\$ -
Combiner Package(s)		\$ -	\$ -	\$ -
Receiver Antenna System		\$ -	\$ -	\$ -
Multicoupler		\$ -	\$ -	\$ -
Mutual Aid System		\$ -	\$ -	\$ -
Gateway Control Stations		\$ -	\$ -	\$ -
Base Station Gateway		\$ -	\$ -	\$ -
Microwave Interface Equipment		\$ -	\$ -	\$ -
Broadband Gateway		\$ -	\$ -	\$ -
Inter SubSystem Interface (ISSI)		\$ -	\$ -	\$ -
Standby Generator System		\$ -	\$ -	\$ -
Battery Charger System		\$ -	\$ -	\$ -
Site Civil Modifications		\$ -	\$ -	\$ -
Tower		\$ -	\$ -	\$ -
Tower Installation		\$ -	\$ -	\$ -
Equipment Shelter		\$ -	\$ -	\$ -
Shelter Installation		\$ -	\$ -	\$ -
Project Management		\$ -	\$ -	\$ -
System Engineering		\$ -	\$ -	\$ -
		\$ -	\$ -	\$ -
		\$ -	\$ -	\$ -
		\$	-	\$

<b>Subtotal Equipment</b>	\$ -
<b>Subtotal Labor</b>	\$ -
<b>Total Equipment/Labor</b>	\$ -
<b>Total Annual Maintenance Cost</b>	\$ -

**Attachment 2 - 358 - Pricing Worksheet Templates - % Discount off List Price**

	<b>Years</b>	<b>Years</b>	<b>Years</b>
	<b>6-10</b>	<b>11-15</b>	<b>16-20</b>
<b>A.</b> Fixed Site Equipment	%	%	%
<b>B.</b> Antenna Related Equipment	%	%	%
<b>C.</b> Console Equipment	%	%	%
<b>D.</b> Control Station Equipment	%	%	%
<b>E.</b> Spare Parts	%	%	%
<b>F.</b> Managed & Support Services	%	%	%



Attachment 3 - 358 - P25 Equipment Trade in List

Type	Manufacturer	Model	Year New	Condition	Qty	Unit Price	Extended Price
Repeater	Motorola	GTR 800 MHz 6 Packs	2015	Good/Operational	6	\$ -	\$ -
Prime Site	Motorola	G series	2015	Good/Operational	1	\$ -	\$ -
Microwave Radio	MNI	6 GHz	2011	Good/Operational	4	\$ -	\$ -
Microwave Radio	MNI	11 GHz	2011	Good/Operational	4	\$ -	\$ -
UPS	APC	Symetra IX 16 KVA	2015	Good/Operational	5	\$ -	\$ -
Total:							\$ -

**Attachment 4 - 358 - Sub-contractor Disclosure Form**

<b>SUB-CONTRACTOR DISCLOSURE FORM</b>				
<b>List all sub contractors that will be participating in the project, on the respondent's behalf.</b>				
	<b>Name of Company</b>	<b>Contact Person</b>	<b>Phone</b>	<b>Email</b>
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

**CITY OF FORT LAUDERDALE  
GENERAL CONDITIONS**

These instructions and conditions are standard for all contracts for commodities or services issued through the City of Fort Lauderdale Procurement Services Division. The City may delete, supersede, or modify any of these standard instructions for a particular contract by indicating such change in the Invitation to Bid (ITB) Special Conditions, Technical Specifications, Instructions, Proposal Pages, Addenda, and Legal Advertisement. In this general conditions document, Invitation to Bid (ITB), Request for Qualifications (RFQ), and Request for Proposal (RFP) are interchangeable.

**PART I BIDDER PROPOSAL PAGE(S) CONDITIONS:**

- 1.01 BIDDER ADDRESS:** The City maintains automated vendor address lists that have been generated for each specific Commodity Class item through our bid issuing service, BidSync. Notices of Invitations to Bid (ITB'S) are sent by e-mail to the selection of bidders who have fully registered with BidSync or faxed (if applicable) to every vendor on those lists, who may then view the bid documents online. Bidders who have been informed of a bid's availability in any other manner are responsible for registering with BidSync in order to view the bid documents. There is no fee for doing so. If you wish bid notifications be provided to another e-mail address or fax, please contact BidSync. If you wish purchase orders sent to a different address, please so indicate in your bid response. If you wish payments sent to a different address, please so indicate on your invoice.
- 1.02 DELIVERY:** Time will be of the essence for any orders placed as a result of this ITB. The City reserves the right to cancel any orders, or part thereof, without obligation if delivery is not made in accordance with the schedule specified by the Bidder and accepted by the City.
- 1.03 PACKING SLIPS:** It will be the responsibility of the awarded Contractor, to attach all packing slips to the OUTSIDE of each shipment. Packing slips must provide a detailed description of what is to be received and reference the City of Fort Lauderdale purchase order number that is associated with the shipment. Failure to provide a detailed packing slip attached to the outside of shipment may result in refusal of shipment at Contractor's expense.
- 1.04 PAYMENT TERMS AND CASH DISCOUNTS:** Payment terms, unless otherwise stated in this ITB, will be considered to be net 45 days after the date of satisfactory delivery at the place of acceptance and receipt of correct invoice at the office specified, whichever occurs last. Bidder may offer cash discounts for prompt payment but they will not be considered in determination of award. If a Bidder offers a discount, it is understood that the discount time will be computed from the date of satisfactory delivery, at the place of acceptance, and receipt of correct invoice, at the office specified, whichever occurs last.
- 1.05 TOTAL BID DISCOUNT:** If Bidder offers a discount for award of all items listed in the bid, such discount shall be deducted from the total of the firm net unit prices bid and shall be considered in tabulation and award of bid.
- 1.06 BIDS FIRM FOR ACCEPTANCE:** Bidder warrants, by virtue of bidding, that the bid and the prices quoted in the bid will be firm for acceptance by the City for a period of one hundred twenty (120) days from the date of bid opening unless otherwise stated in the ITB.
- 1.07 VARIANCES:** For purposes of bid evaluation, Bidder's must indicate any variances, no matter how slight, from ITB General Conditions, Special Conditions, Specifications or Addenda in the space provided in the ITB. No variations or exceptions by a Bidder will be considered or deemed a part of the bid submitted unless such variances or exceptions are listed in the bid and referenced in the space provided on the bidder proposal pages. If variances are not stated, or referenced as required, it will be assumed that the product or service fully complies with the City's terms, conditions, and specifications.
- By receiving a bid, City does not necessarily accept any variances contained in the bid. All variances submitted are subject to review and approval by the City. If any bid contains material variances that, in the City's sole opinion, make that bid conditional in nature, the City reserves the right to reject the bid or part of the bid that is declared by the City as conditional.
- 1.08 NO BIDS:** If you do not intend to bid please indicate the reason, such as insufficient time to respond, do not offer product or service, unable to meet specifications, schedule would not permit, or any other reason, in the space provided in this ITB. Failure to bid or return no bid comments prior to the bid due and opening date and time, indicated in this ITB, may result in your firm being deleted from our Bidder's registration list for the Commodity Class Item requested in this ITB.
- 1.09 MINORITY AND WOMEN BUSINESS ENTERPRISE PARTICIPATION AND BUSINESS DEFINITIONS:** The City of Fort Lauderdale wants to increase the participation of Minority Business Enterprises (MBE), Women Business Enterprises (WBE), and Small Business Enterprises (SBE) in its procurement activities. If your firm qualifies in accordance with the below definitions please indicate in the space provided in this ITB.

Minority Business Enterprise (MBE) "A Minority Business" is a business enterprise that is owned or controlled by one or more socially or economically disadvantaged persons. Such disadvantage may arise from cultural, racial, chronic economic circumstances or background or other similar cause. Such persons include, but are not limited to: Blacks, Hispanics, Asian Americans, and Native Americans.

The term "Minority Business Enterprise" means a business at least 51 percent of which is owned by minority group members or, in the case of a publicly owned business, at least 51 percent of the stock of which is owned by minority group members. For the purpose of the preceding sentence, minority group members are citizens of the United States who include, but are not limited to: Blacks, Hispanics, Asian Americans, and Native Americans.

Women Business Enterprise (WBE) a "Women Owned or Controlled Business" is a business enterprise at least 51 percent of which is owned by females or, in the case of a publicly owned business, at least 51 percent of the stock of which is owned by females.

Small Business Enterprise (SBE) "Small Business" means a corporation, partnership, sole proprietorship, or other legal entity formed for the purpose of making a profit, which is independently owned and operated, has either fewer than 100 employees or less than \$1,000,000 in annual gross receipts.

BLACK, which includes persons having origins in any of the Black racial groups of Africa.

WHITE, which includes persons whose origins are Anglo-Saxon and Europeans and persons of Indo-European decent including Pakistani and East Indian.

HISPANIC, which includes persons of Mexican, Puerto Rican, Cuban, Central and South American, or other Spanish culture or origin, regardless of race.

NATIVE AMERICAN, which includes persons whose origins are American Indians, Eskimos, Aleuts, or Native Hawaiians.

ASIAN AMERICAN, which includes persons having origin in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.

**1.10 MINORITY-WOMEN BUSINESS ENTERPRISE PARTICIPATION**

It is the desire of the City of Fort Lauderdale to increase the participation of minority (MBE) and women-owned (WBE) businesses in its contracting and

procurement programs. While the City does not have any preference or set aside programs in place, it is committed to a policy of equitable participation for these firms. Proposers are requested to include in their proposals a narrative describing their past accomplishments and intended actions in this area. If proposers are considering minority or women owned enterprise participation in their proposal, those firms, and their specific duties have to be identified in the proposal. If a proposer is considered for award, he or she will be asked to meet with City staff so that the intended MBE/WBE participation can be formalized and included in the subsequent contract.

#### **1.11 SCRUTINIZED COMPANIES**

As a condition precedent to the effectiveness of this Agreement, subject to *Odebrecht Construction, Inc., v. Prasad*, 876 F.Supp.2d 1305 (S.D. Fla. 2012), *affirmed*, *Odebrecht Construction, Inc., v. Secretary, Florida Department of Transportation*, 715 F.3d 1268 (11th Cir. 2013), with regard to the "Cuba Amendment," the Contractor certifies that it is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, and that it does not have business operations in Cuba or Syria, as provided in section 287.135, Florida Statutes (2023), as may be amended or revised. As a condition precedent to any contract for goods or services of any amount and as a condition precedent to the renewal of any contract for goods or services of any amount, the Contractor certifies that it is not on the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2023), and that it is not engaged in a boycott of Israel. The City may terminate this Agreement at the City's option if the Contractor is found to have submitted a false certification as provided under subsection (5) of section 287.135, Florida Statutes (2023), as may be amended or revised, or been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2023), as may be amended or revised, or is engaged in a boycott of Israel, or has been engaged in business operations in Cuba or Syria, as defined in Section 287.135, Florida Statutes (2023), as may be amended or revised.

#### **1.12 DEBARRED OR SUSPENDED BIDDERS OR PROPOSERS**

The bidder or proposer certifies, by submission of a response to this solicitation, that neither it nor its principals and subcontractors are presently debarred or suspended by any Federal department or agency.

### **Part II DEFINITIONS/ORDER OF PRECEDENCE:**

#### **2.01 BIDDING DEFINITIONS** The City will use the following definitions in its general conditions, special conditions, technical specifications, instructions to bidders, addenda and any other document used in the bidding process:

INVITATION TO BID (ITB) The solicitation document used for soliciting competitive sealed bids for goods or services.

INVITATION TO NEGOTIATE (ITN) All solicitation documents, regardless of medium, whether attached to or incorporated by reference in solicitations for responses from firms that invite proposals from interested and qualified firms so the city may enter into negotiations with the firm(s) determined most capable of providing the required goods or services.

REQUEST FOR PROPOSALS (RFP) A solicitation method used for soliciting competitive sealed proposals to determine the best value among proposals for goods or services for which price may not be the prevailing factor in award of the contract, or the scope of work, specifications or contract terms and conditions may be difficult to define. Such solicitation will consider the qualifications of the proposers along with evaluation of each proposal using identified and generally weighted evaluation criteria. RFPs may include price criteria whenever feasible, at the discretion of the city.

REQUEST FOR QUALIFICATIONS (RFQ) A solicitation method used for requesting statements of qualifications in order to determine the most qualified proposer for professional services.

BID – a price and terms quote received in response to an ITB.

PROPOSAL – a proposal received in response to an RFP.

BIDDER – Person or firm submitting a Bid.

PROPOSER – Person or firm submitting a Proposal.

RESPONSIVE BIDDER – A firm who has submitted a bid, offer, quote, or response which conforms in all material respects to the competitive solicitation document and all of its requirements.

RESPONSIBLE BIDDER – A firm who is fully capable of meeting all requirements of the solicitation and subsequent contract. The respondent must possess the full capability, including financial and technical, ability, business judgment, experience, qualifications, facilities, equipment, integrity, capability, and reliability, in all respects to perform fully the contract requirements and assure good faith performance as determined by the city.

FIRST RANKED PROPOSER – That Proposer, responding to a City RFP, whose Proposal is deemed by the City, the most advantageous to the City after applying the evaluation criteria contained in the RFP.

SELLER – Successful Bidder or Proposer who is awarded a Purchase Order or Contract to provide goods or services to the City.

CONTRACTOR – Any firm having a contract with the city. Also referred to as a "Vendor".

CONTRACT – All types of agreements, including purchase orders, for procurement of supplies, services, and construction, regardless of what these agreements may be called.

CONSULTANT – A firm providing professional services for the city.

#### **2.02 SPECIAL CONDITIONS:** Any and all Special Conditions contained in this ITB that may be in variance or conflict with these General Conditions shall have precedence over these General Conditions. If no changes or deletions to General Conditions are made in the Special Conditions, then the General Conditions shall prevail in their entirety,

### **PART III BIDDING AND AWARD PROCEDURES:**

#### **3.01 SUBMISSION AND RECEIPT OF BIDS:** To receive consideration, bids must be received prior to the bid opening date and time. Unless otherwise specified, Bidders should use the proposal forms provided by the City. These forms may be duplicated, but failure to use the forms may cause the bid to be rejected. Any erasures or corrections on the bid must be made in ink and initialed by Bidder in ink. All information submitted by the Bidder shall be printed, typewritten, or filled in with pen and ink. Bids shall be signed in ink. Separate bids must be submitted for each ITB issued by the City in separate sealed envelopes properly marked. When a particular ITB or RFP requires multiple copies of bids or proposals they may be included in a single envelope or package properly sealed and identified. Only send bids via facsimile transmission (FAX) if the ITB specifically states that bids sent via FAX will be considered. If such a statement is not included in the ITB, bids sent via FAX will be rejected. Bids will be publicly opened in the Procurement Office, or other designated area, in the presence of Bidders, the public, and City staff. Bidders and the public are invited and encouraged to attend bid openings. Bids will be tabulated and made available for review by Bidder's and the public in accordance with applicable regulations.

#### **3.02 MODEL NUMBER CORRECTIONS:** If the model number for the make specified in this ITB is incorrect, or no longer available and replaced with an updated model with new specifications, the Bidder shall enter the correct model number on the bidder proposal page. In the case of an updated model with new specifications, Bidder shall provide adequate information to allow the City to determine if the model bid meets the City's requirements.

- 3.03 PRICES QUOTED:** Deduct trade discounts and quote firm net prices. Give both unit price and extended total. In the case of a discrepancy in computing the amount of the bid, the unit price quoted will govern. All prices quoted shall be F.O.B. destination, freight prepaid (Bidder pays and bears freight charges, Bidder owns goods in transit and files any claims), unless otherwise stated in Special Conditions. Each item must be bid separately. No attempt shall be made to tie any item or items contained in the ITB with any other business with the City.
- 3.04 TAXES:** The City of Fort Lauderdale is exempt from Federal Excise and Florida Sales taxes on direct purchase of tangible property. Exemption number for EIN is 59-6000319, and State Sales tax exemption number is 85-8013875578C-1.
- 3.05 WARRANTIES OF USAGE:** Any quantities listed in this ITB as estimated or projected are provided for tabulation and information purposes only. No warranty or guarantee of quantities is given or implied. It is understood that the Contractor will furnish the City's needs as they arise.
- 3.06 APPROVED EQUAL:** When the technical specifications call for a brand name, manufacturer, make, model, or vendor catalog number with acceptance of APPROVED EQUAL, it shall be for the purpose of establishing a level of quality and features desired and acceptable to the City. In such cases, the City will be receptive to any unit that would be considered by qualified City personnel as an approved equal. In that the specified make and model represent a level of quality and features desired by the City, the Bidder must state clearly in the bid any variance from those specifications. It is the Bidder's responsibility to provide adequate information, in the bid, to enable the City to ensure that the bid meets the required criteria. If adequate information is not submitted with the bid, it may be rejected. The City will be the sole judge in determining if the item bid qualifies as an approved equal.
- 3.07 MINIMUM AND MANDATORY TECHNICAL SPECIFICATIONS:** The technical specifications may include items that are considered minimum, mandatory, or required. If any Bidder is unable to meet or exceed these items, and feels that the technical specifications are overly restrictive, the bidder must notify the Procurement Services Division immediately. Such notification must be received by the Procurement Services Division prior to the deadline contained in the ITB, for questions of a material nature, or prior to five (5) days before bid due and open date, whichever occurs first. If no such notification is received prior to that deadline, the City will consider the technical specifications to be acceptable to all bidders.
- 3.08 MISTAKES:** Bidders are cautioned to examine all terms, conditions, specifications, drawings, exhibits, addenda, delivery instructions and special conditions pertaining to the ITB. Failure of the Bidder to examine all pertinent documents shall not entitle the bidder to any relief from the conditions imposed in the contract.
- 3.09 SAMPLES AND DEMONSTRATIONS:** Samples or inspection of product may be requested to determine suitability. Unless otherwise specified in Special Conditions, samples shall be requested after the date of bid opening, and if requested should be received by the City within seven (7) working days of request. Samples, when requested, must be furnished free of expense to the City and if not used in testing or destroyed, will upon request of the Bidder, be returned within thirty (30) days of bid award at Bidder's expense. When required, the City may request full demonstrations of units prior to award. When such demonstrations are requested, the Bidder shall respond promptly and arrange a demonstration at a convenient location. Failure to provide samples or demonstrations as specified by the City may result in rejection of a bid.
- 3.10 LIFE CYCLE COSTING:** If so specified in the ITB, the City may elect to evaluate equipment proposed on the basis of total cost of ownership. In using Life Cycle Costing, factors such as the following may be considered: estimated useful life, maintenance costs, cost of supplies, labor intensity, energy usage, environmental impact, and residual value. The City reserves the right to use those or other applicable criteria, in its sole opinion that will most accurately estimate total cost of use and ownership.
- 3.11 BIDDING ITEMS WITH RECYCLED CONTENT:** In addressing environmental concerns, the City of Fort Lauderdale encourages Bidders to submit bids or alternate bids containing items with recycled content. When submitting bids containing items with recycled content, Bidder shall provide documentation adequate for the City to verify the recycled content. The City prefers packaging consisting of materials that are degradable or able to be recycled. When specifically stated in the ITB, the City may give preference to bids containing items manufactured with recycled material or packaging that is able to be recycled.
- 3.12 USE OF OTHER GOVERNMENTAL CONTRACTS:** The City reserves the right to reject any part or all of any bids received and utilize other available governmental contracts, if such action is in its best interest.
- 3.13 QUALIFICATIONS/INSPECTION:** Bids will only be considered from firms normally engaged in providing the types of commodities/services specified herein. The City reserves the right to inspect the Bidder's facilities, equipment, personnel, and organization at any time, or to take any other action necessary to determine Bidder's ability to perform. The Procurement Director reserves the right to reject bids where evidence or evaluation is determined to indicate inability to perform.
- 3.14 BID SURETY:** If Special Conditions require a bid security, it shall be submitted in the amount stated. A bid security can be in the form of a bid bond or cashier's check. Bid security will be returned to the unsuccessful bidders as soon as practicable after opening of bids. Bid security will be returned to the successful bidder after acceptance of the performance bond, if required; acceptance of insurance coverage, if required; and full execution of contract documents, if required; or conditions as stated in Special Conditions.
- 3.15 PUBLIC RECORDS/TRADE SECRETS/COPYRIGHT:** The Proposer's response to the RFP is a public record pursuant to Florida law, which is subject to disclosure by the City under the State of Florida Public Records Law, Florida Statutes Chapter 119.07 ("Public Records Law"). The City shall permit public access to all documents, papers, letters or other material submitted in connection with this RFP and the Contract to be executed for this RFP, subject to the provisions of Chapter 119.07 of the Florida Statutes.

Any language contained in the Proposer's response to the RFP purporting to require confidentiality of any portion of the Proposer's response to the RFP, except to the extent that certain information is in the City's opinion a Trade Secret pursuant to Florida law, shall be void. If a Proposer submits any documents or other information to the City which the Proposer claims is Trade Secret information and exempt from Florida Statutes Chapter 119.07 ("Public Records Laws"), the Proposer shall clearly designate that it is a Trade Secret and that it is asserting that the document or information is exempt. The Proposer must specifically identify the exemption being claimed under Florida Statutes 119.07. The City shall be the final arbiter of whether any information contained in the Proposer's response to the RFP constitutes a Trade Secret. The city's determination of whether an exemption applies shall be final, and the proposer agrees to defend, indemnify, and hold harmless the City and the City's officers, employees, and agents, against any loss or damages incurred by any person or entity as a result of the City's treatment of records as public records. In addition, the proposer agrees to defend, indemnify, and hold harmless the City and the City's officers, employees, and agents, against any loss or damages incurred by any person or entity as a result of the City's treatment of records as exempt from disclosure or confidential. Proposals bearing copyright symbols or otherwise purporting to be subject to copyright protection in full or in part may be rejected. The proposer authorizes the City to publish, copy, and reproduce any and all documents submitted to the City bearing copyright symbols or otherwise purporting to be subject to copyright protection.

EXCEPT FOR CLEARLY MARKED PORTIONS THAT ARE BONA FIDE TRADE SECRETS PURSUANT TO FLORIDA LAW, DO NOT MARK YOUR RESPONSE TO THE RFP AS PROPRIETARY OR CONFIDENTIAL. DO NOT MARK YOUR RESPONSE TO THE RFP OR ANY PART THEREOF AS COPYRIGHTED.

**3.16 PROHIBITION OF INTEREST:** No contract will be awarded to a bidding firm who has City elected officials, officers or employees affiliated with it, unless the bidding firm has fully complied with current Florida State Statutes and City Ordinances relating to this issue. Bidders must disclose any such affiliation. Failure to disclose any such affiliation will result in disqualification of the Bidder and removal of the Bidder from the City's bidder lists and prohibition from engaging in any business with the City.

**3.17 RESERVATIONS FOR AWARD AND REJECTION OF BIDS:** The City reserves the right to accept or reject any or all bids, part of bids, and to waive minor irregularities or variations to specifications contained in bids, and minor irregularities in the bidding process. The City also reserves the right to award the contract on a split order basis, lump sum basis, individual item basis, or such combination as shall best serve the interest of the City. The City reserves the right to make an award to the responsive and responsible bidder whose product or service meets the terms, conditions, and specifications of the ITB and whose bid is considered to best serve the City's interest. In determining the responsiveness of the offer and the responsibility of the Bidder, the following shall be considered when applicable: the ability, capacity and skill of the Bidder to perform as required; whether the Bidder can perform promptly, or within the time specified, without delay or interference; the character, integrity, reputation, judgment, experience and efficiency of the Bidder; the quality of past performance by the Bidder; the previous and existing compliance by the Bidder with related laws and ordinances; the sufficiency of the Bidder's financial resources; the availability, quality and adaptability of the Bidder's supplies or services to the required use; the ability of the Bidder to provide future maintenance, service or parts; the number and scope of conditions attached to the bid.

If the ITB provides for a contract trial period, the City reserves the right, in the event the selected bidder does not perform satisfactorily, to award a trial period to the next ranked bidder or to award a contract to the next ranked bidder, if that bidder has successfully provided services to the City in the past. This procedure to continue until a bidder is selected or the contract is re-bid, at the sole option of the City.

**3.18 LEGAL REQUIREMENTS:** Applicable provisions of all federal, state, county laws, and local ordinances, rules and regulations, shall govern development, submittal and evaluation of all bids received in response hereto and shall govern any and all claims and disputes which may arise between person(s) submitting a bid response hereto and the City by and through its officers, employees and authorized representatives, or any other person, natural or otherwise; and lack of knowledge by any bidder shall not constitute a cognizable defense against the legal effect thereof.

**3.19 BID PROTEST PROCEDURE:** Any proposer or bidder who is not recommended for award of a contract and who alleges a failure by the city to follow the city's procurement ordinance or any applicable law may protest to the chief procurement officer, by delivering a letter of protest to the director of finance within five (5) days after a notice of intent to award is posted on the city's web site at the following url: <https://www.fortlauderdale.gov/departments/finance/procurement-services/notices-of-intent-to-award>

The complete protest ordinance may be found on the city's web site at the following url:  
[https://library.municode.com/fl/fort\\_lauderdale/codes/code\\_of\\_ordinances?nodeid=coor\\_ch2ad\\_artvfi\\_div2pr\\_s2-182direpr](https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeid=coor_ch2ad_artvfi_div2pr_s2-182direpr)

#### **PART IV BONDS AND INSURANCE**

**4.01 PERFORMANCE BOND:** If a performance bond is required in Special Conditions, the Contractor shall within fifteen (15) working days after notification of award, furnish to the City a Performance Bond, payable to the City of Fort Lauderdale, Florida, in the face amount specified in Special Conditions as surety for faithful performance under the terms and conditions of the contract. If the bond is on an annual coverage basis, renewal for each succeeding year shall be submitted to the City thirty (30) days prior to the termination date of the existing Performance Bond. The Performance Bond must be executed by a surety company of recognized standing, authorized to do business in the State of Florida and having a resident agent.

Acknowledgement and agreement is given by both parties that the amount herein set for the Performance Bond is not intended to be nor shall be deemed to be in the nature of liquidated damages nor is it intended to limit the liability of the Contractor to the City in the event of a material breach of this Agreement by the Contractor.

**4.02 INSURANCE:** The Contractor shall assume full responsibility and expense to obtain all necessary insurance as required by City or specified in Special Conditions.

The Contractor shall provide to the Procurement Services Division original certificates of coverage and receive notification of approval of those certificates by the City's Risk Manager prior to engaging in any activities under this contract. The Contractor's insurance is subject to the approval of the City's Risk Manager. The certificates must list the City as an ADDITIONAL INSURED for General Liability Insurance and shall have no less than thirty (30) days written notice of cancellation or material change. Further modification of the insurance requirements may be made at the sole discretion of the City's Risk Manager if circumstances change or adequate protection of the City is not presented. Bidder, by submitting the bid, agrees to abide by such modifications.

#### **PART V PURCHASE ORDER AND CONTRACT TERMS:**

**5.01 COMPLIANCE WITH SPECIFICATIONS, LATE DELIVERIES/PENALTIES:** Items offered may be tested for compliance with bid specifications. Items delivered which do not conform to bid specifications may be rejected and returned at Contractor's expense. Any violation resulting in contract termination for cause or delivery of items not conforming to specifications, or late delivery may also result in:

- Bidder's name being removed from the City's bidder's mailing list for a specified period and Bidder will not be recommended for any award during that period.
- All City Departments being advised to refrain from doing business with the Bidder.
- All other remedies in law or equity.

**5.02 ACCEPTANCE, CONDITION, AND PACKAGING:** The material delivered in response to ITB award shall remain the property of the Seller until a physical inspection is made and the material accepted to the satisfaction of the City. The material must comply fully with the terms of the ITB, be of the required quality, new, and the latest model. All containers shall be suitable for storage and shipment by common carrier, and all prices shall include standard commercial packaging. The City will not accept substitutes of any kind. Any substitutes or material not meeting specifications will be returned at the Bidder's expense. Payment will be made only after City receipt and acceptance of materials or services.

**5.03 SAFETY STANDARDS:** All manufactured items and fabricated assemblies shall comply with applicable requirements of the Occupation Safety and Health Act of 1970 as amended.

- 5.04 ASBESTOS STATEMENT:** All material supplied must be 100% asbestos free. Bidder, by virtue of bidding, certifies that if awarded any portion of the ITB the bidder will supply only material or equipment that is 100% asbestos free.
- 5.05 OTHER GOVERNMENTAL ENTITIES:** If the Bidder is awarded a contract as a result of this ITB, the bidder may, if the bidder has sufficient capacity or quantities available, provide to other governmental agencies, so requesting, the products or services awarded in accordance with the terms and conditions of the ITB and resulting contract. Prices shall be F.O.B. delivered to the requesting agency.
- 5.06 VERBAL INSTRUCTIONS PROCEDURE:** No negotiations, decisions, or actions shall be initiated or executed by the Contractor as a result of any discussions with any City employee. Only those communications which are in writing from an authorized City representative may be considered. Only written communications from Contractors, which are assigned by a person designated as authorized to bind the Contractor, will be recognized by the City as duly authorized expressions on behalf of Contractors.
- 5.07 INDEPENDENT CONTRACTOR:** The Contractor is an independent contractor under this Agreement. Personal services provided by the Proposer shall be by employees of the Contractor and subject to supervision by the Contractor, and not as officers, employees, or agents of the City. Personnel policies, tax responsibilities, social security, health insurance, employee benefits, procurement policies unless otherwise stated in this ITB, and other similar administrative procedures applicable to services rendered under this contract shall be those of the Contractor.
- 5.08 INDEMNITY/HOLD HARMLESS AGREEMENT:** Contractor shall protect and defend at Contractor's expense, counsel being subject to the City's approval, and indemnify and hold harmless the City and the City's officers, employees, volunteers, and agents from and against any and all losses, penalties, fines, damages, settlements, judgments, claims, costs, charges, expenses, or liabilities, including any award of attorney fees and any award of costs, in connection with or arising directly or indirectly out of any act or omission by the Contractor or by any officer, employee, agent, invitee, subcontractor, or sublicensee of the Contractor. Without limiting the foregoing, any and all such claims, suits, or other actions relating to personal injury, death, damage to property, defects in materials or workmanship, actual or alleged violations of any applicable statute, ordinance, administrative order, rule or regulation, or decree of any court shall be included in the indemnity hereunder.
- 5.09 TERMINATION FOR CAUSE:** If, through any cause, the Contractor shall fail to fulfill in a timely and proper manner its obligations under this Agreement, or if the Contractor shall violate any of the provisions of this Agreement, the City may upon written notice to the Contractor terminate the right of the Contractor to proceed under this Agreement, or with such part or parts of the Agreement as to which there has been default, and may hold the Contractor liable for any damages caused to the City by reason of such default and termination. In the event of such termination, any completed services performed by the Contractor under this Agreement shall, at the option of the City, become the City's property and the Contractor shall be entitled to receive equitable compensation for any work completed to the satisfaction of the City. The Contractor, however, shall not be relieved of liability to the City for damages sustained by the City by reason of any breach of the Agreement by the Contractor, and the City may withhold any payments to the Contractor for the purpose of setoff until such time as the amount of damages due to the City from the Contractor can be determined.
- 5.10 TERMINATION FOR CONVENIENCE:** The City reserves the right, in the City's best interest as determined by the City, to cancel any contract by giving written notice to the Contractor thirty (30) days prior to the effective date of such cancellation.
- 5.11 CANCELLATION FOR UNAPPROPRIATED FUNDS:** The obligation of the City for payment to a Contractor is limited to the availability of funds appropriated in a current fiscal period, and continuation of the contract into a subsequent fiscal period is subject to appropriation of funds, unless otherwise authorized by law.
- 5.12 RECORDS/AUDIT:** The Contractor shall maintain during the term of the contract all books of account, reports and records in accordance with generally accepted accounting practices and standards for records directly related to this contract. The Contractor agrees to make available to the City Auditor or the City Auditor's designee, during normal business hours and in Broward, Miami-Dade or Palm Beach Counties, all books of account, reports, and records relating to this contract. The Contractor shall retain all books of account, reports, and records relating to this contract for the duration of the contract and for three years after the final payment under this Agreement, until all pending audits, investigations or litigation matters relating to the contract are closed, or until expiration of the records retention period prescribed by Florida law or the records retention schedules adopted by the Division of Library and Information Services of the Florida Department of State, whichever is later.
- 5.13 PERMITS, TAXES, LICENSES:** The successful Contractor shall, at his/her/its own expense, obtain all necessary permits, pay all licenses, fees and taxes, required to comply with all local ordinances, state and federal laws, rules and regulations applicable to business to be carried out under this contract.
- 5.14 LAWS/ORDINANCES:** The Contractor shall observe and comply with all Federal, state, local and municipal laws, ordinances rules and regulations that would apply to this contract.
- NON-DISCRIMINATION:** The Contractor shall not, in any of its activities, including employment, discriminate against any individual on the basis of race, color, national origin, age, religion, creed, sex, disability, sexual orientation, gender, gender identity, gender expression, marital status, or any other protected classification as defined by applicable law.
1. The Contractor certifies and represents that the Contractor will comply with Section 2-187, Code of Ordinances of the City of Fort Lauderdale, Florida, (2019), as may be amended or revised, ("Section 2-187"), during the entire term of this Agreement.
  2. The failure of the Contractor to comply with Section 2-187 shall be deemed to be a material breach of this Agreement, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.
  3. The City may terminate this Agreement if the Contractor fails to comply with Section 2-187.
  4. The City may retain all monies due or to become due until the Contractor complies with Section 2-187.
  5. The Contractor may be subject to debarment or suspension proceedings. Such proceedings will be consistent with the procedures in section 2-183 of the Code of Ordinances of the City of Fort Lauderdale, Florida.
- 5.15 UNUSUAL CIRCUMSTANCES:** If during a contract term where costs to the City are to remain firm or adjustments are restricted by a percentage or CPI cap, unusual circumstances that could not have been foreseen by either party of the contract occur, and those circumstances significantly affect the Contractor's cost in providing the required prior items or services, then the Contractor may request adjustments to the costs to the City to reflect the changed circumstances. The circumstances must be beyond the control of the Contractor, and the requested adjustments must be fully documented. The City may, after examination, refuse to accept the adjusted costs if they are not properly documented, increases are considered to be excessive, or decreases are considered to be insufficient. In the event the City does not wish to accept the adjusted costs and the matter cannot be resolved to the satisfaction of the City, the City will reserve the following options:

1. The contract can be canceled by the City upon giving thirty (30) days written notice to the Contractor with no penalty to the City or Contractor. The Contractor shall fill all City requirements submitted to the Contractor until the termination date contained in the notice.
2. The City requires the Contractor to continue to provide the items and services at the firm fixed (non-adjusted) cost until the termination of the contract term then in effect.
3. If the City, in its interest and in its sole opinion, determines that the Contractor in a capricious manner attempted to use this section of the contract to relieve Contractor of a legitimate obligation under the contract, and no unusual circumstances had occurred, the City reserves the right to take any and all action under law or equity. Such action shall include, but not be limited to, declaring the Contractor in default and disqualifying Contractor from receiving any business from the City for a stated period of time.

If the City does agree to adjusted costs, these adjusted costs shall not be invoiced to the City until the Contractor receives notice in writing signed by a person authorized to bind the City in such matters.

- 5.16 ELIGIBILITY:** If applicable, the Contractor must first register with the Florida Department of State in accordance with Florida Statutes, prior to entering into a contract with the City.
- 5.17 PATENTS AND ROYALTIES:** The Contractor, without exception, shall defend, indemnify, and hold harmless the City and the City's employees, officers, employees, volunteers, and agents from and against liability of any nature and kind, including cost and expenses for or on account of any copyrighted, patented or un-patented invention, process, or article manufactured or used in the performance of the contract, including their use by the City. If the Contractor uses any design, device, or materials covered by letters, patent or copyright, it is mutually agreed and understood without exception that the bid prices shall include any and all royalties or costs arising from the use of such design, device, or materials in any way involved in the work.
- 5.18 ASSIGNMENT:** Contractor shall not transfer or assign the performance required by this ITB without the prior written consent of the City. Any award issued pursuant to this ITB, and the monies, which may become due hereunder, are not assignable except with the prior written approval of the City Commission or the City Manager or City Manager's designee, depending on original award approval.
- 5.19 GOVERNING LAW; VENUE:** The Contract shall be governed by and construed in accordance with the laws of the State of Florida. Venue for any lawsuit by either party against the other party or otherwise arising out of the Contract, and for any other legal proceeding, shall be in the courts in and for Broward County, Florida, or in the event of federal jurisdiction, in the Southern District of Florida.
- 5.20 PUBLIC RECORDS:**

**IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT CITY CLERK'S OFFICE, ONE EAST BROWARD BOULEVARD, SUITE 444, FORT LAUDERDALE, FLORIDA 33301, 954-828-5002, [PRRCONTRACT@FORTLAUDERDALE.GOV](mailto:PRRCONTRACT@FORTLAUDERDALE.GOV).**

Contractor shall comply with public records laws, and Contractor shall:

1. Keep and maintain public records required by the City to perform the service.
2. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes (2019), as may be amended or revised, or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the Contractor does not transfer the records to the City.
4. Upon completion of the Contract, transfer, at no cost, to the City all public records in possession of the Contractor or keep and maintain public records required by the City to perform the service. If the Contractor transfers all public records to the City upon completion of the Contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the Contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.





### **NON-COLLUSION STATEMENT**

By signing this offer, the vendor/contractor certifies that this offer is made independently and *free* from collusion. Vendor shall disclose below any City of Fort Lauderdale, FL officer or employee, or any relative of any such officer or employee who is an officer or director of, or has a material interest in, the vendor's business, who is in a position to influence this procurement.

Any City of Fort Lauderdale, FL officer or employee who has any input into the writing of specifications or requirements, solicitation of offers, decision to award, evaluation of offers, or any other activity pertinent to this procurement is presumed, for purposes hereof, to be in a position to influence this procurement.

For purposes hereof, a person has a material interest if they directly or indirectly own more than 5 percent of the total assets or capital stock of any business entity, or if they otherwise stand to personally gain if the contract is awarded to this vendor.

In accordance with City of Fort Lauderdale, FL Policy and Standards Manual, 6.10.8.3,

3.3. City employees may not contract with the City through any corporation or business entity in which they or their immediate family members hold a controlling financial interest (e.g., ownership of five (5) percent or more).

3.4. Immediate family members (spouse, parents, and children) are also prohibited from contracting with the City subject to the same general rules.

**Failure of a vendor to disclose any relationship described herein shall be reason for debarment in accordance with the provisions of the City Procurement Code.**

#### **NAME**

#### **RELATIONSHIPS**

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**In the event the vendor does not indicate any names, the City shall interpret this to mean that the vendor has indicated that no such relationships exist.**

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Name (Printed)

\_\_\_\_\_  
Date



**CONTRACTOR'S CERTIFICATE OF COMPLIANCE WITH  
NON-DISCRIMINATION PROVISIONS OF THE CONTRACT**

The completed and signed form should be returned with the Contractor's submittal. If not provided with submittal, the Contractor must submit within three business days of City's request. Contractor may be deemed non-responsive for failure to fully comply within stated timeframes.

Pursuant to City Ordinance Sec. 2-17(a)(i)(ii), bidders must certify compliance with the Non-Discrimination provision of the ordinance.

- A. Contractors doing business with the City shall not discriminate against their employees based on the employee's race, color, religion, gender (including identity or expression), marital status, sexual orientation, national origin, age, disability, or any other protected classification as defined by applicable law.

Contracts. Every Contract exceeding \$100,000, or otherwise exempt from this section shall contain language that obligates the Contractor to comply with the applicable provisions of this section.

The Contract shall include provisions for the following:

- (i) The Contractor certifies and represents that it will comply with this section during the entire term of the contract.
- (ii) The failure of the Contractor to comply with this section shall be deemed to be a material breach of the contract, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Print Name and Title

\_\_\_\_\_  
Date

## **E-VERIFY AFFIRMATION STATEMENT**

RFP/Bid /Contract No: \_\_\_\_\_

Project Description: \_\_\_\_\_

\_\_\_\_\_

Contractor/Proposer/Bidder acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of,

- (a) all persons employed by Contractor/Proposer/Bidder to perform employment duties within Florida during the term of the Contract, and,
- (b) all persons (including subcontractors/vendors) assigned by Contractor/Proposer/Bidder to perform work pursuant to the Contract.

The Contractor/Proposer/Bidder acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the Contract is a condition of the Contract.

Contractor/Proposer/ Bidder Company Name: \_\_\_\_\_

Authorized Company Person's Signature: \_\_\_\_\_

Authorized Company Person's Title: \_\_\_\_\_

Date: \_\_\_\_\_

## CITY OF FORT LAUDERDALE BID/PROPOSAL CERTIFICATION

**Please Note:** It is the sole responsibility of the bidder/proposer to ensure that their response is submitted electronically through the [City's on-line strategic sourcing platform](#) prior to the bid opening date and time listed. Paper bid submittals will not be accepted. All fields below must be completed. If the field does not apply to you, please note N/A in that field.

If you are a foreign corporation, you may be required to obtain a certificate of authority from the department of state, in accordance with Florida Statute §607.1501 (visit <http://www.dos.state.fl.us/>).

Company: (Legal Registration) \_\_\_\_\_ EIN (Optional): \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone No.: \_\_\_\_\_ FAX No.: \_\_\_\_\_ Email: \_\_\_\_\_

Delivery: Calendar days after receipt of Purchase Order (**section 1.02 of General Conditions**): \_\_\_\_\_

Total Bid Discount (**section 1.05 of General Conditions**): \_\_\_\_\_

Check box if your firm qualifies for DBE (**section 1.09 of General Conditions**): ☐

**ADDENDUM ACKNOWLEDGEMENT** - Proposer acknowledges that the following addenda have been received and are included in the proposal:

Addendum No.	Date Issued	Addendum No.	Date Issued	Addendum No.	Date Issued	Addendum No.	Date Issued
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

**VARIANCES:** If you take exception or have variances to any term, condition, specification, scope of service, or requirement in this competitive solicitation you must specify such exception or variance in the space provided below or reference in the space provided below all variances contained on other pages within your response. Additional pages may be attached if necessary. No exceptions or variances will be deemed to be part of the response submitted unless such is listed and contained in the space provided below. The City does not, by virtue of submitting a variance, necessarily accept any variances. If no statement is contained in the below space, it is hereby implied that your response is in full compliance with this competitive solicitation. If you do not have variances, simply mark N/A.

The below signatory hereby agrees to furnish the following article(s) or services at the price(s) and terms stated subject to all instructions, conditions, specifications addenda, legal advertisement, and conditions contained in the bid/proposal. I have read all attachments including the specifications and fully understand what is required. By submitting this signed proposal, I will accept a contract if approved by the City and such acceptance covers all terms, conditions, and specifications of this bid/proposal. The below signatory also hereby agrees, by virtue of submitting or attempting to submit a response, that in no event shall the City's liability for respondent's direct, indirect, incidental, consequential, special or exemplary damages, expenses, or lost profits arising out of this competitive solicitation process, including but not limited to public advertisement, bid conferences, site visits, evaluations, oral presentations, or award proceedings exceed the amount of Five Hundred Dollars (\$500.00). This limitation shall not apply to claims arising under any provision of indemnification or the City's protest ordinance contained in this competitive solicitation.

Submitted by:

\_\_\_\_\_  
Name (printed)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title



# ANTI-HUMAN TRAFFICKING AFFIDAVIT

Rev Date: 01/13/2025

The undersigned, on behalf of \_\_\_\_\_,  
(Print complete name incorporated with suffix: INC, LLC, LTD, LP, PA, etc.)  
a \_\_\_\_\_ (State corporation is registered) \_\_\_\_\_ (Type of entity: profit or non-profit),  
("Nongovernmental Entity"), under penalty of perjury, hereby deposes and says:

1. My name is \_\_\_\_\_.  
(Print complete name of corporate officer/authorized representative)
2. I am an ☐ officer or ☐ authorized representative (Select one) of the Nongovernmental Entity. My title is: \_\_\_\_\_.  
(Print title of corporate officer/authorized representative)
3. I attest that the Nongovernmental Entity does not use coercion for labor or services as defined in Section 787.06, Florida Statutes (2024), as may be amended or revised.

Under penalties of perjury, I declare that I have read the foregoing Anti-Human Trafficking Affidavit and that the facts stated in it are true.

Signature of Officer or Representative: \_\_\_\_\_

Office Address: \_\_\_\_\_

Email Address: \_\_\_\_\_

Main Phone Number: \_\_\_\_\_ FEIN No.: \_\_\_\_\_

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

Sworn to and subscribed before me by means of ☐ physical presence or ☐ online  
notarization, this \_\_\_\_ day of \_\_\_\_\_, 2025, by \_\_\_\_\_.  
(Print name of corporate officer/representative)

\_\_\_\_\_  
(Signature of Notary Public – State of \_\_\_\_\_)

(NOTARY SEAL)

\_\_\_\_\_  
Print, Type or Stamp Commissioned Name of  
Notary Public)

Personally Known ☐ OR Produced Identification ☐

Type of Identification Produced \_\_\_\_\_

**AFFIDAVIT OF COMPLIANCE WITH FOREIGN ENTITY LAWS**  
**(Florida Statute- §287.138, 692.201, 692.202, 692.203, and 692.204)**

The undersigned, on behalf of the entity listed below ("Entity"), hereby attests under penalty of perjury as follows:

1. Entity is not owned by the government of a foreign country of concern as defined in Section 287.138, Florida Statutes. (Source:§ 287.138(2)(a), Florida Statutes)
2. The government of a foreign country of concern does not have a controlling interest in Entity. (Source:§ 287.138(2)(b), Florida Statutes)
3. Entity is not organized under the laws of, and does not have a principal place of business in, a foreign country of concern. (Source: § 287.138(2)(c), Florida Statutes)
4. Entity is not owned or controlled by the government of a foreign country of concern, as defined in Section 692.201, Florida Statutes. (Source:§ 288.007(2), Florida Statutes)
5. Entity is not a partnership, association, corporation, organization, or other combination of persons organized under the laws of or having its principal place of business in a foreign country of concern, as defined in Section 692.201, Florida Statutes, or a subsidiary of such entity. (Source: § 288.007(2), Florida Statutes)
6. Entity is not a foreign principal, as defined in Section 692.201, Florida Statutes. (Source: § 692.202(5)(a)(I), Florida Statutes)
7. Entity is in compliance with all applicable requirements of Sections 692.202, 692.203, and 692.204, Florida Statutes.
8. **(Only applicable if purchasing real property)** Entity is not a foreign principal prohibited from purchasing the subject real property. Entity is either (a) not a person or entity described in Section 692.204(1)(a), Florida Statutes, or (b) authorized under Section 692.204(2), Florida Statutes, to purchase the subject property. Entity is in compliance with the requirements of Section 692.204, Florida Statutes. (Source:§§ 692.203(6)(a), 692.204(6)(a), Florida Statutes)
9. The undersigned is authorized to execute this affidavit on behalf of Entity.

Name: \_\_\_\_\_ Title: \_\_\_\_\_ Entity: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**NOTARY PUBLIC ACKNOWLEDGEMENT SECTION**

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me, by means of ☐ physical presence or ☐ online notarization, this \_\_\_\_ day of \_\_\_\_\_, 20\_\_, by \_\_\_\_\_, as \_\_\_\_\_ for \_\_\_\_\_, who is personally known to me or who has produced \_\_\_\_\_ as identification.

Notary Public Signature: \_\_\_\_\_

(Notary Seal)

Print Name: \_\_\_\_\_

My commission expires: \_\_\_\_\_



## ADDENDUM NO. 1

RFP No. 358

TITLE: P25 Radio Communication System Refresh-Replacement

ISSUED: April 4, 2025

This addendum is being issued to make the following change(s).

The Specifications and Requirements have been revised. Words in strikethrough are deletions from the existing text and words in bold underline are additions to the existing text (~~strikethrough removed~~; **underlined bolded** is added).

1. Section 2.9 Payment Method shall now read as follows:

**2.9 Payment Method – N/A**

~~The City of Fort Lauderdale has implemented a Procurement Card (P-Card) program which changes how payments are remitted to its vendors. The City has transitioned from traditional paper checks to payment by credit card via MasterCard or Visa. This allows you as a vendor of the City of Fort Lauderdale to receive your payment fast and safely. No more waiting for checks to be printed and mailed. Payments will be made utilizing the City's P-Card (MasterCard or Visa). Accordingly, firms must presently have the ability to accept credit card payment or take whatever steps necessary to implement acceptance of a credit card before the commencement of a contract. See Contract Payment Method form attached.~~

2. Required Forms Packet revised with CONTRACT PAYMENT METHOD form removed to reflect the above change.

3. Section 2.45 Service Organizational Controls shall now read as follows:

**2.45 Service Organization Controls**

The Contactor should provide a current SSAE 18, SOC 2, Type I report with their proposal. Awarded Contractor will be required to provide an SSAE 18, SOC 2, Type II report annually during the term of this contract. If the Contractor cannot provide the SSAE 18, SOC 2, Type I report at time of proposal submittal, a current SOC 3 report will be accepted.

**Where respondents propose systems that are not reliant on offsite infrastructure (cloud hosting), SOC-2 is not necessary.**



City of Fort Lauderdale • Procurement Services Division  
100 N. Andrews Avenue, Suite 619 • Fort Lauderdale, Florida 33301  
954-828-5933 • Fax 954-828-5576 • [purchase@fortlauderdale.gov](mailto:purchase@fortlauderdale.gov)

All other terms, conditions, and specifications remain unchanged.

Laurie Platkin  
Senior Procurement Specialist

Company Name: \_\_\_\_\_  
(please print)

Bidder's Signature: \_\_\_\_\_

Date: \_\_\_\_\_





## ADDENDUM NO. 2

RFP No. 358

TITLE: P25 Radio Communication System Refresh-Replacement

ISSUED: April 11, 2025

This addendum is being issued to make the following change(s).

The Specifications and Requirements have been revised. Words in strikethrough are deletions from the existing text and words in bold underline are additions to the existing text (~~strikethrough removed~~; **underlined bolded is added**).

1. Pre-bid Conference Meeting and Site Visit start time has changed from 9:00 am to **10:30 am**.

2. Section 3.42.4.1 shall now read as follows:

**3.42.3.1** The vendor shall provide to the Customer no less than ~~five sets~~ **eight (8) sets** of radio programming software, appropriately configured laptop computers, and all other support equipment and special cables necessary to program and encrypt (key load) each type of radio and control station equipment/device supplied by the Proposer.

3. Section 5.2.2 Weighted Criteria shall now read as follows:

### 5.2.2 Weighted Criteria

Understands the Scope of the Project	10%
References, Past Performance, Years in Business	10%
Technical Merits of the Project, Flexibility of Technology Proposed, Quality of Proposed Equipment	<b><u>30%</u></b>
Hardening and Redundancy	10%
Radio Coverage	10%
Total Project Cost	30%
<b>TOTAL PERCENT AVAILABLE:</b>	<b>100%</b>

4. Attachment 4 - 358 - Sub-contractor Disclosure Form attached to solicitation.

All other terms, conditions, and specifications remain unchanged.



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954-828-5933 • Fax 954-828-5576 • [purchase@fortlauderdale.gov](mailto:purchase@fortlauderdale.gov)

Laurie Platkin  
Senior Procurement Specialist

Company Name: \_\_\_\_\_  
(please print)

Bidder's Signature: \_\_\_\_\_

Date: \_\_\_\_\_



City of Fort Lauderdale • Procurement Services Division  
100 N. Andrews Avenue, Suite 619 • Fort Lauderdale, Florida 33301  
954-828-5933 • Fax 954-828-5576 • [purchase@fortlauderdale.gov](mailto:purchase@fortlauderdale.gov)

### **ADDENDUM NO. 3**

RFP No. 358

TITLE: P25 Radio Communication System Refresh-Replacement

ISSUED: April 17, 2025

This addendum is being issued to make the following change(s).

1. Pre-bid Conference Meeting and Site Visit. To ease in access to IT Headquarters, we request all Company/Firms that will have representation attending the meeting to email [lplatkin@fortlauderdale.gov](mailto:lplatkin@fortlauderdale.gov) and provide First and Last Name and Company/Firm they represent.
2. We are providing the attached Call Statistics Report from existing system In response to the following question.

Section 3.2.3.1 Talk Paths - To aid in the development of traffic engineering analyses, we request a call statistics report from the existing system that captures 24 hours of user call volume, including the busiest hours.

All other terms, conditions, and specifications remain unchanged.

Laurie Platkin  
Senior Procurement Specialist

Company Name: \_\_\_\_\_  
(please print)

Bidder's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## System Usage 04052025



### System Usage

Selected (System, RFSS, Site) Combinations: (544,1,8)

Date Range: 4/5/2025 00:00 to 4/6/2025 00:00

*Shows usage and call count summaries for the system, RFSS, and site combination selected for the specified date range*

Period Beginning	Total Time	Total Count of Calls
04/05/2025 00:00:00	1,063.5	300
04/05/2025 00:15:00	824.3	239
04/05/2025 00:30:00	1,242.9	330
04/05/2025 00:45:00	1,223.6	327
04/05/2025 01:00:00	1,232.1	331
04/05/2025 01:15:00	1,485.3	415
04/05/2025 01:30:00	706.0	181
04/05/2025 01:45:00	748.0	204
04/05/2025 02:00:00	943.7	274
04/05/2025 02:15:00	767.0	199
04/05/2025 02:30:00	1,220.5	349
04/05/2025 02:45:00	605.4	154
04/05/2025 03:00:00	516.6	138
04/05/2025 03:15:00	410.9	105
04/05/2025 03:30:00	643.6	140
04/05/2025 03:45:00	413.0	102
04/05/2025 04:00:00	265.1	78
04/05/2025 04:15:00	255.8	64
04/05/2025 04:30:00	321.4	85
04/05/2025 04:45:00	483.5	127
04/05/2025 05:00:00	348.3	94
04/05/2025 05:15:00	503.6	149
04/05/2025 05:30:00	348.9	107
04/05/2025 05:45:00	728.5	158
04/05/2025 06:00:00	785.6	226
04/05/2025 06:15:00	857.5	207
04/05/2025 06:30:00	631.5	174
04/05/2025 06:45:00	654.8	158
04/05/2025 07:00:00	837.8	242
04/05/2025 07:15:00	720.6	219
04/05/2025 07:30:00	673.4	217
04/05/2025 07:45:00	628.2	180
04/05/2025 08:00:00	974.4	257
04/05/2025 08:15:00	652.3	201
04/05/2025 08:30:00	781.9	226
04/05/2025 08:45:00	780.8	247
04/05/2025 09:00:00	871.1	264
04/05/2025 09:15:00	908.2	256
04/05/2025 09:30:00	512.8	145
04/05/2025 09:45:00	739.4	207
04/05/2025 10:00:00	900.8	252
04/05/2025 10:15:00	626.3	195
04/05/2025 10:30:00	1,090.0	280
04/05/2025 10:45:00	1,098.0	303

Total\_Usage

Page 1 of 16

## System Usage 04052025

<i>Period Beginning</i>	<i>Total Time</i>	<i>Total Count of Calls</i>
04/05/2025 11:00:00	885.6	256
04/05/2025 11:15:00	1,243.5	356
04/05/2025 11:30:00	756.7	212
04/05/2025 11:45:00	903.6	242
04/05/2025 12:00:00	918.0	252
04/05/2025 12:15:00	950.6	253
04/05/2025 12:30:00	1,717.1	443
04/05/2025 12:45:00	1,218.5	318
04/05/2025 13:00:00	1,475.6	388
04/05/2025 13:15:00	1,528.4	383
04/05/2025 13:30:00	1,120.6	284
04/05/2025 13:45:00	1,007.8	240
04/05/2025 14:00:00	1,494.6	393
04/05/2025 14:15:00	1,033.4	262
04/05/2025 14:30:00	1,259.0	299
04/05/2025 14:45:00	1,091.5	294
04/05/2025 15:00:00	851.4	230
04/05/2025 15:15:00	1,356.3	328
04/05/2025 15:30:00	916.1	244
04/05/2025 15:45:00	1,104.0	303
04/05/2025 16:00:00	1,255.4	305
04/05/2025 16:15:00	1,625.3	386
04/05/2025 16:30:00	1,173.0	297
04/05/2025 16:45:00	1,034.1	277
04/05/2025 17:00:00	996.0	282
04/05/2025 17:15:00	1,102.2	287
04/05/2025 17:30:00	1,614.5	403
04/05/2025 17:45:00	1,762.1	420
04/05/2025 18:00:00	1,730.8	399
04/05/2025 18:15:00	1,856.2	427
04/05/2025 18:30:00	1,738.2	398
04/05/2025 18:45:00	1,637.9	406
04/05/2025 19:00:00	1,276.6	348
04/05/2025 19:15:00	1,301.9	308
04/05/2025 19:30:00	1,280.2	314
04/05/2025 19:45:00	1,575.4	394
04/05/2025 20:00:00	1,167.5	319
04/05/2025 20:15:00	755.1	223
04/05/2025 20:30:00	1,464.7	358
04/05/2025 20:45:00	2,147.9	505
04/05/2025 21:00:00	1,542.0	422
04/05/2025 21:15:00	1,409.5	397
04/05/2025 21:30:00	1,799.0	455
04/05/2025 21:45:00	1,430.6	366
04/05/2025 22:00:00	2,072.9	492
04/05/2025 22:15:00	1,861.1	433
04/05/2025 22:30:00	1,729.8	427
04/05/2025 22:45:00	1,468.6	385
04/05/2025 23:00:00	1,629.0	451
04/05/2025 23:15:00	1,982.7	486
04/05/2025 23:30:00	1,091.2	299
04/05/2025 23:45:00	904.7	254
	<b>103,275.5</b>	<b>27,009</b>

## System Usage 04052025



System Usage	
Selected (System, RFSS, Site) Combinations:	(544,1,8)
Date Range:	4/5/2025 00:00 to 4/6/2025 00:00
Shows usage and call count summaries for the system, RFSS, and site combination selected for the specified date range	

Period Beginning	Total Busy Time	Total Count of Busies
04/05/2025 00:00:00	0.0	0
04/05/2025 00:15:00	0.0	0
04/05/2025 00:30:00	0.0	0
04/05/2025 00:45:00	0.0	0
04/05/2025 01:00:00	0.0	0
04/05/2025 01:15:00	0.0	0
04/05/2025 01:30:00	0.0	0
04/05/2025 01:45:00	0.0	0
04/05/2025 02:00:00	0.0	0
04/05/2025 02:15:00	0.0	0
04/05/2025 02:30:00	0.0	0
04/05/2025 02:45:00	0.0	0
04/05/2025 03:00:00	0.0	0
04/05/2025 03:15:00	0.0	0
04/05/2025 03:30:00	0.0	0
04/05/2025 03:45:00	0.0	0
04/05/2025 04:00:00	0.0	0
04/05/2025 04:15:00	0.0	0
04/05/2025 04:30:00	0.0	0
04/05/2025 04:45:00	0.0	0
04/05/2025 05:00:00	0.0	0
04/05/2025 05:15:00	0.0	0
04/05/2025 05:30:00	0.0	0
04/05/2025 05:45:00	0.0	0
04/05/2025 06:00:00	0.0	0
04/05/2025 06:15:00	0.0	0
04/05/2025 06:30:00	0.0	0
04/05/2025 06:45:00	0.0	0
04/05/2025 07:00:00	0.0	0
04/05/2025 07:15:00	0.0	0
04/05/2025 07:30:00	0.0	0
04/05/2025 07:45:00	0.0	0
04/05/2025 08:00:00	0.0	0
04/05/2025 08:15:00	0.0	0
04/05/2025 08:30:00	0.0	0
04/05/2025 08:45:00	0.0	0
04/05/2025 09:00:00	0.0	0
04/05/2025 09:15:00	0.0	0
04/05/2025 09:30:00	0.0	0
04/05/2025 09:45:00	0.0	0
04/05/2025 10:00:00	0.0	0
04/05/2025 10:15:00	0.0	0
04/05/2025 10:30:00	0.0	0
04/05/2025 10:45:00	0.0	0
04/05/2025 11:00:00	0.0	0
04/05/2025 11:15:00	0.0	0
04/05/2025 11:30:00	0.0	0

## System Usage 04052025

<i>Period Beginning</i>	<i>Total Busy Time</i>	<i>Total Count of Busies</i>
04/05/2025 11:45:00	0.0	0
04/05/2025 12:00:00	0.0	0
04/05/2025 12:15:00	0.0	0
04/05/2025 12:30:00	0.0	0
04/05/2025 12:45:00	0.0	0
04/05/2025 13:00:00	0.0	0
04/05/2025 13:15:00	0.0	0
04/05/2025 13:30:00	0.0	0
04/05/2025 13:45:00	0.0	0
04/05/2025 14:00:00	0.0	0
04/05/2025 14:15:00	0.0	0
04/05/2025 14:30:00	0.0	0
04/05/2025 14:45:00	0.0	0
04/05/2025 15:00:00	0.0	0
04/05/2025 15:15:00	0.0	0
04/05/2025 15:30:00	0.0	0
04/05/2025 15:45:00	0.0	0
04/05/2025 16:00:00	0.0	0
04/05/2025 16:15:00	0.0	0
04/05/2025 16:30:00	0.0	0
04/05/2025 16:45:00	0.0	0
04/05/2025 17:00:00	0.0	0
04/05/2025 17:15:00	0.0	0
04/05/2025 17:30:00	0.0	0
04/05/2025 17:45:00	0.0	0
04/05/2025 18:00:00	0.0	0
04/05/2025 18:15:00	0.0	0
04/05/2025 18:30:00	0.0	0
04/05/2025 18:45:00	0.0	0
04/05/2025 19:00:00	0.0	0
04/05/2025 19:15:00	0.0	0
04/05/2025 19:30:00	0.0	0
04/05/2025 19:45:00	0.0	0
04/05/2025 20:00:00	0.0	0
04/05/2025 20:15:00	0.0	0
04/05/2025 20:30:00	0.0	0
04/05/2025 20:45:00	0.0	0
04/05/2025 21:00:00	0.0	0
04/05/2025 21:15:00	0.0	0
04/05/2025 21:30:00	0.0	0
04/05/2025 21:45:00	0.0	0
04/05/2025 22:00:00	0.0	0
04/05/2025 22:15:00	0.0	0
04/05/2025 22:30:00	0.0	0
04/05/2025 22:45:00	0.0	0
04/05/2025 23:00:00	0.0	0
04/05/2025 23:15:00	0.0	0
04/05/2025 23:30:00	0.0	0
04/05/2025 23:45:00	0.0	0
	<b>0.0</b>	<b>0</b>

# System Usage 04052025



System Usage	
Selected (System, RFSS, Site) Combinations:	(544,1,8)
Date Range:	4/5/2025 00:00 to 4/6/2025 00:00
Shows usage and call count summaries for the system, RFSS, and site combination selected for the specified date range	

Period Beginning	Available Slots	Total Time	Unused Time	Used Slot Time	Percent Used Time	Total Count of Calls
04/05/2025 00:00:00	11	9,900	8,838.6	1,061.4	10.72%	300
04/05/2025 00:15:00	11	9,900	9,075.7	824.3	8.33%	239
04/05/2025 00:30:00	11	9,900	8,657.1	1,242.9	12.55%	330
04/05/2025 00:45:00	11	9,900	8,676.4	1,223.6	12.36%	327
04/05/2025 01:00:00	11	9,900	8,667.9	1,232.1	12.45%	331
04/05/2025 01:15:00	11	9,900	8,414.7	1,485.3	15.00%	415
04/05/2025 01:30:00	11	9,900	9,194.0	706.0	7.13%	181
04/05/2025 01:45:00	11	9,900	9,152.0	748.0	7.56%	204
04/05/2025 02:00:00	11	9,900	8,956.3	943.7	9.53%	274
04/05/2025 02:15:00	11	9,900	9,133.0	767.0	7.75%	199
04/05/2025 02:30:00	11	9,900	8,679.5	1,220.5	12.33%	349
04/05/2025 02:45:00	11	9,900	9,294.6	605.4	6.11%	154
04/05/2025 03:00:00	11	9,900	9,383.4	516.6	5.22%	138
04/05/2025 03:15:00	11	9,900	9,489.1	410.9	4.15%	105
04/05/2025 03:30:00	11	9,900	9,256.4	643.6	6.50%	140
04/05/2025 03:45:00	11	9,900	9,487.0	413.0	4.17%	102
04/05/2025 04:00:00	11	9,900	9,634.9	265.1	2.68%	78
04/05/2025 04:15:00	11	9,900	9,644.2	255.8	2.58%	64
04/05/2025 04:30:00	11	9,900	9,578.6	321.4	3.25%	85
04/05/2025 04:45:00	11	9,900	9,416.5	483.5	4.88%	127
04/05/2025 05:00:00	11	9,900	9,551.7	348.3	3.52%	94
04/05/2025 05:15:00	11	9,900	9,396.4	503.6	5.09%	149
04/05/2025 05:30:00	11	9,900	9,551.1	348.9	3.52%	107
04/05/2025 05:45:00	11	9,900	9,171.5	728.5	7.36%	158
04/05/2025 06:00:00	11	9,900	9,114.4	785.6	7.94%	226
04/05/2025 06:15:00	11	9,900	9,042.5	857.5	8.66%	207
04/05/2025 06:30:00	11	9,900	9,268.5	631.5	6.38%	174
04/05/2025 06:45:00	11	9,900	9,245.2	654.8	6.61%	158
04/05/2025 07:00:00	11	9,900	9,062.2	837.8	8.46%	242
04/05/2025 07:15:00	11	9,900	9,179.4	720.6	7.28%	219
04/05/2025 07:30:00	11	9,900	9,226.6	673.4	6.80%	217
04/05/2025 07:45:00	11	9,900	9,271.8	628.2	6.35%	180
04/05/2025 08:00:00	11	9,900	8,925.6	974.4	9.84%	257
04/05/2025 08:15:00	11	9,900	9,247.7	652.3	6.59%	201
04/05/2025 08:30:00	11	9,900	9,118.1	781.9	7.90%	226
04/05/2025 08:45:00	11	9,900	9,119.2	780.8	7.89%	247
04/05/2025 09:00:00	11	9,900	9,028.9	871.1	8.80%	264
04/05/2025 09:15:00	11	9,900	8,991.8	908.2	9.17%	256
04/05/2025 09:30:00	11	9,900	9,387.2	512.8	5.18%	145
04/05/2025 09:45:00	11	9,900	9,160.6	739.4	7.47%	207
04/05/2025 10:00:00	11	9,900	8,999.2	900.8	9.10%	252
04/05/2025 10:15:00	11	9,900	9,273.7	626.3	6.33%	195
04/05/2025 10:30:00	11	9,900	8,810.0	1,090.0	11.01%	280
04/05/2025 10:45:00	11	9,900	8,802.0	1,098.0	11.09%	303
04/05/2025 11:00:00	11	9,900	9,014.4	885.6	8.95%	256
04/05/2025 11:15:00	11	9,900	8,656.5	1,243.5	12.56%	356
04/05/2025 11:30:00	11	9,900	9,143.3	756.7	7.64%	212
04/05/2025 11:45:00	11	9,900	8,996.4	903.6	9.13%	242
04/05/2025 12:00:00	11	9,900	8,982.0	918.0	9.27%	252
04/05/2025 12:15:00	11	9,900	8,949.4	950.6	9.60%	253
04/05/2025 12:30:00	11	9,900	8,182.9	1,717.1	17.34%	443
04/05/2025 12:45:00	11	9,900	8,681.5	1,218.5	12.31%	318
04/05/2025 13:00:00	11	9,900	8,424.4	1,475.6	14.91%	388
04/05/2025 13:15:00	11	9,900	8,371.6	1,528.4	15.44%	383
04/05/2025 13:30:00	11	9,900	8,779.4	1,120.6	11.32%	284
04/05/2025 13:45:00	11	9,900	8,892.2	1,007.8	10.18%	240
04/05/2025 14:00:00	11	9,900	8,405.4	1,494.6	15.10%	393
04/05/2025 14:15:00	11	9,900	8,866.6	1,033.4	10.44%	262
04/05/2025 14:30:00	11	9,900	8,641.0	1,259.0	12.72%	299
04/05/2025 14:45:00	11	9,900	8,808.5	1,091.5	11.03%	294
04/05/2025 15:00:00	11	9,900	9,048.6	851.4	8.60%	230
04/05/2025 15:15:00	11	9,900	8,543.7	1,356.3	13.70%	328
04/05/2025 15:30:00	11	9,900	8,983.9	916.1	9.25%	244
04/05/2025 15:45:00	11	9,900	8,796.0	1,104.0	11.15%	303
04/05/2025 16:00:00	11	9,900	8,644.6	1,255.4	12.68%	305
04/05/2025 16:15:00	11	9,900	8,274.7	1,625.3	16.42%	386



# System Usage 04052025

Period Beginning	Available Slots	Total Time	Unused Time	Used Slot Time	Percent Used Time	Total Count of Calls
04/05/2025 16:30:00	11	9,900	8,727.0	1,173.0	11.85%	297
04/05/2025 16:45:00	11	9,900	8,865.9	1,034.1	10.45%	277
04/05/2025 17:00:00	11	9,900	8,904.0	996.0	10.06%	282
04/05/2025 17:15:00	11	9,900	8,797.8	1,102.2	11.13%	287
04/05/2025 17:30:00	11	9,900	8,285.5	1,614.5	16.31%	403
04/05/2025 17:45:00	11	9,900	8,137.9	1,762.1	17.80%	420
04/05/2025 18:00:00	11	9,900	8,169.2	1,730.8	17.48%	399
04/05/2025 18:15:00	11	9,900	8,043.8	1,856.2	18.75%	427
04/05/2025 18:30:00	11	9,900	8,161.8	1,738.2	17.56%	398
04/05/2025 18:45:00	11	9,900	8,262.1	1,637.9	16.54%	406
04/05/2025 19:00:00	11	9,900	8,623.4	1,276.6	12.90%	348
04/05/2025 19:15:00	11	9,900	8,598.1	1,301.9	13.15%	308
04/05/2025 19:30:00	11	9,900	8,619.8	1,280.2	12.93%	314
04/05/2025 19:45:00	11	9,900	8,324.6	1,575.4	15.91%	394
04/05/2025 20:00:00	11	9,900	8,732.5	1,167.5	11.79%	319
04/05/2025 20:15:00	11	9,900	9,144.9	755.1	7.63%	223
04/05/2025 20:30:00	11	9,900	8,435.3	1,464.7	14.79%	358
04/05/2025 20:45:00	11	9,900	7,752.1	2,147.9	21.70%	505
04/05/2025 21:00:00	11	9,900	8,358.0	1,542.0	15.58%	422
04/05/2025 21:15:00	11	9,900	8,490.5	1,409.5	14.24%	397
04/05/2025 21:30:00	11	9,900	8,101.0	1,799.0	18.17%	455
04/05/2025 21:45:00	11	9,900	8,469.4	1,430.6	14.45%	366
04/05/2025 22:00:00	11	9,900	7,827.1	2,072.9	20.94%	492
04/05/2025 22:15:00	11	9,900	8,038.9	1,861.1	18.80%	433
04/05/2025 22:30:00	11	9,900	8,170.2	1,729.8	17.47%	427
04/05/2025 22:45:00	11	9,900	8,431.4	1,468.6	14.83%	385
04/05/2025 23:00:00	11	9,900	8,271.0	1,629.0	16.45%	451
04/05/2025 23:15:00	11	9,900	7,917.3	1,982.7	20.03%	486
04/05/2025 23:30:00	11	9,900	8,808.8	1,091.2	11.02%	299
04/05/2025 23:45:00	11	9,900	8,996.1	903.9	9.13%	253
		950,400.0	847,127.4	103,272.6	10.87%	27,008

## System Usage 04052025



System Usage	
Selected (System, RFSS, Site) Combinations:	(544,1,8)
Date Range:	4/5/2025 00:00 to 4/6/2025 00:00
Shows usage and call count summaries for the system, RFSS, and site combination selected for the specified date range	

Period Beginning	Average Time	Total Count of Calls	Total Time of Calls
04/05/2025 00:00:00	3.5	300	1,063.5
04/05/2025 00:15:00	3.4	239	824.3
04/05/2025 00:30:00	3.8	330	1,242.9
04/05/2025 00:45:00	3.8	327	1,223.6
04/05/2025 01:00:00	3.7	331	1,232.1
04/05/2025 01:15:00	3.6	415	1,485.3
04/05/2025 01:30:00	3.9	181	706.0
04/05/2025 01:45:00	3.7	204	748.0
04/05/2025 02:00:00	3.5	274	943.7
04/05/2025 02:15:00	4.0	199	767.0
04/05/2025 02:30:00	3.5	349	1,220.5
04/05/2025 02:45:00	4.0	154	605.4
04/05/2025 03:00:00	3.8	138	516.6
04/05/2025 03:15:00	3.9	105	410.9
04/05/2025 03:30:00	4.6	140	643.6
04/05/2025 03:45:00	4.0	102	413.0
04/05/2025 04:00:00	3.5	78	265.1
04/05/2025 04:15:00	4.0	64	255.8
04/05/2025 04:30:00	3.8	85	321.4
04/05/2025 04:45:00	3.8	127	483.5
04/05/2025 05:00:00	3.7	94	348.3
04/05/2025 05:15:00	3.4	149	503.6
04/05/2025 05:30:00	3.3	107	348.9
04/05/2025 05:45:00	4.6	158	728.5
04/05/2025 06:00:00	3.5	226	785.6
04/05/2025 06:15:00	4.1	207	857.5
04/05/2025 06:30:00	3.6	174	631.5
04/05/2025 06:45:00	4.2	158	654.8
04/05/2025 07:00:00	3.5	242	837.8
04/05/2025 07:15:00	3.3	219	720.6
04/05/2025 07:30:00	3.1	217	673.4
04/05/2025 07:45:00	3.5	180	628.2
04/05/2025 08:00:00	3.9	257	974.4
04/05/2025 08:15:00	3.3	201	652.3
04/05/2025 08:30:00	3.4	226	781.9
04/05/2025 08:45:00	3.2	247	780.8
04/05/2025 09:00:00	3.3	264	871.1
04/05/2025 09:15:00	3.5	256	908.2
04/05/2025 09:30:00	3.6	145	512.8
04/05/2025 09:45:00	3.6	207	739.4
04/05/2025 10:00:00	3.6	252	900.8

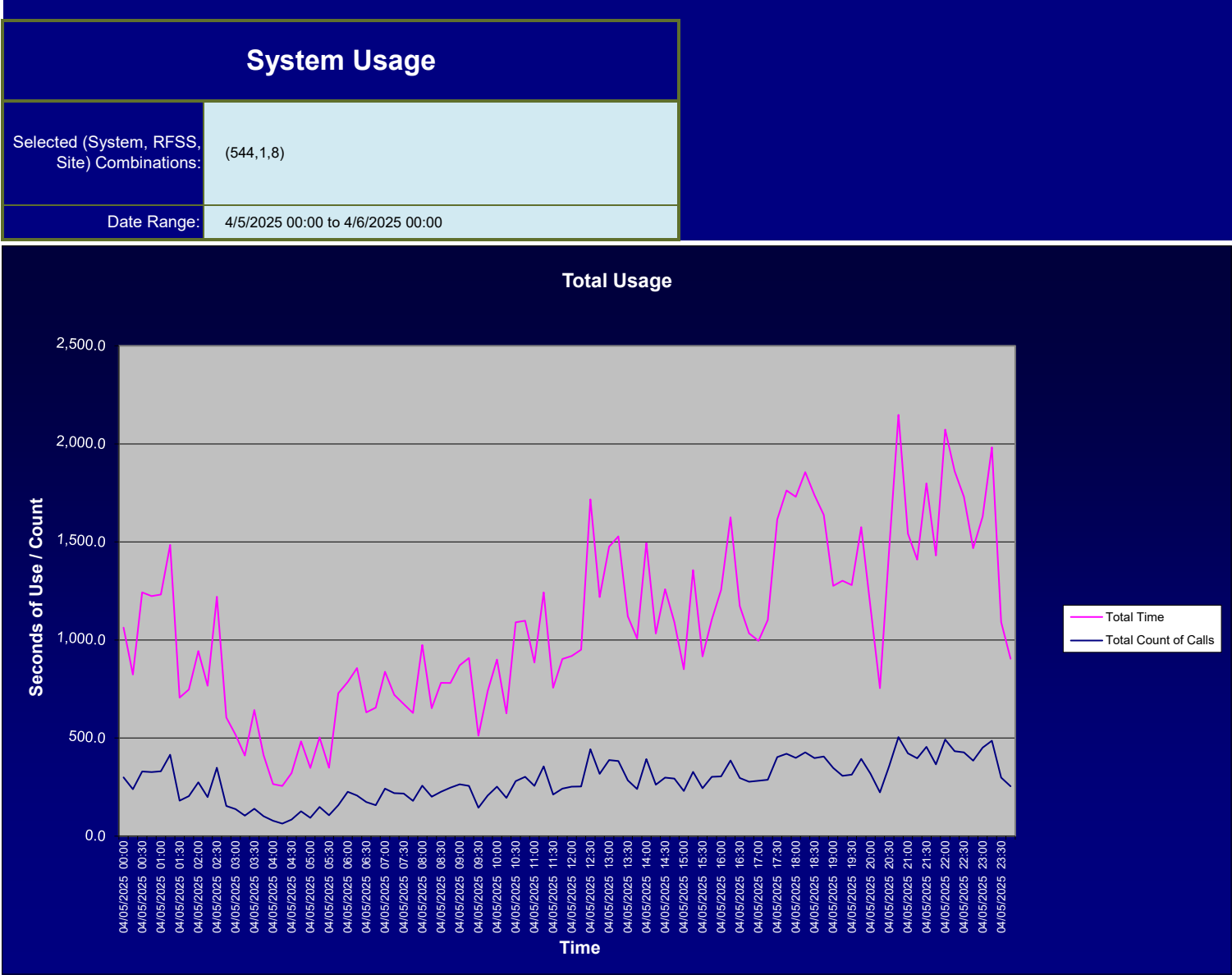
## System Usage 04052025

<i>Period Beginning</i>	<i>Average Time</i>	<i>Total Count of Calls</i>	<i>Total Time of Calls</i>
04/05/2025 10:15:00	3.2	195	626.3
04/05/2025 10:30:00	3.9	280	1,090.0
04/05/2025 10:45:00	3.6	303	1,098.0
04/05/2025 11:00:00	3.4	256	885.6
04/05/2025 11:15:00	3.5	356	1,243.5
04/05/2025 11:30:00	3.6	212	756.7
04/05/2025 11:45:00	3.7	242	903.6
04/05/2025 12:00:00	3.6	252	918.0
04/05/2025 12:15:00	3.8	253	950.6
04/05/2025 12:30:00	3.9	443	1,717.1
04/05/2025 12:45:00	3.8	318	1,218.5
04/05/2025 13:00:00	3.8	388	1,475.6
04/05/2025 13:15:00	4.0	383	1,528.4
04/05/2025 13:30:00	4.1	284	1,120.6
04/05/2025 13:45:00	4.3	240	1,007.8
04/05/2025 14:00:00	3.8	393	1,494.6
04/05/2025 14:15:00	4.0	262	1,033.4
04/05/2025 14:30:00	4.2	299	1,259.0
04/05/2025 14:45:00	3.7	294	1,091.5
04/05/2025 15:00:00	3.7	230	851.4
04/05/2025 15:15:00	4.1	328	1,356.3
04/05/2025 15:30:00	3.8	244	916.1
04/05/2025 15:45:00	3.6	303	1,104.0
04/05/2025 16:00:00	4.1	305	1,255.4
04/05/2025 16:15:00	4.2	386	1,625.3
04/05/2025 16:30:00	4.0	297	1,173.0
04/05/2025 16:45:00	3.7	277	1,034.1
04/05/2025 17:00:00	3.5	282	996.0
04/05/2025 17:15:00	4.0	287	1,102.2
04/05/2025 17:30:00	4.1	403	1,614.5
04/05/2025 17:45:00	4.2	420	1,762.1
04/05/2025 18:00:00	4.4	399	1,730.8
04/05/2025 18:15:00	4.3	427	1,856.2
04/05/2025 18:30:00	4.4	398	1,738.2
04/05/2025 18:45:00	4.0	406	1,637.9
04/05/2025 19:00:00	3.7	348	1,276.6
04/05/2025 19:15:00	4.2	308	1,301.9
04/05/2025 19:30:00	4.1	314	1,280.2
04/05/2025 19:45:00	4.0	394	1,575.4
04/05/2025 20:00:00	3.7	319	1,167.5
04/05/2025 20:15:00	3.4	223	755.1
04/05/2025 20:30:00	4.1	358	1,464.7
04/05/2025 20:45:00	4.3	505	2,147.9
04/05/2025 21:00:00	3.8	422	1,542.0
04/05/2025 21:15:00	3.6	397	1,409.5
04/05/2025 21:30:00	3.9	455	1,799.0
04/05/2025 21:45:00	3.9	366	1,430.6
04/05/2025 22:00:00	4.2	492	2,072.9
04/05/2025 22:15:00	4.3	433	1,861.1
04/05/2025 22:30:00	4.0	427	1,729.8
04/05/2025 22:45:00	3.8	385	1,468.6

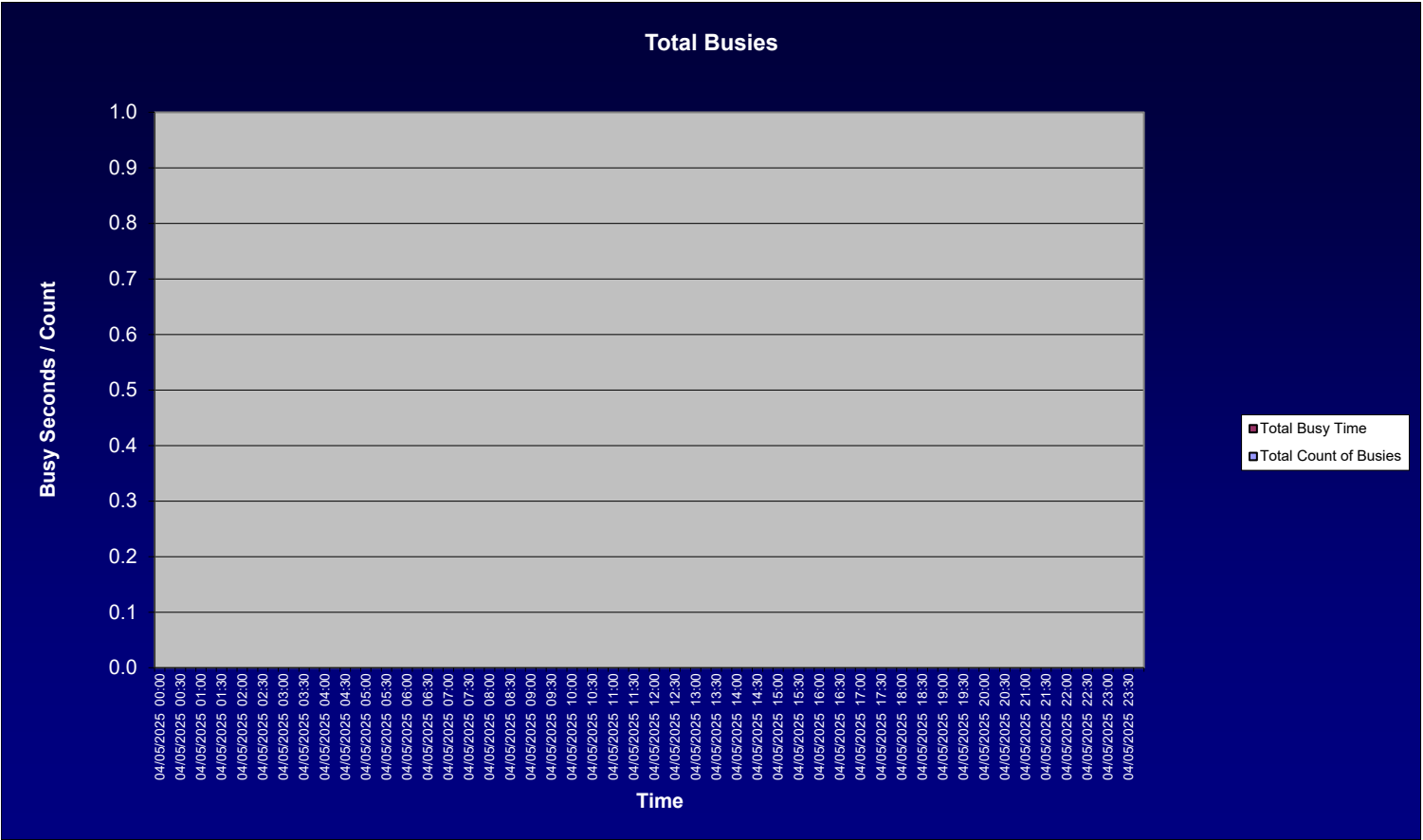
## System Usage 04052025

<i>Period Beginning</i>	<i>Average Time</i>	<i>Total Count of Calls</i>	<i>Total Time of Calls</i>
04/05/2025 23:00:00	3.6	451	1,629.0
04/05/2025 23:15:00	4.1	486	1,982.7
04/05/2025 23:30:00	3.6	299	1,091.2
04/05/2025 23:45:00	3.6	254	904.7
		<b>27,009</b>	<b>103,275.5</b>

System Usage 04052025

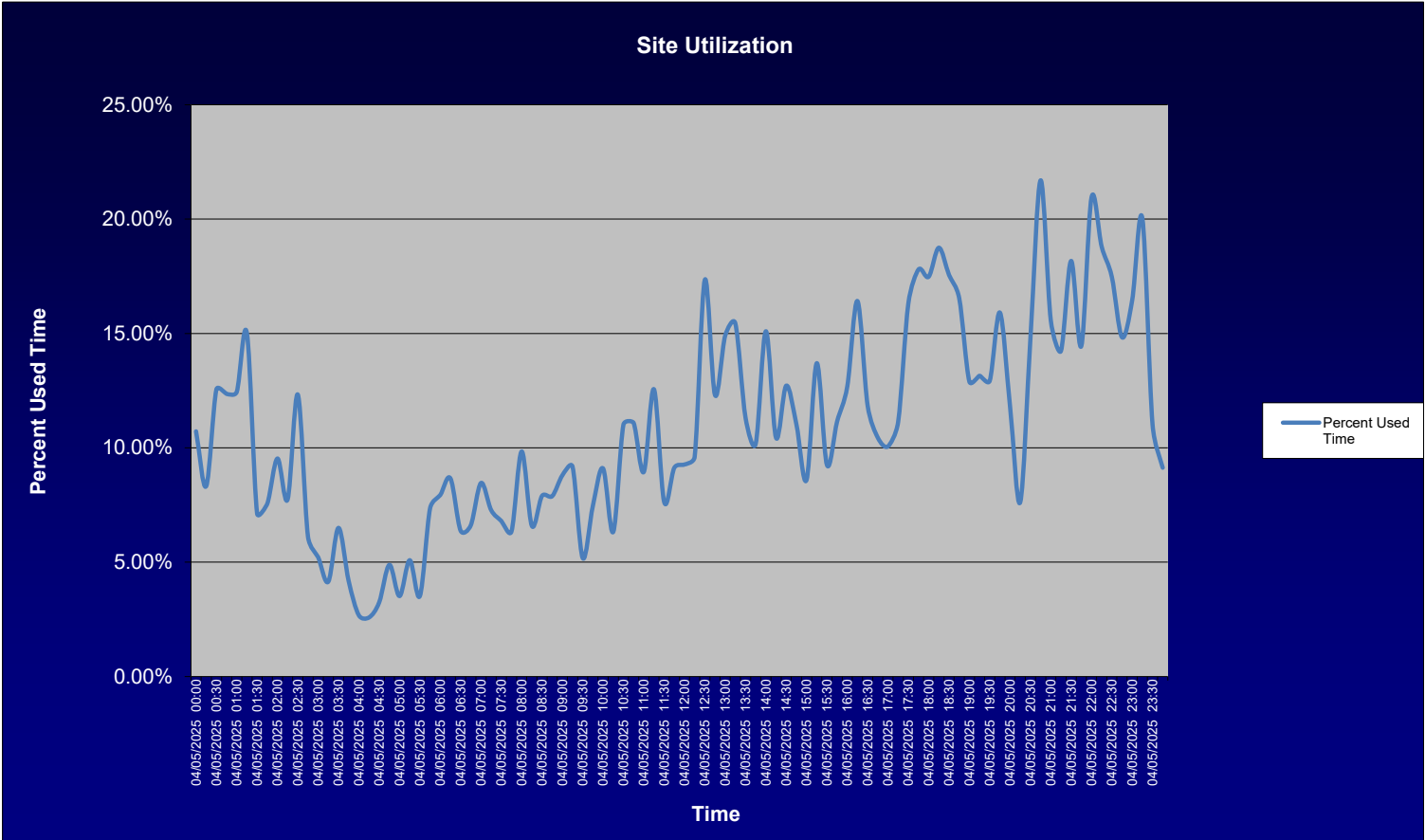


System Usage	
Selected (System, RFSS, Site) Combinations:	(544,1,8)
Date Range:	4/5/2025 00:00 to 4/6/2025 00:00

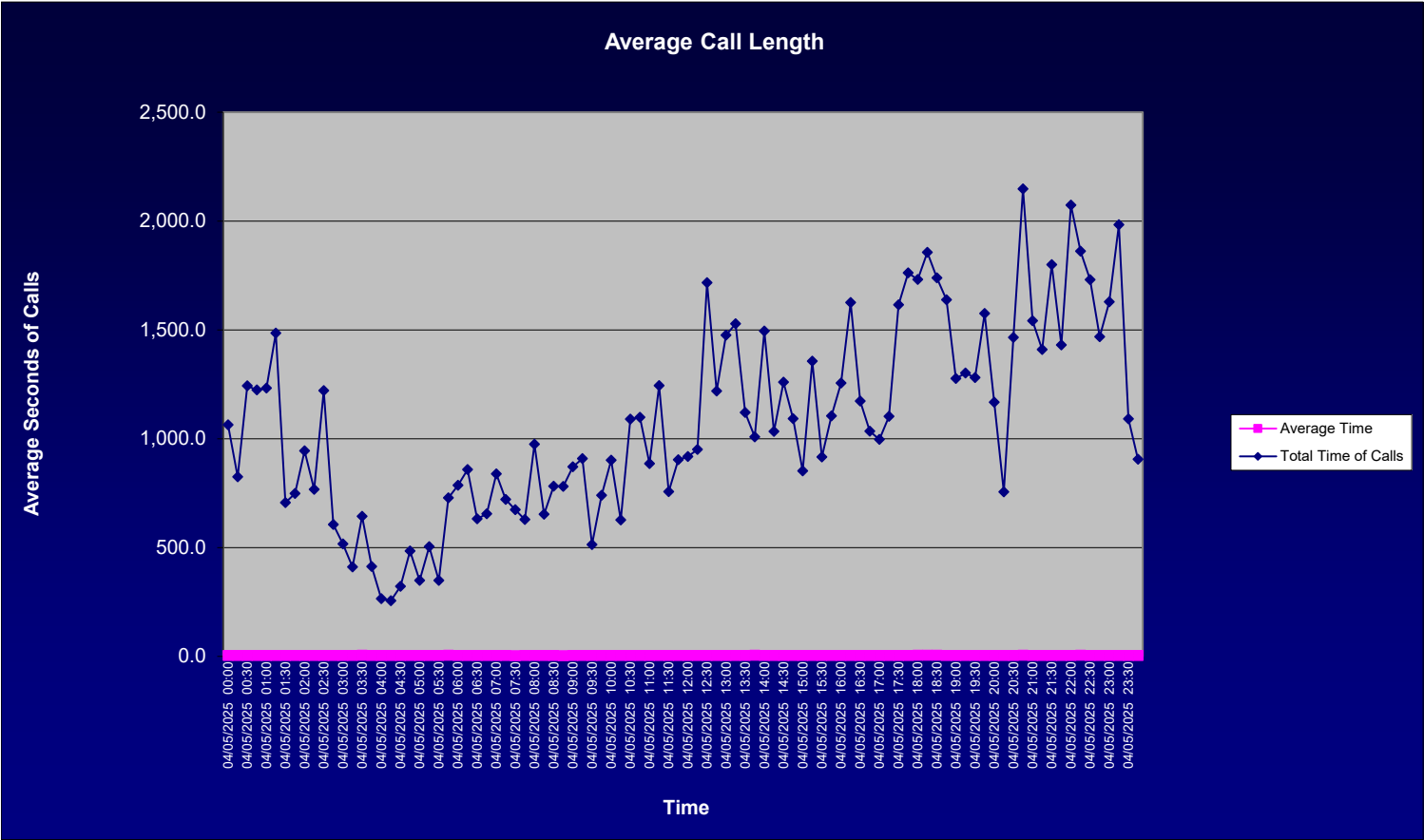


System Usage 04052025

System Usage	
Selected (System, RFSS, Site) Combinations:	(544,1,8)
Date Range:	4/5/2025 00:00 to 4/6/2025 00:00

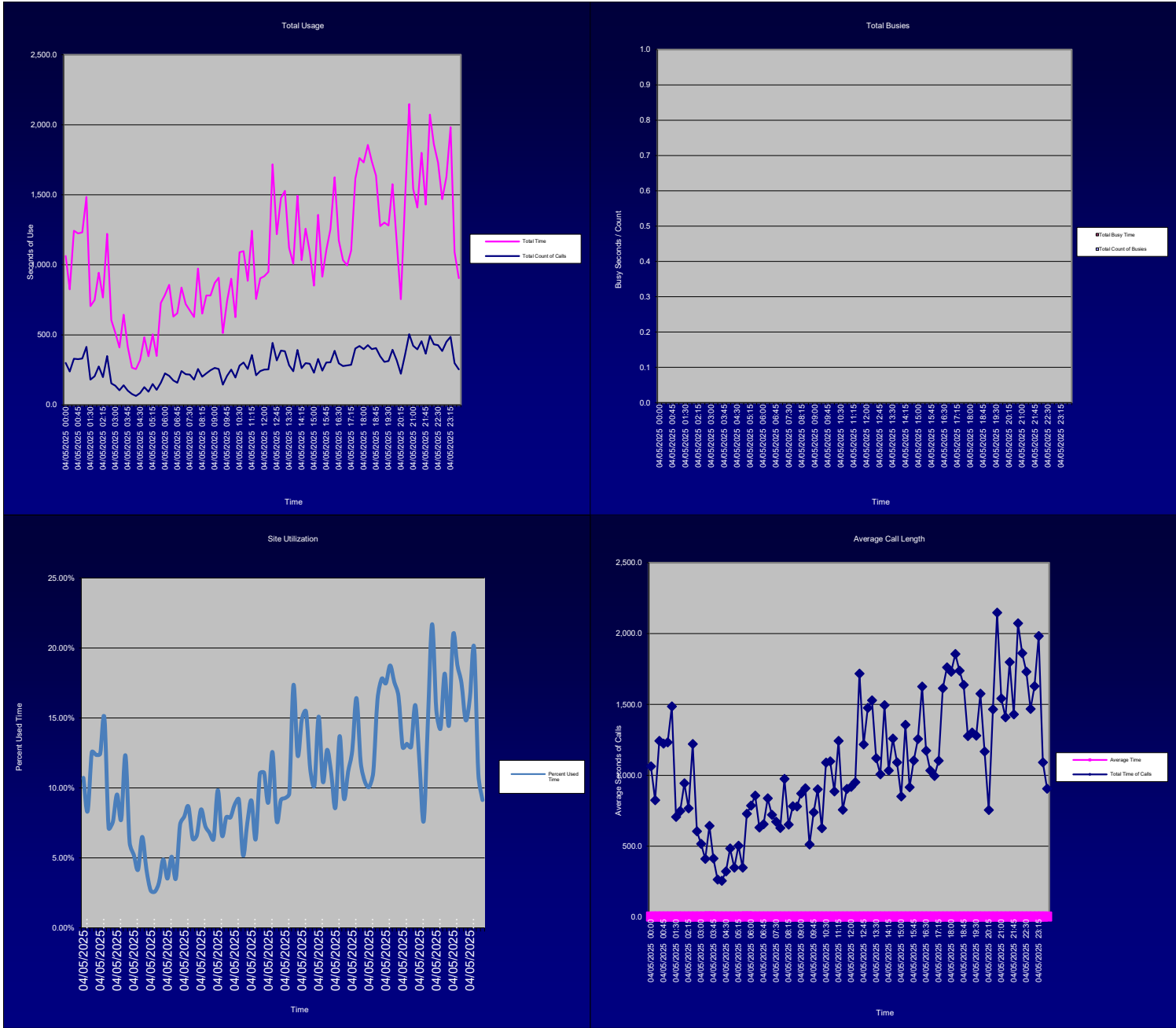


System Usage	
Selected (System, RFSS, Site) Combinations:	(544,1,8)
Date Range:	4/5/2025 00:00 to 4/6/2025 00:00





System Usage 04052025



## System Usage 04052025

This report shows calls, busies, channel usage and average call length on a selected interval in a given date range.

GenesisWorld.com	
<b>Input</b>	Cells highlighted like this one are the parameters that were input in your report request fields. The interval is the time from the starting time chosen in the Report Wizard up to (but not including) the selected ending time. All call and busy activity included in this report is limited to the channels for the site(s) targeted in this report within the interval.
<b>Date/Time Resolution</b>	<p>If the date range of this report spans:</p> <ul style="list-style-type: none"> <li>- Less than or equal to 24 hours, time will be shown in 15-minute resolution.</li> <li>- Less than or equal to 2 days, time will be shown in 1-hour resolution.</li> <li>- Greater than 2 days, time will be shown in 1-day resolution.</li> </ul> <p>Partial ranges will be included in report results. Entering a partial range will return results only for the interval specified by the user. For example, if a time range from 1:00 p.m. to 3:40 p.m. on the same day is entered the last interval to appear will be 3:30 and will only include the data for the 10 minutes from 3:30 to 3:40. All calculations will be for the 10 minute span rather than a full 15-minute span in this case.</p> <p>For the Monthly report type, if the starting and/or ending time specified by the user falls within an interval, the report will truncate partial months. For example, the full month of January is 1/1/2018 12:00 a.m. through 2/1/2018 12:00 a.m. Setting the Date Range from 1/1/2018 12:00 a.m. to 2/15/2018 12:00 a.m. would result in a Monthly report for January.</p>
<b>Total Usage</b>	
<b>Period Beginning</b>	Date and time of interval.
<b>Total Time</b>	Total call seconds that occurred during the interval on the channels for the site(s) targeted in this report.
<b>Total Count of Calls</b>	Total number of calls that started in the interval on the channels for the site(s) targeted in this report.
<b>Total Busies</b>	
<b>Period Beginning</b>	Date and time of the interval.
<b>Total Busy Time</b>	Total busy seconds that occurred during the interval on the site(s) targeted in this report.
<b>Total Count of Busies</b>	Total count of busies that started in the interval on the site(s) targeted in this report.
<b>Site Utilization</b>	
<b>Period Beginning</b>	Date and time of the interval
<b>Available Slots</b>	Number of slots on the channels marked as Voice in Alias. If the radio system uses control channels and all channels for the site(s) targeted in this report are marked as Voice, one is subtracted from each site to allow for the control channel.
<b>Total Time Unused Time</b>	Total slot seconds possible during the interval on the channels for the site(s) targeted in this report.
<b>Used Slot Time</b>	Amount of unused slot seconds in the interval.
<b>Percent Used Time</b>	Used slot seconds during the interval on the channels for the site(s) targeted in this report.
<b>Percent Used Time</b>	Used slot seconds in the interval on the channels for the site(s) targeted in this report / (seconds in interval * Available Slots ). (See description of Available Slots above.)
<b>Total Count of Calls</b>	Total calls that started in the interval on the channels for the site(s) targeted in this report.
<b>Average Call Length</b>	

## System Usage 04052025

<b>Period Beginning</b>	Date and time of interval.
<b>Average Time</b>	Average length of calls that started or were in progress in the interval on the channels for the site(s) targeted in this report.
<b>Total Count of Calls</b>	Total calls that started in the interval on the channels for the site(s) targeted in this report.
<b>Total Time of Calls</b>	Total slot seconds during the interval on the channels for the site(s) targeted in this report.
<b>Graph Printing</b>	To print an individual graph, click on the graph then click the printer icon.



City of Fort Lauderdale • Procurement Services Division  
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## **ADDENDUM NO. 4**

RFP No. 358

TITLE: P25 Radio Communication System Refresh-Replacement

ISSUED: April 22, 2025

This addendum is being issued to make the following change(s).

1. Providing sign-in sheets from Pre-Bid Conference Site Visits.

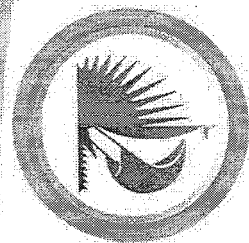
All other terms, conditions, and specifications remain unchanged.

Laurie Platkin  
Senior Procurement Specialist

Company Name: \_\_\_\_\_  
(please print)

Bidder's Signature: \_\_\_\_\_

Date: \_\_\_\_\_



# FINANCE DEPARTMENT RFP PRE-PROPOSAL MEETING SIGN-IN SHEET

DATE: 04/21/2025

TIME: 10:30

☒ AM ☐ PM

OPENING DATE: 06/26/2025

PROCUREMENT CONTACT: Laurie Platin

RFP#: 358

RFP TITLE: P25 Radio Communication System Refresh-Replacement

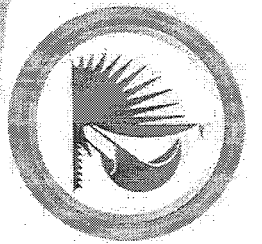


CAM #25-0889

Exhibit 1

Page 181 of 187

NAME	COMPANY	PHONE	EMAIL
Laurie Platin	City of Fort Lauderdale	954-828-5138	lplatin@fortlauderdale.gov
Jason Swift	City of Fort Lauderdale	954-828-5790	jswift@fortlauderdale.gov
James Baker	City of Fort Lauderdale	954-828-5732	jbaker@fortlauderdale.gov
John Malin	City of Fort Lauderdale	954-828-	jmalin@fortlauderdale.gov
Dean Hart	Tusa Consulting Services	816-518-9223	dean.hart@tusaconsulting.com
Rebecca Norwood	Tusa Consulting Services	919-473-6820	rebecca.norwood@tusaconsulting.com
Ron Bender	ci	434.944-5266	rbender@askyci.com
Randy Sampson	Tower Systems	317 647 3771	rsampson@towersystems.com
Mark Staley	ci	772 321 7203	mstaley@askyci.com
FRED Gailhard	K34	4134-241-4352	FRED.GAILHARD@K3HERNIS.COM
NEAL SAEZMAN	Aviary Networks	312-543-0559	neal.saezman@aviary.net
Paul Elorrieta	Aviary Networks	561-768-0092	Paul.Elorrieta@aviary.net
Thom Bendley	MSI	804-314-8650	Thom.Bendley@msi.com



# FINANCE DEPARTMENT RFP PRE-PROPOSAL MEETING SIGN-IN SHEET



DATE: 04/21/2025 TIME: 10:30 ☒ AM ☐ PM

OPENING DATE: 06/26/2025 PROCUREMENT CONTACT: Laurie Platin

RFP#: 358 RFP TITLE: P25 Radio Communication System Refresh-Replacement

NAME	COMPANY	PHONE	EMAIL
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Meghan Mercer	CI	407-885-9624	mmercer@ask4ci.com
John-Rae Gouzaliz	CI	205-401-2114	jgouzaliz@ask4ci.com
Cindy Harris	ETS	214-288-8208	cyndy@etsi.com
Marshall Baker	FPS	561-400-9011	marshall@mgblawfirm.com
Matthew St-Pierre	CI	386-871-5442	mstpierre@ask4ci.com
Jason Wehrich	NOT	521-339-5733	jason.wehrich@motorolasolutions.com
Joe Warner	NOT	318-204-9300	joseph.warner@motorolasolutions.com
Angelos Liveris	NNI	954-235-5778	angelos.liveris@microwarenetworks.com
Ishaan Kohli	NOT	765-413-8773	ISHAAN.KOHLI@motorolasolutions.com
Brian Kennedy	Motrola	561 719 1562	AKEN003@MotorolaSolutions.com
Jonathan Lavelle	NOT	786-385-2071	jonathan.lavelle@motorolasolutions.com
PTLicia Carracina	LYHANS	954 65 3803	PTLicia.CARRACINA@LYHANS.com
ANDY DENT	MOTOROLA	954-632-9640	ANDREW.DENT@MOTOROLA.com



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## ADDENDUM NO. 5

RFP No. 358

TITLE: P25 Radio Communication System Refresh-Replacement

ISSUED: May 14, 2025

This addendum is being issued to make the following change(s).

The Specifications and Requirements have been revised. Words in strikethrough are deletions from the existing text and words in bold underline are additions to the existing text (~~strikethrough removed~~; **underlined bolded is added**).

1. Appendices F Sections 1.7 and 1.8 shall now read as follows:

1.7 All router and switch configurations will be provided to be reviewed by the City but not managed by ~~the country~~ **Broward County**.

1.8 Any changes to firewall rules or access control list configurations will be Section G - Network Management Req reviewed and approved by ~~the country~~ **Broward County** prior to implementation.

2. Section 3.42.1 of the solicitation shall read as follows:

3.41.1 A list of radio/subscriber needs by agency is attached. **See Appendix G**

3. **Line Item 25 Training Costs** has been added to the solicitation.

All other terms, conditions, and specifications remain unchanged.

Laurie Platkin  
Senior Procurement Specialist

Company Name: \_\_\_\_\_  
(please print)

Bidder's Signature: \_\_\_\_\_

Date: \_\_\_\_\_



## ADDENDUM NO. 6

RFP No. 358

TITLE: P25 Radio Communication System Refresh-Replacement

ISSUED: June 3, 2025

This addendum is being issued to make the following change(s).

The Specifications and Requirements have been revised. Words in strikethrough are deletions from the existing text and words in bold underline are additions to the existing text (~~strikethrough removed~~; **underlined bolded is added**).

1. Section 3.21.7.1.G.1 under Electronic Specifications shall now read as follows:

1. It is a critical requirement that power loss or surges shall not affect radio dispatch operations.
  - a. Power loss or surges shall not alter the system software or operating parameters at the radio dispatch positions
  - b. External power to each console shall be supplied by a nominal 120VAC, 60Hz, single-phase power source.
  - c. **All dispatch console equipment in each dispatch facility shall be connected to a per position UPS or DC power plant per all positions desired.**
  - ~~c. All dispatch console equipment, in each dispatch facility, shall be connected to an individual outlet on a circuit that is protected by an existing UPS and supported by the site's emergency power generator.~~
  - ~~d. The Vendor will provide a load study to ensure and validate the UPS and generator are sized to support any new equipment in the dispatch center.~~

~~\*Attach Load Study Documentation~~

2. Revised Question Document - Event 358-Attachment Check List has been revised as line item 29, Load Study Documentation, is no longer needed.

All other terms, conditions, and specifications remain unchanged.

Laurie Platkin  
Senior Procurement Specialist





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Company Name: \_\_\_\_\_  
(please print)

Bidder's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Event 358-Attachment Check List

**Proposer Shall Compile One (1) PDF of ALL Attachments in Sequential Order Per the Items Listed on This Checklist and Attach in the Questions Section of this RFP**

Item	Section	Description	Confirm
1	3.1.1.1	Project Manager Documentation	<input type="checkbox"/>
2	3.1.2.1	Resumes of all Project Team Members	<input type="checkbox"/>
3	3.1.3.3	Subcontractor Description and Qualifications Documentation	<input type="checkbox"/>
4		Subcontractor Disclosure Form	<input type="checkbox"/>
5	3.1.4.1	Information on Project 1	<input type="checkbox"/>
6		Information on Project 2	<input type="checkbox"/>
7		Information on Project 3	<input type="checkbox"/>
8	3.1.4.2 A	Propose Equipment Capable of Operations	<input type="checkbox"/>
9	3.1.4.2.B	Information about Service and Support	<input type="checkbox"/>
10	3.1.5.1 B	Ongoing Maintenance and Support Program Description and Timeline	<input type="checkbox"/>
11	3.1.8.2	Project Timeline Summary	<input type="checkbox"/>
12		Project Timeline Full Summary	<input type="checkbox"/>
13	3.1.9.1 B	FCC Type Acceptance for Proposed Equipment	<input type="checkbox"/>
14	3.1.9.2 B	List of Special Requirements	<input type="checkbox"/>
15	3.1.14.2.D	Sample Acceptance Test Plan	<input type="checkbox"/>
16	3.3.3.8	Contingency Plan	<input type="checkbox"/>
17	3.4.13.2 F	Functional Description of Proposed Broadband Gateway Platform or Solution	<input type="checkbox"/>
18	3.4.15.5	Configuration Diagrams and Coverage Maps	<input type="checkbox"/>
19	3.10.1.10	700/800 MHz P25 Repeater Station Cutsheets	<input type="checkbox"/>
20	3.11.10	Dual Stiff Arms/Ruggedized Mounts	<input type="checkbox"/>
21	3.12.2.1	Technical Specification Literature for proposed microwave radio, antenna and related equipment	<input type="checkbox"/>
22	3.12.2.2 A	A sample path profile analysis indicative of the scope to be used during the actual microwave analysis process. The sample analysis shall include all of the tower sites that encompass the Vendor's proposed radio infrastructure configuration.	<input type="checkbox"/>
23	3.12.2.3	A sample test and alignment verification process, to be used during commissioning of the microwave subsystem.	<input type="checkbox"/>
24	3.12.2.5 B	The Vendor will provide the bandwidth provided by the proposed microwave system	<input type="checkbox"/>
25	3.21.5.3.B1	Self-Testing and Diagnosis Documentation	<input type="checkbox"/>
26	3.21.5.3.B2	Distribution of Diagnostics Documentation	<input type="checkbox"/>
27	3.21.5.3.H	Console Modularity / Repair Documentation	<input type="checkbox"/>
28	3.21.7.1.G	Power Supply/Backup Power - UPS Documentation	<input type="checkbox"/>
29	<del>3.21.7.1.G1d</del>	<del>Load Study Documentation</del>	<del><input type="checkbox"/></del>
30	3.21.8	Flat Panel Display Documentation	<input type="checkbox"/>

## Event 358-Attachment Check List

**Proposer Shall Compile One (1) PDF of ALL Attachments in Sequential Order Per the Items Listed on This Checklist and Attach in the Questions Section of this RFP**

Item	Section	Description	Confirm
31	3.21.9	Headset Jack Documentation	<input type="checkbox"/>
32	3.21.10	Footswitch Documentation	<input type="checkbox"/>
33	3.21.11	Master Time Source Documentation	<input type="checkbox"/>
34	3.21.12	Telecommunicators Headset Documentation	<input type="checkbox"/>
35	3.22.1	Fallback Control Station documentation	<input type="checkbox"/>
36	3.23.1.1	Telecommunicators Training Documentation	<input type="checkbox"/>
37	3.23.5	Fallback Training Documentation	<input type="checkbox"/>
38	3.23.8	Trainer Resumes Documentation	<input type="checkbox"/>
39	3.24.2.1	Logging Recorder Documentation	<input type="checkbox"/>
40	3.25.3	Dispatch Console supporting documentation	<input type="checkbox"/>
41	3.26.1	Shelter Design Documentation	<input type="checkbox"/>
42	3.26.1.1.F	FEMA Floodplain documentation	<input type="checkbox"/>
43	3.26.1.1.F2	List of Proposed Sites with indication of those in a FEMA Floodplain	<input type="checkbox"/>
44	3.34.2.13	Sample Tower Design Documentation for this Section	<input type="checkbox"/>
45	3.42.2.1.A	FCC Type Acceptance Documentation	<input type="checkbox"/>
46	3.42.2.2	End-of-Support/End-of-Life Product List	<input type="checkbox"/>
47	3.42.3.1	P25 CAP Certification Documentation	<input type="checkbox"/>
48	3.34.3.1A	P25 Compliance Management Documentation	<input type="checkbox"/>
49	3.42.3.2	Special Services Documentation	<input type="checkbox"/>
50	3.42.4.1	Programming Documentation	<input type="checkbox"/>
51	3.34.4.2	Key Loading Documentation	<input type="checkbox"/>
53	3.42.5.1.C	MIL-STD Documentation	<input type="checkbox"/>
54	3.42.5.2.A	Portable Radio Accessory Documentation	<input type="checkbox"/>
55	3.42.5.2.D	Portable Radio Carrying Case Option Documentation	<input type="checkbox"/>
56	3.42.5.2.E	Antenna Specifications Documentatio	<input type="checkbox"/>
57	3.42.5.3.C1	Power Calculations Documentation	<input type="checkbox"/>
58	3.42.6.1	Mounting Options Documentation	<input type="checkbox"/>
59	3.42.8.2.A	Local and Remote-Control Option Documentation	<input type="checkbox"/>
60	3.42.9.4.A	Training Description	<input type="checkbox"/>
61	3.42.9.6	Training Staff Resumes	<input type="checkbox"/>
62	3.44.1.8.I	Sample Test and Acceptance Plan	<input type="checkbox"/>
63	3.45.1.1.A1a	Warranty and Post Warranty Matrix	<input type="checkbox"/>
64	3.45.6.2	Per-Site Granualr Detail	<input type="checkbox"/>